# Appendix A: MEPA Distribution List

# Appendix A: MEPA Distribution List

## Federal

U.S. Army Corps of Engineers
New England District
Attention: Josh Helms, Regulatory Division
696 Virginia Road
Concord, MA 01742-2751

## Commonwealth of Massachusetts

Secretary Matthew A. Beaton
Executive Office of Energy and Environmental Affairs
Attn: MEPA Office
100 Cambridge Street, Suite 900
Boston, MA 02114

Undersecretary Ned Bartlett
Executive Office of Energy and Environmental Affairs
Attn: MEPA Office
100 Cambridge Street, Suite 900
Boston, MA 02114

Secretary Jay Ash
Executive Office of Housing and Economic Development
One Ashburton Place, Room 2101
Boston, MA 02108

Commissioner Martin Suuberg
Department of Environmental Protection, Waterways Program
One Winter Street
Boston, MA 02108

Deputy Commissioner Gary Moran
Department of Environmental Protection
One Winter Street
Boston, MA 02108

Ben Lynch, Program Chief
Department of Environmental Protection, Waterways Program
One Winter Street
Boston, MA 02108

DEP/Northeast Regional Office
Attn: John D. Viola
205B Lowell Street
Wilmington, MA 01887

Massachusetts Department of Transportation
Public/Private Development Unit
ATTN: Lionel Lucien
10 Park Plaza
Boston, MA 02116

Massachusetts Department of Transportation – District #6
Attn: MEPA Coordinator
185 Kneeland Street
Boston, MA 02111

Massachusetts Historical Commission
Attn: Brona Simon
The MA Archives Building
220 Morrissey Boulevard
Boston, MA 02125

Metropolitan Area Planning Council
60 Temple Place, 6th Floor
Boston, MA 02111

Massachusetts Water Resources Authority
Attn: Marianne Connolly
Charlestown Navy Yard
100 First Avenue, Building 39
Boston, MA 02129

Massachusetts Department of Energy Resources
Attn: Paul F. Ormond
100 Cambridge Street, Suite 1020
Boston, MA 02114

Massachusetts Bay Transportation Authority
Attn: MEPA Coordinator
10 Park Plaza, 6th Fl.
Boston, MA 02116-3966

Division of Marine Fisheries
(North Shore)
Attn: Environmental Reviewer
30 Emerson Avenue
Gloucester, MA 01930

Massachusetts Port Authority
Attn: Lisa Wieland
1 Harborside Drive, Suite 200S
Boston, MA 02128

Massachusetts Office of Coastal Zone Management
Attn: Bruce Carlisle
251 Causeway Street, Suite 800
Boston, MA 02114-2136

Senator Linda Dorcena Forry
24 Beacon Street, Room 410
Boston, MA 02133

Congressman Stephen F. Lynch
2268 Rayburn House Office Building
Washington, DC 20515

Representative Nick Collins
State House, Room 39
Boston, MA 02133

## City of Boston

Boston Planning & Development Agency
Attn: Brian P. Golden, Director
One City Hall Square, 9th Floor
Boston, MA 02201

Boston Planning & Development Agency
Attn: Richard McGuinness
One City Hall Square, 9th Floor
Boston, MA 02201

Office of Environment, Energy & Open Space
Attn: Austin Blackmon, Chief
One City Hall Square, Room 709
Boston, MA 02201

Chief of Economic Development
John Barros
One City Hall Square, 9th Floor
Boston, MA 02201

Boston City Council
One City Hall Square, 5th Floor
Boston, MA 02201

Boston Transportation Department
200 I-93 Frontage Rd
Boston, MA 02118

Boston Department of Public Works
1 City Hall Square, Room 714
Boston, MA 02201

Boston Conservation Commission
One City Hall Square, Room 805
Boston, MA 02201

Boston Landmarks Commission
One City Hall Square, Room 805
Boston, MA 02201

Boston Public Health Commission
Attn: Monica Valdes Lupi
1010 Massachusetts Avenue
Boston, MA 02118

Boston Water and Sewer Commission
Attn: John P. Sullivan
980 Harrison Avenue
Boston, MA 02119

Boston Public Library
700 Boylston Street
Boston, MA 02116

Boston Public Library
South Boston Branch
646 East Broadway
South Boston, MA 02127

Councilor Michael F. Flaherty
Boston City Hall, 5th Floor
Boston, MA 02201

## Other Interested Parties

Boston Harbor Now
Attn: Jill Valdes Horwood
15 State Street, Suite 1100
Boston, MA 02109

Conservation Law Foundation
Attn: Deanna Moran
62 Summer Street
Boston, MA 02110

Save the Harbor / Save the Bay
212 Northern Ave, Room 304
Boston, MA 02210

Boston Preservation Alliance
Attn: Greg Galer
The Otis House
141 Cambridge Street
Boston, MA 02114

WalkBoston
Attn: Wendy Landman
45 School Street
Boston, MA 02108

South Boston Neighborhood
Development Corporation
Attn: Donna Brown
365 West Broadway
Boston, MA 02127

Residents
Eileen Smith
Jim Coveno

# Appendix B: BPDA Checklists

**Accessibility Checklist**

**Climate Change Preparedness and Resiliency Checklist**

boston planning & development agency

# Climate Resiliency Checklist

NOTE: Project filings should be prepared and submitted using the online Climate Resiliency Checklist.

## A.1 - Project Information

| | | | | |
|---|---|---|---|---|
| Project Name: | **L Street Station Redevelopment** | | | |
| Project Address: | **776 Summer Street, Boston, MA 02127** | | | |
| Project Address Additional: | **N/A** | | | |
| Filing Type (*select*) | *Initial (PNF, EPNF, NPC or **other substantial filing**)*<br>*Design / Building Permit (prior to final design approval), or*<br>*Construction / Certificate of Occupancy (post construction completion)* | | | |
| Filing Contact | **Ralph Cox** | **Redgate** | **ralph.cox@redgate-re.com** | **(617) 904-7000** |
| Is MEPA approval required | ***Yes**/no* | | *Date* | |

## A.3 - Project Team

| | |
|---|---|
| Owner / Developer: | **HRP 776 Summer Street, LLC, c/o Hilco Real Estate** |
| Architect: | **Stantec Architecture** |
| Engineer: | **VHB** |
| Sustainability / LEED: | **WSP** |
| Permitting: | **VHB** |
| Construction Management: | **TBD** |

## A.3 - Project Description and Design Conditions

| | |
|---|---|
| List the principal Building Uses: | **Mixed Use** |
| List the First Floor Uses: | **Mixed Use** |
| List any Critical Site Infrastructure and or Building Uses: | **Mixed Use** |

**Site and Building:**

| | | | |
|---|---|---|---|
| Site Area: | *15 acres* | Building Area: | *1.93 MSF* |
| Building Height: | *Up to 210 Ft* | Building Height: | *Up to 210* |
| Existing Site Elevation – Low: | *16.5 Ft BCB* | Existing Site Elevation – High: | *16.5 Ft BCB* |
| Proposed Site Elevation – Low: | *31 Ft BCB* | Proposed Site Elevation – High: | *31 Ft BCB* |
| Proposed First Floor Elevation: | *21.5 Ft BCB* | Below grade levels: | *Varies* |

**Article 37 Green Building:**

| | | | |
|---|---|---|---|
| LEED Version - Rating System : | **New Construction (version 4)** | LEED Certification: | *TBD* |

| | | | |
|---|---|---|---|
| Proposed LEED rating: | *Certified/**Silver/ Gold**/Platinum* | Proposed LEED point score: | *54-63* |

**Building Envelope**

When reporting R values, differentiate between R discontinuous and R continuous. For example, use "R13" to show R13 discontinuous and use R10c.i. to show R10 continuous. When reporting U value, report total assembly U value including supports and structural elements.

| | | | |
|---|---|---|---|
| Roof: | *R-40 (R)* | Exposed Floor: | *R-30 (R)* |
| Foundation Wall: | *C-0.119* | Slab Edge (at or below grade): | *F-0.51* |

Vertical Above-grade Assemblies (%'s are of total vertical area and together should total 100%):

| | | | |
|---|---|---|---|
| Area of Opaque Curtain Wall & Spandrel Assembly: | *TBD %* | Wall & Spandrel Assembly Value: | *U-0.055 (U)* |
| Area of Framed & Insulated / Standard Wall: | *70% - Resi/hotel 60% - office* | Wall Value | *R-18 (R)* |
| Area of Vision Window: | *30% - Resi/hotel 40% - office* | Window Glazing Assembly Value: | *U- 0.38(U)* |
| | | Window Glazing SHGC: | *0.35(SHGC)* |
| Area of Doors: | *TBD %* | Door Assembly Value: | *0.5 (U)* |

**Energy Loads and Performance**

| | | | |
|---|---|---|---|
| For this filing – describe how energy loads & performance were determined | *Energy modeling using eQuest v3.65. Baseline model was derived from ASHRAE90.1-2013 App. G with MA amendments.* | | |
| Annual Electric: | *18,500,000 total site (kWh)* | Annual Electric: | *18,500,000 total site (kWh)* |
| Annual Heating: | *450,000 therms* | Annual Heating: | *450,000 therms* |
| Annual Cooling: | *TBD (Tons/hr)* | Annual Cooling: | *TBD (Tons/hr)* |
| Energy Use - Below ASHRAE 90.1 - 2013: | *15 %* | Energy Use - Below ASHRAE 90.1 - 2013: | *15 %* |
| Energy Use - Below Mass. Code: | *15 %* | Energy Use - Below Mass. Code: | *15 %* |

**Back-up / Emergency Power System**

| | | | |
|---|---|---|---|
| Electrical Generation Output: | *75 – 750 (kW)* | Number of Power Units: | 1 |
| System Type: | *Combustion Engine* | Fuel Source: | Diesel |

**Emergency and Critical System Loads** (in the event of a service interruption)

| | | | |
|---|---|---|---|
| Electric: | *50 – 605 (kW)* | Heating: | *TBD* |
| | | Cooling: | *TBD* |

## B – Greenhouse Gas Reduction and Net Zero / Net Positive Carbon Building Performance

Reducing GHG emissions is critical to avoiding more extreme climate change conditions. To achieve the City's goal of carbon neutrality by 2050 new buildings performance will need to progressively improve to net carbon zero and positive.

### B.1 – GHG Emissions - Design Conditions

For this Filing - Annual Building GHG Emissions: *8199.8 Tons*

For this filing - describe how building energy performance has been integrated into project planning, design, and engineering and any supporting analysis or modeling:

Energy modeling will be utilized throughout the process of the design. The design options will be analyzed for energy savings and energy cost savings at 100% SD, 100% DD, and 100% CD.

Describe building specific passive energy efficiency measures including orientation, massing, envelop, and systems:

It is expected that premium motors will be used in the mechanical, electrical, and plumbing systems and other mechanical equipment such as elevators (where applicable).
Energy Recovery has been included to incorporate energy and waste-heat savings.
Occupancy sensors will be applied throughout the building
Daylighting controls are expected to be used where feasible
High performance fixtures such as LED (light emitting diodes) will be installed throughout the project
Lighting controls will enable controllability and energy savings throughout
Energy Star appliance will be specified where applicable
HVAC equipment will be design to maximize efficiency and exceed code standard

Describe building specific active energy efficiency measures including equipment, controls, fixtures, and systems:

The water-source heat pumps with electronically commutated motors enable the greatest savings for the building. The building's energy efficient fans, lighting, hot water, and space cooling contribute most significantly to the total building energy savings.

Describe building specific load reduction strategies including on-site renewable, clean, and energy storage systems:

Currently, these systems are being reviewed for inclusion into the design. Further analysis will be performed as the project and budget progress.

Describe any area or district scale emission reduction strategies including renewable energy, central energy plants, distributed energy systems, and smart grid infrastructure:

The team did not utilize a plant outside of the building beyond electricity from the available grid. Should the grid become a smart grid, the building will be enabled to adapt to that technology.

Describe any energy efficiency assistance or support provided or to be provided to the project:

The team will be meeting with Eversource and National Grid to determine and finalize the options for rebates and incentives for technologies and controls in the building.

## B.2 - GHG Reduction - Adaptation Strategies

Describe how the building and its systems will evolve to further reduce GHG emissions and achieve annual carbon net zero and net positive performance (e.g. added efficiency measures, renewable energy, energy storage, etc.) and the timeline for meeting that goal (by 2050):

The current systems are reliant on an efficient form of electricity from the grid, which is has reduced its emissions by more than 15% over the past 5 years. This trend is likely to continue with regulations, and in addition, the outside roof areas are structurally sound for the implementation of solar in the future.

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## C - Extreme Heat Events

Annual average temperature in Boston increased by about 2˚F in the past hundred years and will continue to rise due to climate change. By the end of the century, the average annual temperature could be 56° (compared to 46° now) and the number of days above 90° (currently about 10 a year) could rise to 90.

### C.1 – Extreme Heat - Design Conditions

| | | | |
|---|---|---|---|
| Temperature Range - Low: | *7 Deg.* | Temperature Range - High: | *91 Deg.* |
| Annual Heating Degree Days: | 5512 | Annual Cooling Degree Days | 776 |

What Extreme Heat Event characteristics will be / have been used for project planning

| | | | |
|---|---|---|---|
| Days - Above 90°: | *9* | Days – Above 100°: | *0* |
| Number of Heatwaves / Year: | *10* | Average Duration of Heatwave (Days): | *3* |

Describe all building and site measures to reduce heat-island effect at the site and in the surrounding area:

Highly-reflective roof and paving materials, large proportion of green space, green roofs, etc.

### C.2 - Extreme Heat – Adaptation Strategies

Describe how the building and its systems will be adapted to efficiently manage future higher average temperatures, higher extreme temperatures, additional annual heatwaves, and longer heatwaves:

The building will include high performance heating, cooling, and ventilation, lighting controls, building system controls, healthy/resilient materials, and energy recovery.

Describe all mechanical and non-mechanical strategies that will support building functionality and use during extended interruptions of utility services and infrastructure including proposed and future adaptations:

The building will be provided with emergency generator sized for life safety systems.

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## D - Extreme Precipitation Events

From 1958 to 2010, there was a 70 percent increase in the amount of precipitation that fell on the days with the heaviest precipitation. Currently, the 10-Year, 24-Hour Design Storm precipitation level is 5.25”. There is a significant probability that this will increase to at least 6” by the end of the century. Additionally, fewer, larger storms are likely to be accompanied by more frequent droughts.

## D.1 – Extreme Precipitation - Design Conditions

| | |
|---|---|
| 10 Year, 24 Hour Design Storm: | *8.83 In.* |

Describe all building and site measures for reducing storm water run-off:

The proposed stormwater system is anticipated to be design to collect and infiltrate the first 1.25 inches of runoff to meet BWSC requirements.

## D.2 - Extreme Precipitation - Adaptation Strategies

Describe how site and building systems will be adapted to efficiently accommodate future more significant rain events (e.g. rainwater harvesting, on-site storm water retention, bio swales, green roofs):

The Proponent will coordinate closely with BWSC as the design of the stormwater system advances.

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## E – Sea Level Rise and Storms

Under any plausible greenhouse gas emissions scenario, sea levels in Boston will continue to rise throughout the century. This will increase the number of buildings in Boston susceptible to coastal flooding and the likely frequency of flooding for those already in the floodplain.

| | | | |
|---|---|---|---|
| Is any portion of the site in a FEMA SFHA? | ***Yes*** */ No* | What Zone: | A, **AE,** AH, AO, AR, A99, V, VE |
| | | Current FEMA SFHA Zone Base Flood Elevation: | ***18.5-19.5*** *Ft BCB* |

| | |
|---|---|
| Is any portion of the site in a BPDA Sea Level Rise - Flood Hazard Area? Use the online BPDA SLR-FHA Mapping Tool to assess the susceptibility of the project site. | ***Yes*** */ No* |

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***If you answered YES to either of the above questions, please complete the following questions.***
***Otherwise you have completed the questionnaire; thank you!***

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## E.1 – Sea Level Rise and Storms – Design Conditions

Proposed projects should identify immediate and future adaptation strategies for managing the flooding scenario represented on the BPDA Sea Level Rise - Flood Hazard Area (SLR-FHA) map, which depicts a modeled 1% annual chance coastal flood event with 40 inches of sea level rise (SLR). Use the online BPDA SLR-FHA Mapping Tool to identify the highest Sea Level Rise - Base Flood Elevation for the site. The Sea Level Rise - Design Flood Elevation is determined by adding either 24" of freeboard for critical facilities and infrastructure and any ground floor residential units OR 12" of freeboard for other buildings and uses.

| | | | |
|---|---|---|---|
| Sea Level Rise - Base Flood Elevation: | ***19.4*** *Ft BCB* | | |
| Sea Level Rise - Design Flood Elevation: | ***20.4*** *Ft BCB* | First Floor Elevation: | ***21.5*** *Ft BCB* |
| Site Elevations at Building: | ***Varies*** *Ft BCB* | Accessible Route Elevation: | ***Varies*** *Ft BCB* |

Describe site design strategies for adapting to sea level rise including building access during flood events, elevated site areas, hard and soft barriers, wave / velocity breaks, storm water systems, utility services, etc.:

The site is elevated via stepped landscaping from the sea wall up to 21.5 ft BCB.

Describe how the proposed Building Design Flood Elevation will be achieved including dry / wet flood proofing, critical systems protection, utility service protection, temporary flood barriers, waste and drain water back flow prevention, etc.:

The DFE will be achieved via site grading.

Describe how occupants might shelter in place during a flooding event including any emergency power, water, and waste water provisions and the expected availability of any such measures:

TBD

Describe any strategies that would support rapid recovery after a weather event:

Waterfront landscaping will be designed to assist in stormwater collection from the upland areas. Where possible, stormwater from Project Site will be directed to this area to slow its entry into storm systems and limit storm-related flooding. Permeable paving along streets in planting zones and where possible at plazas and along Turbine Alley will be included to decrease runoff.

### E.2 – Sea Level Rise and Storms – Adaptation Strategies

Describe future site design and or infrastructure adaptation strategies for responding to sea level rise including future elevating of site areas and access routes, barriers, wave / velocity breaks, storm water systems, utility services, etc.:

The Project is targeting a minimum FFE of 21.5 BCB for all uses, which is above the highest recommended SLR-DFE of 21.4 BCB and over two feet above the SLR-BFE of 19.4 BCB. This strategy is anticipated to protect the Site from flooding due to the 1% annual chance flood through 2070.

Describe future building adaptation strategies for raising the Sea Level Rise Design Flood Elevation and further protecting critical systems, including permanent and temporary measures:

Should flooding at the Site become problematic earlier than projected, steps will be taken to elevate critical systems.

A pdf and word version of the Climate Resiliency Checklist is provided for informational use and off-line preparation of a project submission. NOTE: Project filings should be prepared and submitted using the online Climate Resiliency Checklist.

For questions or comments about this checklist or Climate Change best practices, please contact: John.Dalzell@boston.gov

# Article 80 – Accessibility Checklist

## A requirement of the Boston Planning & Development Agency (BPDA)
## Article 80 Development Review Process

The Mayor's Commission for Persons with Disabilities strives to reduce architectural, procedural, attitudinal, and communication barriers that affect persons with disabilities in the City of Boston. In 2009, a Disability Advisory Board was appointed by the Mayor to work alongside the Commission in creating universal access throughout the city's built environment. The Disability Advisory Board is made up of 13 volunteer Boston residents with disabilities who have been tasked with representing the accessibility needs of their neighborhoods and increasing inclusion of people with disabilities.

In conformance with this directive, the BDPA has instituted this Accessibility Checklist as a tool to encourage developers to begin thinking about access and inclusion at the beginning of development projects, and strive to go beyond meeting only minimum MAAB / ADAAG compliance requirements. Instead, our goal is for developers to create ideal design for accessibility which will ensure that the built environment provides equitable experiences for all people, regardless of their abilities. As such, any project subject to Boston Zoning Article 80 Small or Large Project Review, including Institutional Master Plan modifications and updates, must complete this Accessibility Checklist thoroughly to provide specific detail about accessibility and inclusion, including descriptions, diagrams, and data.

For more information on compliance requirements, advancing best practices, and learning about progressive approaches to expand accessibility throughout Boston's built environment. Proponents are highly encouraged to meet with Commission staff, prior to filing.

### Accessibility Analysis Information Sources:

1. Americans with Disabilities Act – 2010 ADA Standards for Accessible Design
   http://www.ada.gov/2010ADAstandards_index.htm
2. Massachusetts Architectural Access Board 521 CMR
   http://www.mass.gov/eopss/consumer-prot-and-bus-lic/license-type/aab/aab-rules-and-regulations-pdf.html
3. Massachusetts State Building Code 780 CMR
   http://www.mass.gov/eopss/consumer-prot-and-bus-lic/license-type/csl/building-codebbrs.html
4. Massachusetts Office of Disability – Disabled Parking Regulations
   http://www.mass.gov/anf/docs/mod/hp-parking-regulations-summary-mod.pdf
5. MBTA Fixed Route Accessible Transit Stations
   http://www.mbta.com/riding_the_t/accessible_services/
6. City of Boston – Complete Street Guidelines
   http://bostoncompletestreets.org/
7. City of Boston – Mayor's Commission for Persons with Disabilities Advisory Board
   www.boston.gov/disability
8. City of Boston – Public Works Sidewalk Reconstruction Policy
   http://www.cityofboston.gov/images_documents/sidewalk%20policy%200114_tcm3-41668.pdf
9. City of Boston – Public Improvement Commission Sidewalk Café Policy
   http://www.cityofboston.gov/images_documents/Sidewalk_cafes_tcm3-1845.pdf

### Glossary of Terms:

1. ***Accessible Route*** – A continuous and unobstructed path of travel that meets or exceeds the dimensional and inclusionary requirements set forth by MAAB 521 CMR: Section 20
2. ***Accessible Group 2 Units*** – Residential units with additional floor space that meet or exceed the dimensional and inclusionary requirements set forth by MAAB 521 CMR: Section 9.4
3. ***Accessible Guestrooms*** – Guestrooms with additional floor space, that meet or exceed the dimensional and inclusionary requirements set forth by MAAB 521 CMR: Section 8.4
4. ***Inclusionary Development Policy (IDP)*** – Program run by the BPDA that preserves access to affordable housing opportunities, in the City. For more information visit: http://www.bostonplans.org/housing/overview
5. ***Public Improvement Commission (PIC)*** – The regulatory body in charge of managing the public right of way. For more information visit: https://www.boston.gov/pic
6. ***Visitability*** – A place's ability to be accessed and visited by persons with disabilities that cause functional limitations; where architectural barriers do not inhibit access to entrances/doors and bathrooms.

**Article 80 | ACCESSIBILTY CHECKLIST**

## 1. Project Information:

*If this is a multi-phased or multi-building project, fill out a separate Checklist for each phase/building.*

| | |
|---|---|
| Project Name: | **L Street Station Redevelopment** |
| Primary Project Address: | **776 Summer Street, Boston, MA 02127** |
| Total Number of Phases/Buildings: | **3 Phases / 12 Buildings** |
| Primary Contact (Name / Title / Company / Email / Phone): | **Ralph Cox / Principle / Redgate ralph.cox@redgate-re.com / (617) 904-7000** |
| Owner / Developer: | **HRP 776 Summer Street, LLC** |
| Architect: | **Stantec** |
| Civil Engineer: | **VHB** |
| Landscape Architect: | **Stoss** |
| Permitting: | **VHB** |
| Construction Management: | **TBD** |

At what stage is the project at time of this questionnaire? Select below:

| | | | |
|---|---|---|---|
| | PNF / Expanded PNF Submitted | **Draft / Final Project Impact Report Submitted** | BPDA Board Approved |
| | BPDA Design Approved | Under Construction | Construction Completed: |

| | |
|---|---|
| Do you anticipate filing for any variances with the Massachusetts Architectural Access Board (MAAB)? ***If yes,*** identify and explain. | *TBD* |

## 2. Building Classification and Description:

*This section identifies preliminary construction information about the project including size and uses.*

What are the dimensions of the project?

| | | | |
|---|---|---|---|
| Site Area: | **15 acres** | Building Area: | ***1.93 MSF*** |
| Building Height: | ***210 FT.*** | Number of Stories: | **Varies** |
| First Floor Elevation: | **21.5** | Is there below grade space: | ***Yes** / No* |

What is the Construction Type? (Select most appropriate type)

| | | | | |
|---|---|---|---|---|
| | **Wood Frame** | **Masonry** | **Steel Frame** | **Concrete** |

What are the principal building uses? (IBC definitions are below – select all appropriate that apply)

| | | | | |
|---|---|---|---|---|
| | Residential – One - Three Unit | **Residential - Multi-unit, Four +** | Institutional | Educational |
| | **Business** | **Mercantile** | Factory | Hospitality |
| | Laboratory / Medical | **Storage, Utility and Other** | | |
| List street-level uses of the building: | *Civil/Cultural, Retail, Residential, Office, Hotel, Parking,* | | | |

3. Assessment of Existing Infrastructure for Accessibility:

*This section explores the proximity to accessible transit lines and institutions, such as (but not limited to) hospitals, elderly & disabled housing, and general neighborhood resources. Identify how the area surrounding the development is accessible for people with mobility impairments and analyze the existing condition of the accessible routes through sidewalk and pedestrian ramp reports.*

| | |
|---|---|
| Provide a description of the neighborhood where this development is located and its identifying topographical characteristics: | **The Project is located at the gateway to the South Boston neighborhood between the marine industrial uses of the South Boston Designated Port Area and Raymond L. Flynn Marine Industrial Park to the north and east, and residential areas to the south. The Project is bounded by East 1st Street to the south and Summer Street to the west. The Project Site features considerable grade changes throughout the site, ranging from 14.5 to 36.5 feet BCB.** |
| List the surrounding accessible MBTA transit lines and their proximity to development site: commuter rail / subway stations, bus stops: | **The Project is located 0.5 miles from the Silver Line at Design Center Place, and 1.5 miles to South Station, which provides access to the Red Line, Silver Line, commuter and passenger rails, Amtrak, and local and regional bus service. The Project Site is also located along the following local bus routes:**<br>**-Bus #7: Adjacent to Project Site – Summer St @ E 1st St; East 1st @ M St; Summer St @ Powerhouse St**<br>**-Bus #9: Adjacent to Project Site – East 1st @ M St**<br>**-Bus #5, 10, 11: 0.2 miles from Project Site – East 1st St opposite O St.** |
| List the surrounding institutions: hospitals, public housing, elderly and disabled housing developments, educational facilities, others: | **The Project is located in proximity to the following institutions:**<br>**-Edward W. Brooke Charter School**<br>**-South Boston Catholic Academy**<br>**-Joseph P. Tynan School**<br>**-South Boston Elderly Apartments**<br>**-Boston Housing Authority** |
| List the surrounding government buildings: libraries, community centers, recreational facilities, and other related facilities: | **The following public use facilities are within proximity of the Project Site:**<br>**-Boston Public Library – South Boston Branch**<br>**-Tynan Community Center**<br>**-Christopher Lee Playground**<br>**-Medal of Honor Park** |

| | |
|---|---|
| **4. Surrounding Site Conditions – Existing:**<br>*This section identifies current condition of the sidewalks and pedestrian ramps at the development site.* | |
| Is the development site within a historic district? ***If yes,*** identify which district: | **No** |
| Are there sidewalks and pedestrian ramps existing at the development site? ***If yes***, list the existing sidewalk and pedestrian ramp dimensions, slopes, materials, and physical condition at the development site: | **Sidewalks are currently along Summer St and E 1st St, not within the Project Site. The existing sidewalks include concrete pavers along Summer Street and asphalt along East 1st Street.** |
| Are the sidewalks and pedestrian ramps existing-to-remain? ***If yes,*** have they been verified as ADA / MAAB compliant (with yellow composite detectable warning surfaces, cast in concrete)? ***If yes,*** provide description and photos: | **No. All existing sidewalks and pedestrian ways are to be removed and replaced. Portions of the existing sidewalks are extremely narrow and do not meet ADA requirements. Any non-compliant conditions will be improved and brought into compliance** |
| **5. Surrounding Site Conditions – Proposed**<br>*This section identifies the proposed condition of the walkways and pedestrian ramps around the development site. Sidewalk width contributes to the degree of comfort walking along a street. Narrow sidewalks do not support lively pedestrian activity, and may create dangerous conditions that force people to walk in the street. Wider sidewalks allow people to walk side by side and pass each other comfortably walking alone, walking in pairs, or using a wheelchair.* | |
| Are the proposed sidewalks consistent with the Boston Complete Street Guidelines? ***If yes***, choose which Street Type was applied: Downtown Commercial, Downtown Mixed-use, Neighborhood Main, Connector, Residential, Industrial, Shared Street, Parkway, or Boulevard. | **Yes. Proposed sidewalks along Summer Street and East 1st Street will be consistent with Boston Complete Streets Guidelines. Street Type: varies.** |
| What are the total dimensions and slopes of the proposed sidewalks? List the widths of the proposed zones: Frontage, Pedestrian and Furnishing Zone: | **Varies** |
| List the proposed materials for each Zone. Will the proposed materials be on private property or will the proposed materials be on the City of Boston pedestrian right-of-way? | **Material selection is to be determined.** |
| Will sidewalk cafes or other furnishings be programmed for the pedestrian right-of-way? ***If yes,*** what are the proposed dimensions of the sidewalk café or furnishings and what will the remaining right-of-way clearance be? | **Undetermined at this time.** |
| If the pedestrian right-of-way is on private property, will the proponent seek a pedestrian easement with the Public Improvement Commission (PIC)? | **Undetermined at this time.** |
| Will any portion of the Project be going through the PIC? ***If yes,*** identify PIC actions and provide details. | **Undetermined at this time.** |

| | |
|---|---|
| **6. Accessible Parking:**<br>*See Massachusetts Architectural Access Board Rules and Regulations 521 CMR Section 23.00 regarding accessible parking requirement counts and the Massachusetts Office of Disability – Disabled Parking Regulations.* | |
| What is the total number of parking spaces provided at the development site? Will these be in a parking lot or garage? | **1,397 parking spaces including approximately 34 surface spaces located on interior streets. The remainder are in structured parking.** |
| What is the total number of accessible spaces provided at the development site? How many of these are "Van Accessible" spaces with an 8 foot access aisle? | **The Project will comply with City requirements.** |
| Will any on-street accessible parking spaces be required? ***If yes,*** has the proponent contacted the Commission for Persons with Disabilities regarding this need? | **Accessible parking spaces will be provided. The Proponents have not yet contacted the CPD regarding this need, but will do so when details of on street parking are prepared.** |
| Where is the accessible visitor parking located? | **Accessible visitor parking locations have not yet been determined.** |
| Has a drop-off area been identified? ***If yes,*** will it be accessible? | **Undetermined at this time.** |
| **7. Circulation and Accessible Routes:**<br>*The primary objective in designing smooth and continuous paths of travel is to create universal access to entryways and common spaces, which accommodates persons of all abilities and allows for visitability with neighbors.* | |
| Describe accessibility at each entryway: Example: Flush Condition, Stairs, Ramp, Lift or Elevator: | **Entries will have a combination of flush conditions, stairs, and accessible ramps.** |
| Are the accessible entrances and standard entrance integrated? ***If yes,*** *describe.* ***If no,*** what is the reason? | **Undetermined at this time.** |
| ***If project is subject to Large Project Review/Institutional Master Plan,*** describe the accessible routes way-finding / signage package. | **Such signage will be developed further into the design process.** |
| **8. Accessible Units (Group 2) and Guestrooms: (If applicable)**<br>*In order to facilitate access to housing and hospitality, this section addresses the number of accessible units that are proposed for the development site that remove barriers to housing and hotel rooms.* | |
| What is the total number of proposed housing units or hotel rooms for the development? | **1,344 residential units & 344 hotel keys** |

| | |
|---|---|
| ***If a residential development,*** how many units are for sale? How many are for rent? What is the breakdown of market value units vs. IDP (Inclusionary Development Policy) units? | 777 Rental / 567 Condominium. IDP units to be determined. |
| ***If a residential development,*** how many accessible Group 2 units are being proposed? | The number of accessible units at the Project will be determined as the Project advances into individual building design and will comply with 521 CMR |
| ***If a residential development,*** how many accessible Group 2 units will also be IDP units? ***If none***, describe reason. | TBD |
| ***If a hospitality development,*** how many accessible units will feature a wheel-in shower? Will accessible equipment be provided as well? ***If yes,*** provide amount and location of equipment. | TBD |
| Do standard units have architectural barriers that would prevent entry or use of common space for persons with mobility impairments? Example: stairs / thresholds at entry, step to balcony, others. ***If yes*****,** provide reason. | TBD |
| Are there interior elevators, ramps or lifts located in the development for access around architectural barriers and/or to separate floors? ***If yes*****,** describe: | TBD |
| 9. Community Impact:<br>*Accessibility and inclusion extend past required compliance with building codes. Providing an overall scheme that allows full and equal participation of persons with disabilities makes the development an asset to the surrounding community*. | |
| Is this project providing any funding or improvements to the surrounding neighborhood? Examples: adding extra street trees, building or refurbishing a local park, or supporting other community-based initiatives? | Sidewalk improvements will be part of the Project including new street trees and widened sidewalks. The Proponent will continue to work with the IAG to identify final mitigation commitments for the Project. |
| What inclusion elements does this development provide for persons with disabilities in common social and open spaces? Example: Indoor seating and TVs in common rooms; outdoor seating and barbeque grills in yard. Will all of these spaces and features provide accessibility? | Amenity spaces will be accessible (521 CMR compliant) including preparatory kitchen (if included in the Project) with accessible appliances and seating areas. |
| Are any restrooms planned in common public spaces? ***If yes,*** will any be single-stall, ADA compliant and designated as “Family”/ “Companion” restrooms? ***If no***, explain why not. | Yes |

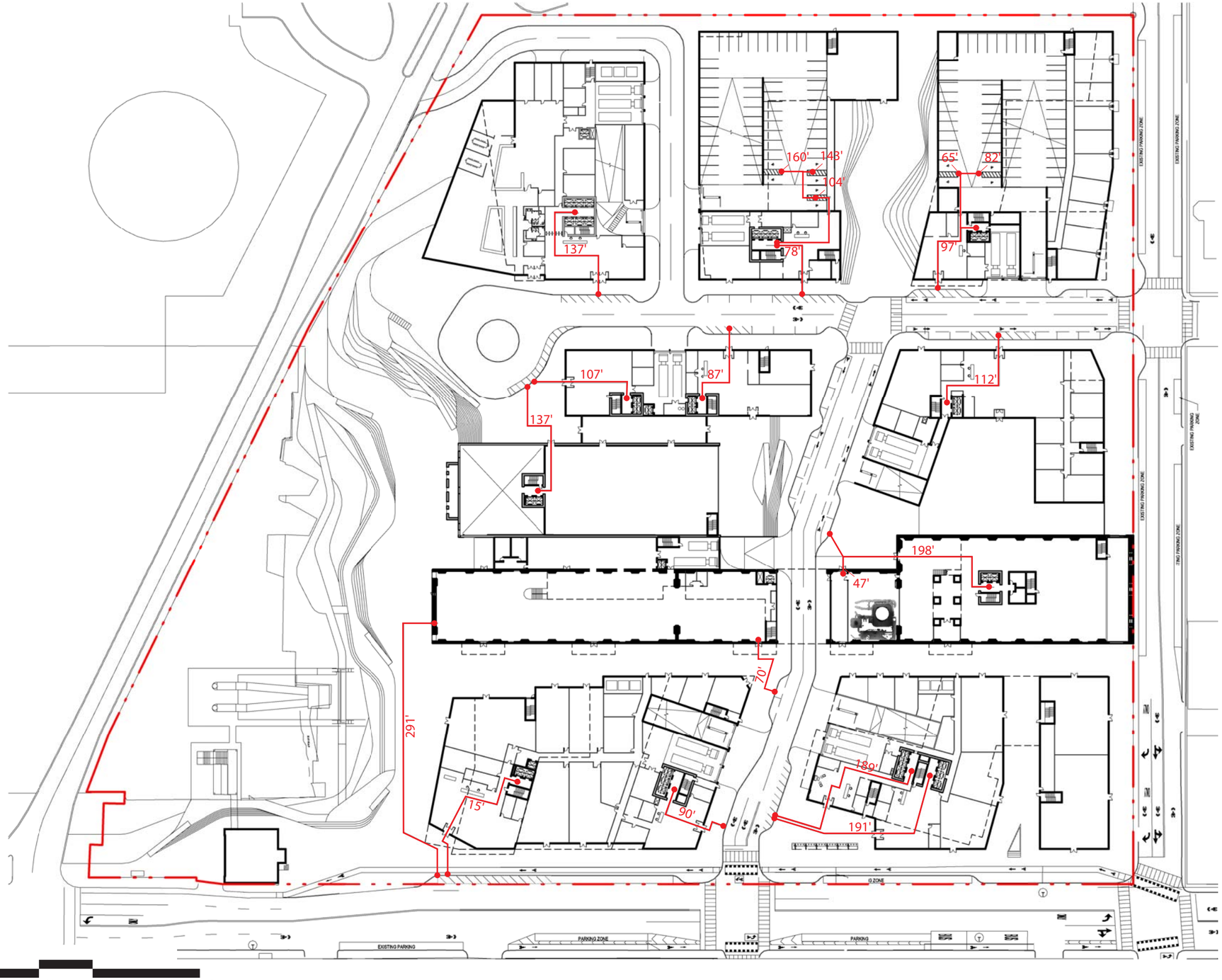
| | |
|---|---|
| Has the proponent reviewed the proposed plan with the City of Boston Disability Commissioner or with their Architectural Access staff? ***If yes,*** did they approve? ***If no,*** what were their comments? | **The Project has not yet been presented to the City of Boston Mayors Commission for Persons with Disabilities Advisory Board. The Project Team will meet with the Board as the design of individual buildings advances and is fully committed to delivering a Project that is ADA compliant.** |
| Has the proponent presented the proposed plan to the Disability Advisory Board at one of their monthly meetings? Did the Advisory Board vote to support this project? ***If no,*** what recommendations did the Advisory Board give to make this project more accessible? | **The Project has not yet been reviewed by the Advisory Board.** |
| *10.* Attachments<br>*Include a list of all documents you are submitting with this Checklist. This may include drawings, diagrams, photos, or any other material that describes the accessible and inclusive elements of this project.* | |
| Provide a diagram of the accessible routes to and from the accessible parking lot/garage and drop-off areas to the development entry locations, including route distances.<br>**Refer to Exhibit B.1 – B.3** | |
| Provide a diagram of the accessible route connections through the site, including distances.<br>**Refer to Exhibit B.1 – B.3** | |
| Provide a diagram the accessible route to any roof decks or outdoor courtyard space? (if applicable)<br>**Refer to Exhibit B.1 – B.3** | |
| Provide a plan and diagram of the accessible Group 2 units, including locations and route from accessible entry.<br>**Refer to Exhibit B.1 – B.3** | |
| Provide any additional drawings, diagrams, photos, or any other material that describes the inclusive and accessible elements of this project.<br>**Refer to Exhibit B.1 – B.3** | |

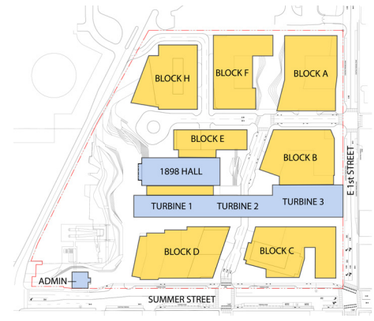
This completes the Article 80 Accessibility Checklist required for your project. Prior to and during the review process, Commission staff are able to provide technical assistance and design review, in order to help achieve ideal accessibility and to ensure that all buildings, sidewalks, parks, and open spaces are usable and welcoming to Boston's diverse residents and visitors, including those with physical, sensory, and other disabilities.

For questions or comments about this checklist, or for more information on best practices for improving accessibility and inclusion, visit www.boston.gov/disability, or our office:

The Mayor's Commission for Persons with Disabilities
1 City Hall Square, Room 967,
Boston MA 02201.

Architectural Access staff can be reached at:
accessibility@boston.gov | patricia.mendez@boston.gov | sarah.leung@boston.gov | 617-635-3682




TRAVEL DISTANCE

N

0 50 100 200 Feet

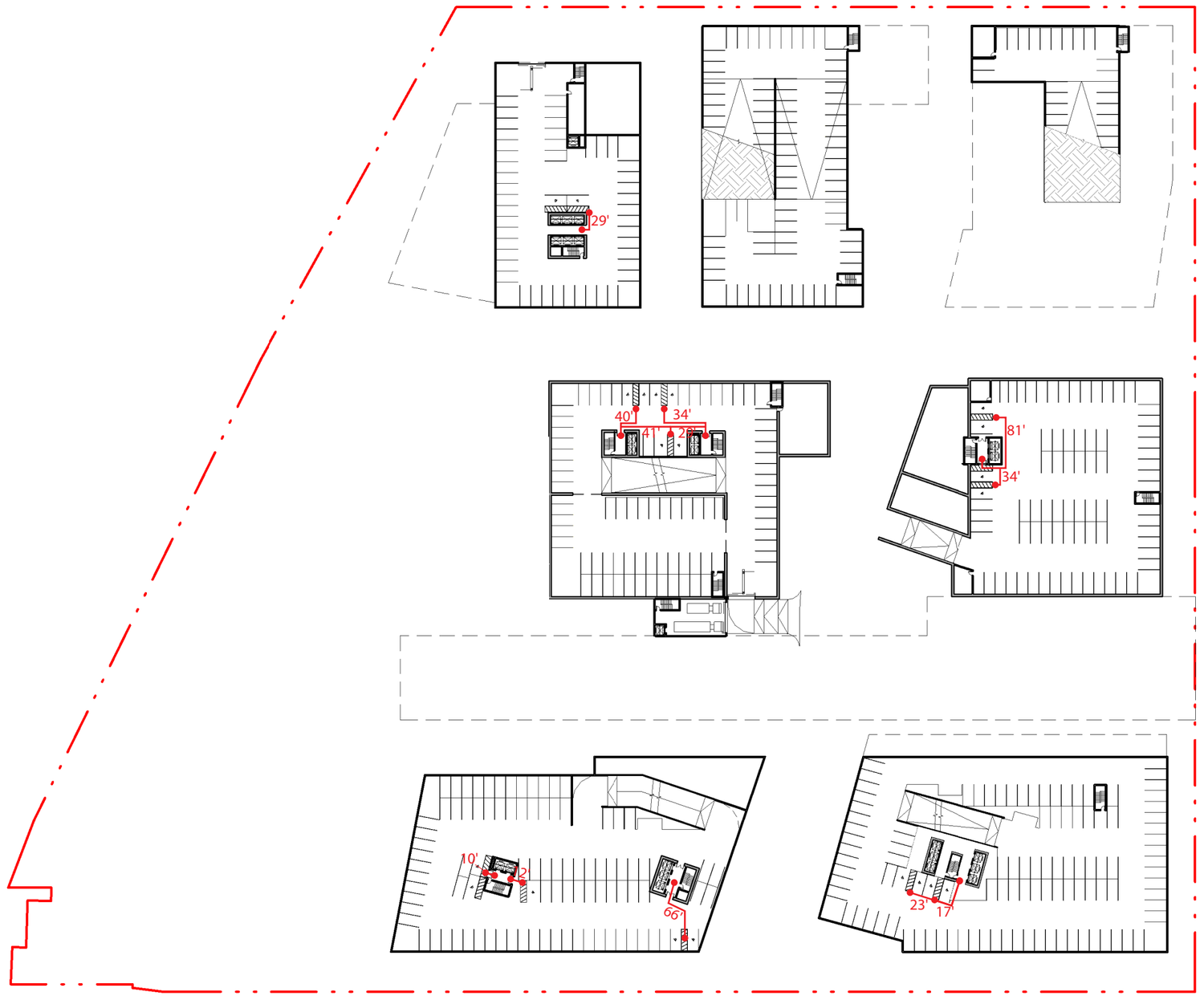
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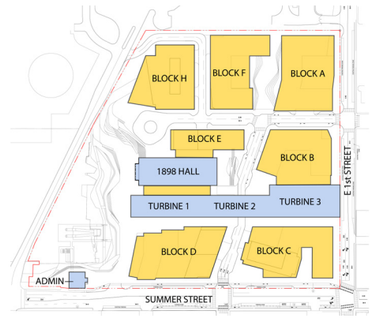
Stantec

## Exhibit B-1

## Accessibility plan Ground LVL

**L Street Station Redevelopment**
**Boston, Massachusetts**




TRAVEL DISTANCE

N

0 50 100 200 Feet

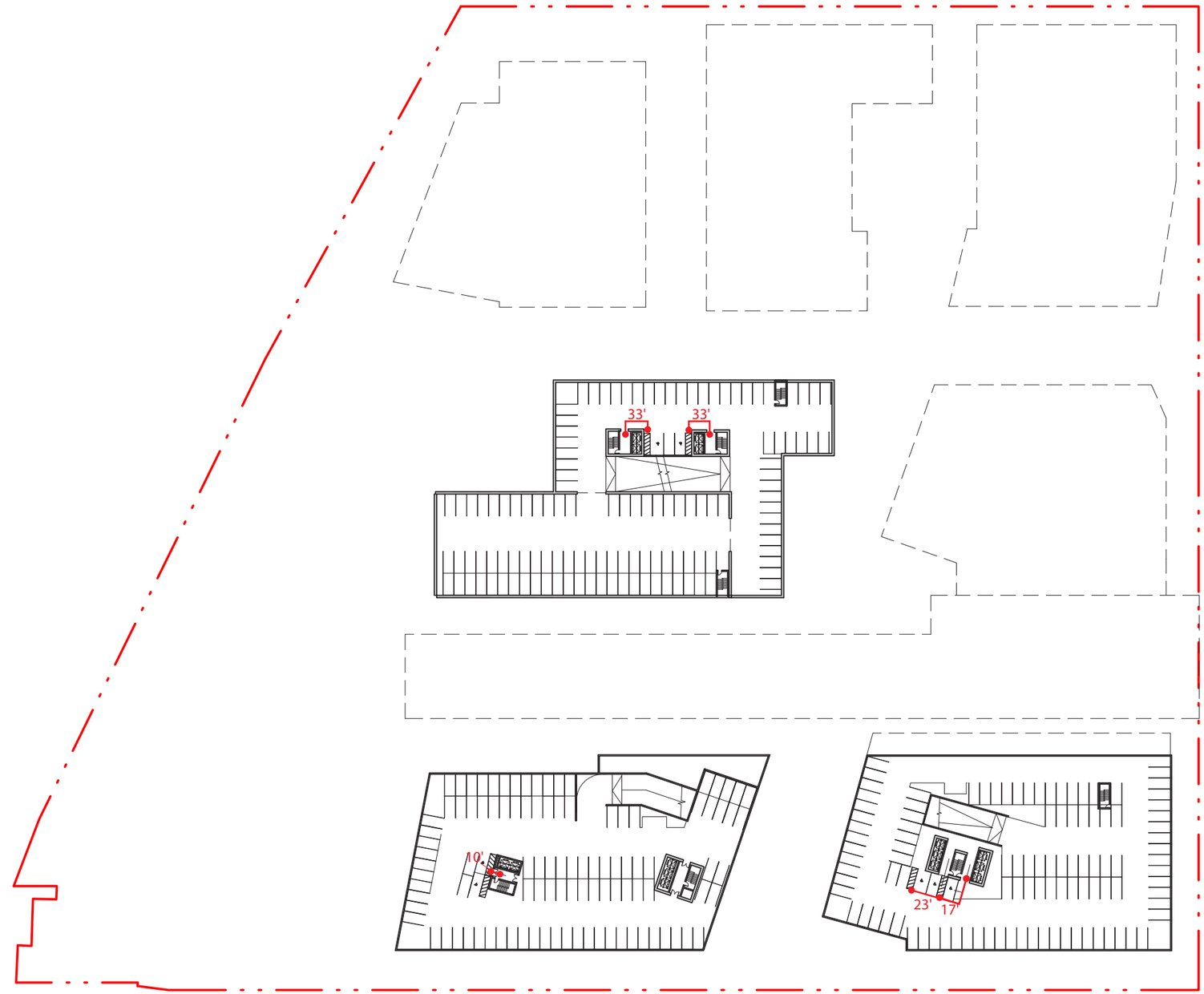
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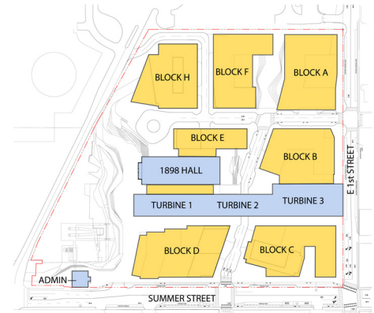
Stantec

**Exhibit B-2**

**Accessibility plan P1**

**L Street Station Redevelopment**
**Boston, Massachusetts**




TRAVEL DISTANCE

N

0 50 100 200 Feet

SCALE1"=100'

Stantec

**Exhibit B-3**

**Accessibility plan P2**

**L Street Station Redevelopment**
**Boston, Massachusetts**

# Appendix C: Site Survey

## NOTES:

1) INFORMATION AND/OR LOCATION(S) TAKEN FROM PLAN AS PREPARED BY BOSTON EDISON COMPANY ENGINEERING SERVICES GROUP DATED AUGUST 25, 1997. PLAN No. 400-AAA.
2) SEE EASEMENTS SHOWN ON PLAN ENTITLED " CONVEYANCING PLAN OF LAND BOSTON EDISON COMPANY, SUMMER STREET, BOSTON MA, SUFFOLK COUNTY, SCALE 1 INCH = 50 FT. DATE: MAY 11, 1998," PREPARED BY BEALS AND THOMAS INC., RECORDED IN PLAN BOOK 22478, PAGE 318.
3) THIS PLAN HAS BEEN PREPARED TO CREATE PARCELS B, AND C, WHICH WILL CONVEYED TO MASSPORT. PARCEL A IS THE REMAINING PARCEL OF LAND OWNED BY EXELON NEW BOSTON, LLC.

## REFERENCES:

SUMMER STREET LAYOUT, PART 2
CITY OF BOSTON, SUMMER STREET, SOUTH BOSTON, DATED: JUNE 11, 1930
STREET LAYING-OUT DEPARTMENT

CITY OF BOSTON, ENGINEERING DEPARTMENT

CITY BOOK 226, PAGE 88
CITY BOOK 503, PAGE 89
CITY BOOK 816, PAGE 12, 13
CITY BOOK 521, PAGE 74, 75
CALC. BOOK 32, PAGE 132

BOSTON WATER AND SEWER COMMISSION

WATER DIST. & WASTEWATER SYSTEM MAPS: 20-M, 21-M

SUFFOLK COUNTY REGISTRY OF DEEDS

DEED BOOK 2497, PAGE 553
DEED BOOK 2804, PAGE 637
DEED BOOK 2810, PAGE 97
DEED BOOK 2882, PAGE 55

## LEGEND

| | | | |
|---|---|---|---|
| □ | S.B.D.H. FND. | STONE BOUND/DRILL HOLE, FOUND | |
| | REC.= | RECORD | |
| | MEA.= | MEASURED | |
| O | PK/SET | PK/NAIL SET | |
| | BLDG. | BUILDING | |
| | 1-STY | 1-STORY | |
| | PE | PERMANENT EASEMENT | |
| | TE | TEMPORARY EASEMENT | |
| | PSE | PERMANENT SLOPE EASEMENT | |
| | PDE | PERMANENT DRAINAGE EASEMENT | |
| ○ | RR.SPK(S) | RAILROAD SPIKE, SET | |
| ◉ | PK(S) | PK NAIL, SET | |
| | GRAN. | GRANITE | |
| | FNDN. | FOUNDATION | |
| | POB | POINT OF BEGINNING | |
| ■ | SB/DH(S) | STONE BOUND WITH DRILL HOLE, SET | |
| | | COMBINED TEMPORARY AND PERMANENT EASEMENT | |
| | | TEMPORARY AND PERMANENT EASEMENT | |

I HEREBY CERTIFY THAT:

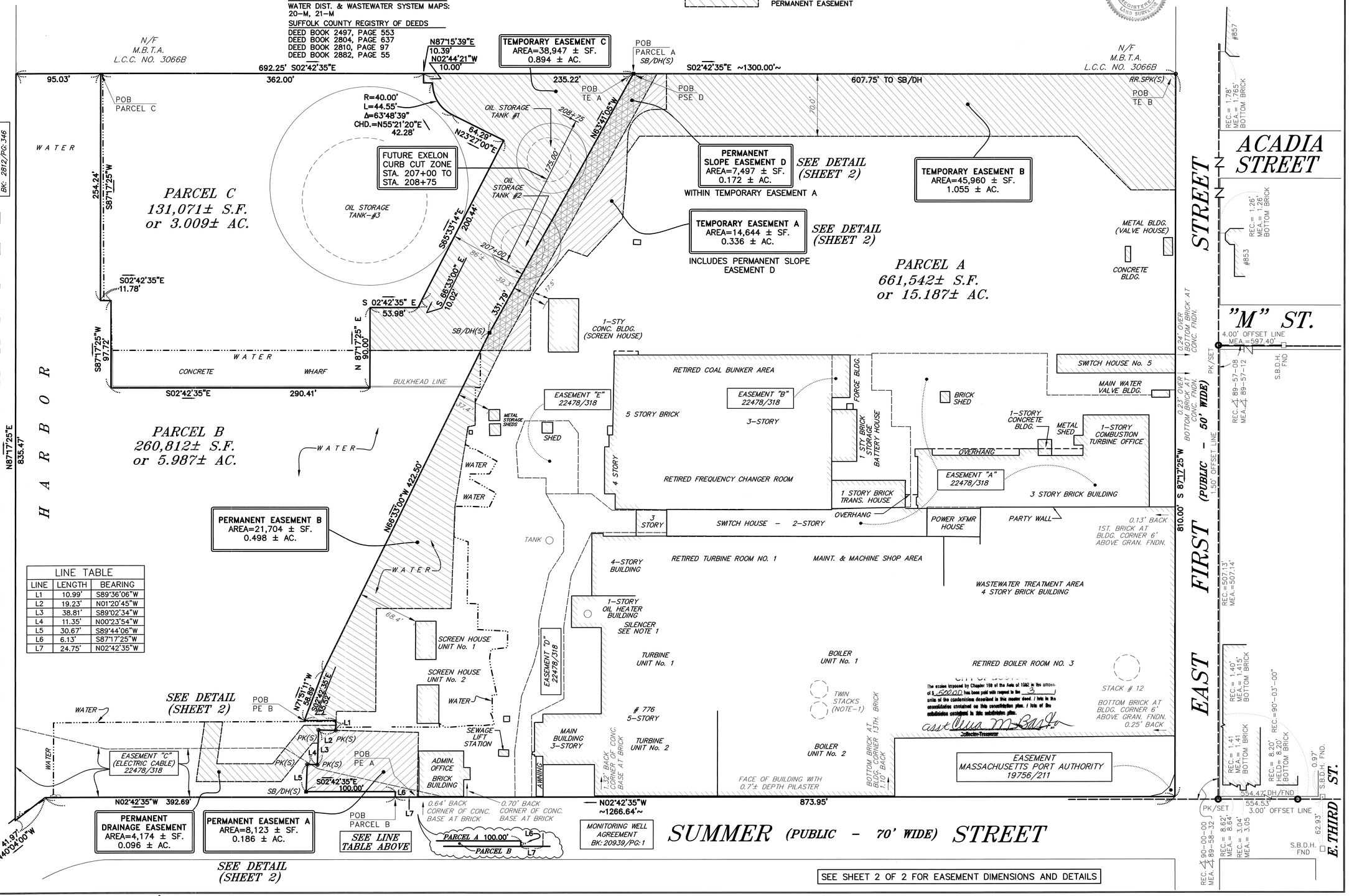
THIS PLAN HAS BEEN PREPARED IN CONFORMANCE WITH THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS OF THE COMMONWEALTH OF MASSACHUSETTS.

9/26/2014
DATE

ROBERT J. BUCKLEY, PLS NO. 30326

COMMONWEALTH OF MASSACHUSETTS — ROBERT JORDAN BUCKLEY No. 30326 REGISTERED LAND SURVEYOR

L-10129




| LINE TABLE | | |
|---|---|---|
| LINE | LENGTH | BEARING |
| L1 | 10.99' | S89°36'06"W |
| L2 | 19.23' | N01°20'45"W |
| L3 | 38.81' | S89°02'34"W |
| L4 | 11.35' | N00°23'54"W |
| L5 | 30.67' | S89°44'06"W |
| L6 | 6.13' | S87°17'25"W |
| L7 | 24.75' | N02°42'35"W |

SEE SHEET 2 OF 2 FOR EASEMENT DIMENSIONS AND DETAILS

PREPARED FOR:

**HDR ENGINEERING INC.**

695 ATLANTIC AVENUE
BOSTON, MA 02111

RECORD OWNER:

**EXELON NEW BOSTON, LLC**

776 SUMMER STREET
BOSTON, MA 02127
DEED BOOK 22478 PAGE 318

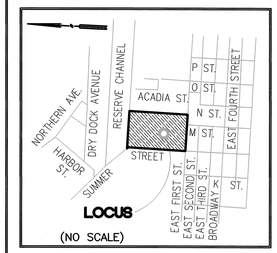
ASSESSOR'S
WARD 6, BLOCKS 237, 238, 239, 240, 260, AND 261
PARCEL 3406

2014 00000456
Bk: 2014 Pg: 456 Page: 1 of 1
Recorded: 12/19/2014 11:48 AM
ATTEST: Francis M. Roache, Register
Suffolk County Registry of Deeds

2014-456

FOR REGISTRY USE ONLY

| | | | |
|---|---|---|---|
| 5 | | | |
| 4 | | | |
| 3 | | | |
| 2 | | | |
| 1 | 09/26/2014 | GENERAL REVISIONS | |
| 0 | 03/10/2014 | FIRST ISSUE | |
| ISSUE DATE | | DESCRIPTION | |
| ATL | JRA | JRA | RJB |
| FLD | CALC | DWN | CHK'D |




## SUBDIVISION PLAN OF LAND

**#776 SUMMER STREET**
**BOSTON, MA**
(SUFFOLK COUNTY)

PREPARED BY:

**BEALS+THOMAS**
Civil Engineers + Landscape Architects + Land Surveyors + Planners + Environmental Specialists

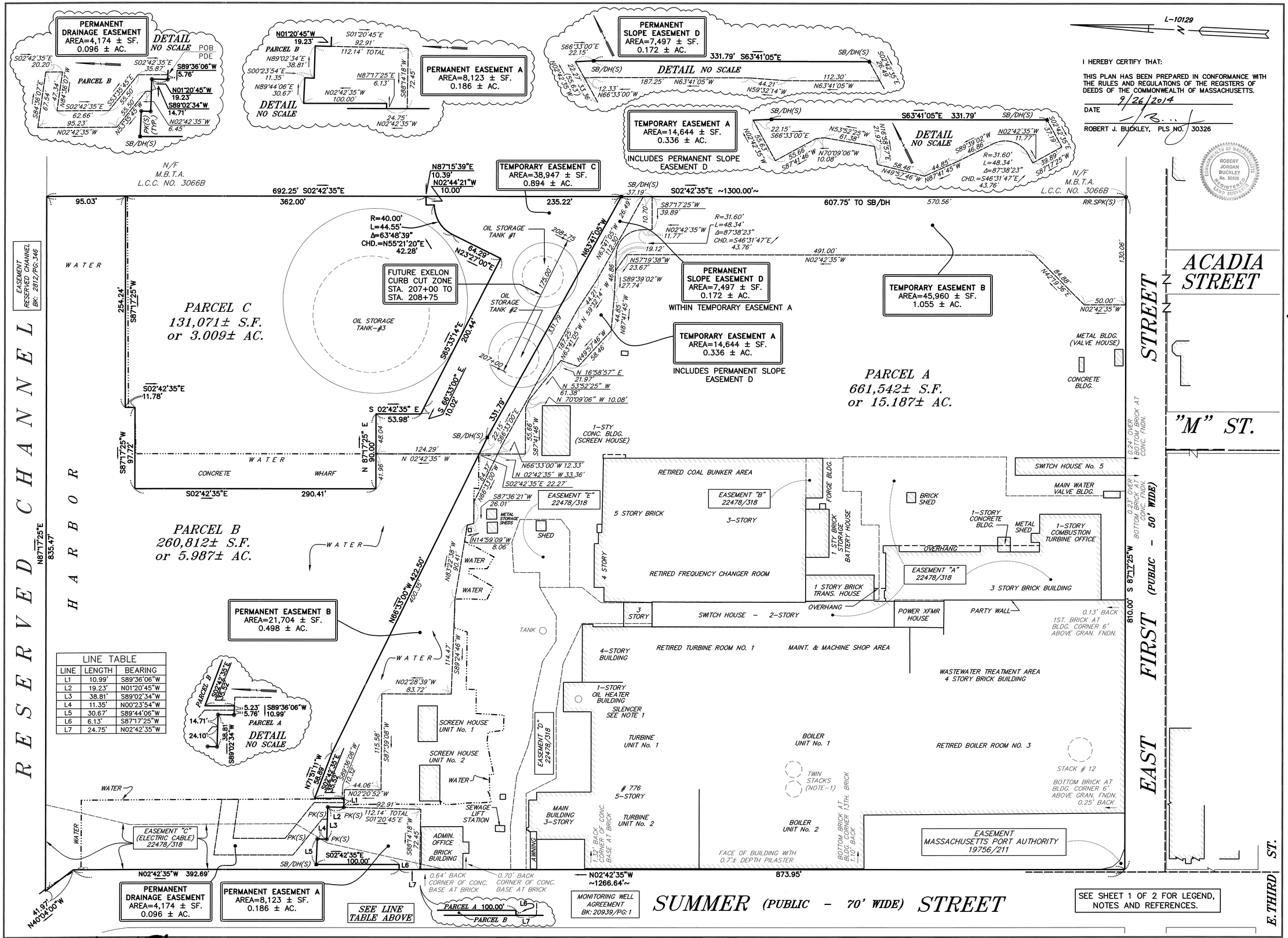
BEALS AND THOMAS, INC.
Reservoir Corporate Center
144 Turnpike Road
Southborough, Massachusetts 01772-2104
T 508.366.0560 | www.btiweb.com

DATE: MARCH 10, 2014
SCALE: 1"=50'
0 25 50 100 150 METERS
FEET

| | |
|---|---|
| BTI JOB NO. | 1447.04 |
| BTI PLAN NO. | 144704P006B-001 |
| REGISTRY SHEET 1 OF 2 | 1 |

2

2014-456




| LINE TABLE | | |
|---|---|---|
| LINE | LENGTH | BEARING |
| L1 | 10.99' | S89°36'06"W |
| L2 | 19.23' | N01°20'45"W |
| L3 | 38.81' | S89°02'34"W |
| L4 | 11.35' | N00°23'54"W |
| L5 | 30.67' | S89°44'06"W |
| L6 | 6.13' | S87°17'25"W |
| L7 | 24.75' | N02°42'35"W |

L-10129

I HEREBY CERTIFY THAT:

THIS PLAN HAS BEEN PREPARED IN CONFORMANCE WITH THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS OF THE COMMONWEALTH OF MASSACHUSETTS.

9/26/2014
DATE

ROBERT J. BUCKLEY, PLS NO. 30326

COMMONWEALTH OF MASSACHUSETTS ROBERT JORDAN BUCKLEY No. 30326 REGISTERED LAND SURVEYOR

PREPARED FOR:

**HDR ENGINEERING INC.**

695 ATLANTIC AVENUE
BOSTON, MA 02111

RECORD OWNER:

**EXELON NEW BOSTON, LLC**

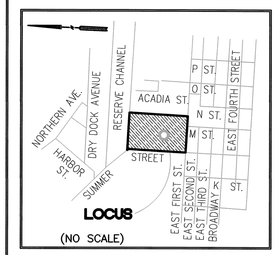
776 SUMMER STREET
BOSTON, MA 02127
DEED BOOK 22478 PAGE 318

ASSESSOR'S
WARD 6, BLOCKS 237, 238, 239, 240, 260, AND 261
PARCEL 3406

2014-456

FOR REGISTRY USE ONLY

| | | | |
|---|---|---|---|
| 5 | | | |
| 4 | | | |
| 3 | | | |
| 2 | | | |
| 1 | 09/26/2014 | GENERAL REVISIONS | |
| 0 | 03/10/2014 | FIRST ISSUE | |
| ISSUE DATE | | DESCRIPTION | |
| ATL | JRA | JRA | RJB |
| FLD | CALC | DWN | CHK'D |




# SUBDIVISION PLAN OF LAND

**#776 SUMMER STREET BOSTON, MA**
(SUFFOLK COUNTY)

PREPARED BY:

BEALS+THOMAS
Civil Engineers + Landscape Architects + Land Surveyors + Planners + Environmental Specialists

BEALS AND THOMAS, INC.
Reservoir Corporate Center
144 Turnpike Road
Southborough, Massachusetts 01772-2104
T 508.366.0560 | www.btiweb.com

DATE: MARCH 10, 2014

SCALE: 1"=50'

| | |
|---|---|
| BTI JOB NO. | 1447.04 |
| BTI PLAN NO. | 144704P006B-002 |
| REGISTRY SHEET 2 OF 2 | 2 |

2014-456

# Appendix D: Transportation Supporting Documentation

**Traffic Volume Data**

- Automatic Traffic Recorders (ATRs)
  - June 2017 Summer Street
  - June 2017 East 1st Street
- Critical Gap Analysis
  - June 2017 South Boston Gap Studies
  - Summary Table
- Field Collection – Counts and Signal Timings
  - August 2016 Power House Street and Elkins Street Counts
  - October 2017 DFC Counts
- Turning Movement Counts (TMCs)
  - June 2017 South Boston
  - June 2018 Summer Street at DFC

**Synchro Level of Service (LOS) Reports**

- 2017 Existing AM
- 2017 Existing PM
- 2024 No-Build AM
- 2024 No-Build PM
- 2024 Build AM
- 2024 Build PM
- 2030 No-Build AM
- 2030 No-Build PM

- 2030 Build AM
- 2030 Build PM
- 2024 Build Mitigated AM
- 2024 Build Mitigated PM
- 2030 Build Mitigated AM
- 2030 Build Mitigated PM

**ITE Trip Generation**

- Full Build – Trip Generation

**Parking Analysis**

- Bicycle Parking
  - Residential
  - Retail
  - Hotel
  - Office
- ULI Shared Parking Analysis

**Transit Analysis**

- Route 7 Observations
  - March 2017 Route 7 Peak Hour Observations
  - October 2017 Route 7 Peak Hour Observations
- MBTA Composite Day Peak Hour Ridership Data
  - Route 5 Inbound/Outbound Peak Hours
  - Route 7 Inbound/Outbound Peak Hours
  - Route 9 Inbound/Outbound Peak Hours
  - Route 10 Inbound/Outbound Peak Hours
  - Route 11 Inbound/Outbound Peak Hours
- MPO Long Range Transportation Plan Rates

**Crash Analysis**

- Vehicular Crash Rate Worksheets

**Signal Warrant Analysis**

- Summer Street at Elkins Street/Elkins Street Extension

Summer Street
north of Power House Street
City, State: South Boston, MA
Client: VHB/ C. Dube

PRECISION
D A T A
INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

175708 A Volume
Site Code: TBD

| Start | SB | | | | NB | | | | Combined | | | | 06/07/17 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Time | A.M. | | P.M. | | A.M. | | P.M. | | A.M. | | P.M. | | Wed |
| 12:00 | 39 | | 129 | | 23 | | 132 | | 62 | | 261 | | |
| 12:15 | 38 | | 134 | | 26 | | 118 | | 64 | | 252 | | |
| 12:30 | 31 | | 137 | | 14 | | 109 | | 45 | | 246 | | |
| 12:45 | 24 | 132 | 146 | 546 | 9 | 72 | 130 | 489 | 33 | 204 | 276 | 1035 | |
| 01:00 | 14 | | 137 | | 9 | | 141 | | 23 | | 278 | | |
| 01:15 | 10 | | 126 | | 10 | | 112 | | 20 | | 238 | | |
| 01:30 | 8 | | 163 | | 6 | | 131 | | 14 | | 294 | | |
| 01:45 | 12 | 44 | 157 | 583 | 3 | 28 | 143 | 527 | 15 | 72 | 300 | 1110 | |
| 02:00 | 4 | | 170 | | 6 | | 144 | | 10 | | 314 | | |
| 02:15 | 5 | | 204 | | 15 | | 151 | | 20 | | 355 | | |
| 02:30 | 5 | | 199 | | 5 | | 161 | | 10 | | 360 | | |
| 02:45 | 8 | 22 | 239 | 812 | 8 | 34 | 142 | 598 | 16 | 56 | 381 | 1410 | |
| 03:00 | 7 | | 200 | | 11 | | 155 | | 18 | | 355 | | |
| 03:15 | 11 | | 198 | | 5 | | 156 | | 16 | | 354 | | |
| 03:30 | 8 | | 233 | | 5 | | 124 | | 13 | | 357 | | |
| 03:45 | 9 | 35 | 211 | 842 | 6 | 27 | 119 | 554 | 15 | 62 | 330 | 1396 | |
| 04:00 | 9 | | 206 | | 21 | | 184 | | 30 | | 390 | | |
| 04:15 | 12 | | 211 | | 10 | | 205 | | 22 | | 416 | | |
| 04:30 | 20 | | 216 | | 30 | | 200 | | 50 | | 416 | | |
| 04:45 | 34 | 75 | 244 | 877 | 43 | 104 | 154 | 743 | 77 | 179 | 398 | 1620 | |
| 05:00 | 47 | | 242 | | 58 | | 174 | | 105 | | 416 | | |
| 05:15 | 53 | | 267 | | 88 | | 182 | | 141 | | 449 | | |
| 05:30 | 73 | | 254 | | 117 | | 194 | | 190 | | 448 | | |
| 05:45 | 87 | 260 | 269 | 1032 | 152 | 415 | 155 | 705 | 239 | 675 | 424 | 1737 | |
| 06:00 | 68 | | 254 | | 150 | | 179 | | 218 | | 433 | | |
| 06:15 | 79 | | 297 | | 214 | | 142 | | 293 | | 439 | | |
| 06:30 | 104 | | 229 | | 236 | | 133 | | 340 | | 362 | | |
| 06:45 | 110 | 361 | 251 | 1031 | 252 | 852 | 109 | 563 | 362 | 1213 | 360 | 1594 | |
| 07:00 | 132 | | 246 | | 275 | | 131 | | 407 | | 377 | | |
| 07:15 | 130 | | 204 | | 297 | | 101 | | 427 | | 305 | | |
| 07:30 | 128 | | 159 | | 320 | | 108 | | 448 | | 267 | | |
| 07:45 | 145 | 535 | 153 | 762 | 314 | 1206 | 96 | 436 | 459 | 1741 | 249 | 1198 | |
| 08:00 | 137 | | 162 | | 317 | | 119 | | 454 | | 281 | | |
| 08:15 | 114 | | 122 | | 292 | | 92 | | 406 | | 214 | | |
| 08:30 | 128 | | 135 | | 237 | | 129 | | 365 | | 264 | | |
| 08:45 | 109 | 488 | 111 | 530 | 267 | 1113 | 90 | 430 | 376 | 1601 | 201 | 960 | |
| 09:00 | 120 | | 111 | | 224 | | 86 | | 344 | | 197 | | |
| 09:15 | 135 | | 126 | | 181 | | 102 | | 316 | | 228 | | |
| 09:30 | 151 | | 100 | | 187 | | 88 | | 338 | | 188 | | |
| 09:45 | 121 | 527 | 98 | 435 | 148 | 740 | 75 | 351 | 269 | 1267 | 173 | 786 | |
| 10:00 | 129 | | 96 | | 166 | | 64 | | 295 | | 160 | | |
| 10:15 | 99 | | 89 | | 158 | | 61 | | 257 | | 150 | | |
| 10:30 | 126 | | 82 | | 139 | | 56 | | 265 | | 138 | | |
| 10:45 | 140 | 494 | 62 | 329 | 128 | 591 | 43 | 224 | 268 | 1085 | 105 | 553 | |
| 11:00 | 124 | | 77 | | 122 | | 50 | | 246 | | 127 | | |
| 11:15 | 108 | | 67 | | 138 | | 49 | | 246 | | 116 | | |
| 11:30 | 122 | | 61 | | 132 | | 44 | | 254 | | 105 | | |
| 11:45 | 131 | 485 | 77 | 282 | 126 | 518 | 23 | 166 | 257 | 1003 | 100 | 448 | |
| Total | 3458 | | 8061 | | 5700 | | 5786 | | 9158 | | 13847 | | |
| Percent | 37.8% | | 58.2% | | 62.2% | | 41.8% | | | | | | |
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| Vol. | 540 | - | 1074 | - | 1248 | - | 743 | - | 1788 | - | 1754 | - | - - |
| P.H.F. | 0.931 | | 0.904 | | 0.975 | | 0.906 | | 0.974 | | 0.977 | | |

Summer Street
north of Power House Street
City, State: South Boston, MA
Client: VHB/ C. Dube

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

175708 A Volume
Site Code: TBD

| Start | SB | | | | NB | | | | Combined | | | | 06/08/17 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Time | A.M. | | P.M. | | A.M. | | P.M. | | A.M. | | P.M. | | Thu |
| 12:00 | 67 | | 157 | | 35 | | 162 | | 102 | | 319 | | |
| 12:15 | 58 | | 144 | | 30 | | 147 | | 88 | | 291 | | |
| 12:30 | 39 | | 127 | | 17 | | 140 | | 56 | | 267 | | |
| 12:45 | 62 | 226 | 126 | 554 | 25 | 107 | 143 | 592 | 87 | 333 | 269 | 1146 | |
| 01:00 | 35 | | 146 | | 23 | | 129 | | 58 | | 275 | | |
| 01:15 | 19 | | 135 | | 17 | | 124 | | 36 | | 259 | | |
| 01:30 | 12 | | 154 | | 13 | | 122 | | 25 | | 276 | | |
| 01:45 | 17 | 83 | 140 | 575 | 11 | 64 | 132 | 507 | 28 | 147 | 272 | 1082 | |
| 02:00 | 21 | | 189 | | 10 | | 131 | | 31 | | 320 | | |
| 02:15 | 8 | | 161 | | 12 | | 153 | | 20 | | 314 | | |
| 02:30 | 12 | | 195 | | 7 | | 162 | | 19 | | 357 | | |
| 02:45 | 9 | 50 | 218 | 763 | 7 | 36 | 155 | 601 | 16 | 86 | 373 | 1364 | |
| 03:00 | 11 | | 215 | | 20 | | 164 | | 31 | | 379 | | |
| 03:15 | 9 | | 233 | | 5 | | 142 | | 14 | | 375 | | |
| 03:30 | 10 | | 193 | | 11 | | 154 | | 21 | | 347 | | |
| 03:45 | 11 | 41 | 195 | 836 | 14 | 50 | 148 | 608 | 25 | 91 | 343 | 1444 | |
| 04:00 | 22 | | 231 | | 14 | | 156 | | 36 | | 387 | | |
| 04:15 | 20 | | 252 | | 17 | | 155 | | 37 | | 407 | | |
| 04:30 | 27 | | 241 | | 24 | | 207 | | 51 | | 448 | | |
| 04:45 | 41 | 110 | 219 | 943 | 44 | 99 | 179 | 697 | 85 | 209 | 398 | 1640 | |
| 05:00 | 44 | | 213 | | 64 | | 204 | | 108 | | 417 | | |
| 05:15 | 56 | | 260 | | 99 | | 166 | | 155 | | 426 | | |
| 05:30 | 62 | | 244 | | 137 | | 153 | | 199 | | 397 | | |
| 05:45 | 107 | 269 | 260 | 977 | 183 | 483 | 139 | 662 | 290 | 752 | 399 | 1639 | |
| 06:00 | 76 | | 234 | | 185 | | 174 | | 261 | | 408 | | |
| 06:15 | 82 | | 233 | | 192 | | 163 | | 274 | | 396 | | |
| 06:30 | 100 | | 233 | | 244 | | 141 | | 344 | | 374 | | |
| 06:45 | 117 | 375 | 271 | 971 | 269 | 890 | 113 | 591 | 386 | 1265 | 384 | 1562 | |
| 07:00 | 154 | | 233 | | 282 | | 121 | | 436 | | 354 | | |
| 07:15 | 117 | | 205 | | 296 | | 130 | | 413 | | 335 | | |
| 07:30 | 108 | | 194 | | 157 | | 117 | | 265 | | 311 | | |
| 07:45 | 105 | 484 | 162 | 794 | 133 | 868 | 97 | 465 | 238 | 1352 | 259 | 1259 | |
| 08:00 | 129 | | 133 | | 173 | | 110 | | 302 | | 243 | | |
| 08:15 | 115 | | 121 | | 242 | | 89 | | 357 | | 210 | | |
| 08:30 | 139 | | 137 | | 254 | | 108 | | 393 | | 245 | | |
| 08:45 | 141 | 524 | 135 | 526 | 252 | 921 | 96 | 403 | 393 | 1445 | 231 | 929 | |
| 09:00 | 138 | | 121 | | 247 | | 81 | | 385 | | 202 | | |
| 09:15 | 136 | | 127 | | 215 | | 105 | | 351 | | 232 | | |
| 09:30 | 135 | | 155 | | 203 | | 101 | | 338 | | 256 | | |
| 09:45 | 128 | 537 | 124 | 527 | 165 | 830 | 89 | 376 | 293 | 1367 | 213 | 903 | |
| 10:00 | 141 | | 132 | | 181 | | 100 | | 322 | | 232 | | |
| 10:15 | 110 | | 127 | | 163 | | 74 | | 273 | | 201 | | |
| 10:30 | 119 | | 149 | | 147 | | 93 | | 266 | | 242 | | |
| 10:45 | 139 | 509 | 199 | 607 | 123 | 614 | 89 | 356 | 262 | 1123 | 288 | 963 | |
| 11:00 | 132 | | 118 | | 137 | | 63 | | 269 | | 181 | | |
| 11:15 | 139 | | 82 | | 146 | | 54 | | 285 | | 136 | | |
| 11:30 | 147 | | 87 | | 135 | | 59 | | 282 | | 146 | | |
| 11:45 | 150 | 568 | 79 | 366 | 157 | 575 | 47 | 223 | 307 | 1143 | 126 | 589 | |
| Total | 3776 | | 8439 | | 5537 | | 6081 | | 9313 | | 14520 | | |
| Percent | 40.5% | | 58.1% | | 59.5% | | 41.9% | | | | | | |
| Day Total | | 12215 | | | | 11618 | | | | 23833 | | | |
| Peak | 11:00 | - | 05:15 | - | 06:30 | - | 04:30 | - | 06:30 | - | 04:30 | - | - | - |
| Vol. | 568 | - | 998 | - | 1091 | - | 756 | - | 1579 | - | 1689 | - | - | - |
| P.H.F. | 0.947 | | 0.960 | | 0.921 | | 0.913 | | 0.905 | | 0.943 | | | |

PRECISION
D A T A
INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Summer Street
north of Power House Street
City, State: South Boston, MA
Client: VHB/ C. Dube

175708 A Class
Site Code: TBD

SB

| Start Time | Bikes | Cars & Trailers | 2 Axle Long | Buses | 2 Axle 6 Tire | 3 Axle Single | 4 Axle Single | <5 Axl Double | 5 Axle Double | >6 Axl Double | <6 Axl Multi | 6 Axle Multi | >6 Axl Multi | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 06/07/1 | | | | | | | | | | | | | | |
| 7 | 1 | 116 | 12 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 132 |
| 01:00 | 0 | 41 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 44 |
| 02:00 | 0 | 15 | 5 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 22 |
| 03:00 | 0 | 25 | 6 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 |
| 04:00 | 1 | 52 | 11 | 1 | 7 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 75 |
| 05:00 | 4 | 191 | 43 | 2 | 11 | 0 | 0 | 2 | 5 | 2 | 0 | 0 | 0 | 260 |
| 06:00 | 19 | 244 | 55 | 4 | 14 | 7 | 1 | 4 | 8 | 3 | 0 | 0 | 2 | 361 |
| 07:00 | 19 | 374 | 74 | 7 | 21 | 16 | 4 | 6 | 12 | 1 | 0 | 0 | 1 | 535 |
| 08:00 | 43 | 343 | 40 | 8 | 16 | 11 | 5 | 5 | 11 | 4 | 0 | 0 | 2 | 488 |
| 09:00 | 33 | 359 | 47 | 13 | 12 | 11 | 4 | 2 | 41 | 4 | 0 | 0 | 1 | 527 |
| 10:00 | 21 | 313 | 62 | 13 | 22 | 14 | 1 | 11 | 29 | 5 | 0 | 0 | 3 | 494 |
| 11:00 | 18 | 309 | 67 | 17 | 22 | 6 | 4 | 3 | 36 | 2 | 0 | 0 | 1 | 485 |
| 12 PM | 12 | 363 | 54 | 10 | 30 | 11 | 1 | 3 | 52 | 9 | 0 | 0 | 1 | 546 |
| 13:00 | 25 | 395 | 80 | 12 | 10 | 7 | 1 | 6 | 40 | 5 | 0 | 0 | 2 | 583 |
| 14:00 | 35 | 554 | 120 | 11 | 26 | 19 | 1 | 8 | 28 | 7 | 1 | 0 | 2 | 812 |
| 15:00 | 30 | 625 | 104 | 7 | 30 | 10 | 1 | 6 | 19 | 7 | 1 | 1 | 1 | 842 |
| 16:00 | 23 | 692 | 104 | 7 | 30 | 8 | 1 | 6 | 3 | 2 | 1 | 0 | 0 | 877 |
| 17:00 | 52 | 835 | 101 | 4 | 15 | 14 | 0 | 7 | 3 | 0 | 0 | 1 | 0 | 1032 |
| 18:00 | 45 | 891 | 58 | 9 | 18 | 4 | 1 | 4 | 0 | 1 | 0 | 0 | 0 | 1031 |
| 19:00 | 12 | 638 | 74 | 3 | 20 | 4 | 0 | 10 | 0 | 1 | 0 | 0 | 0 | 762 |
| 20:00 | 16 | 437 | 39 | 2 | 30 | 3 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 530 |
| 21:00 | 7 | 375 | 35 | 2 | 15 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 435 |
| 22:00 | 3 | 283 | 37 | 3 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 329 |
| 23:00 | 4 | 239 | 30 | 2 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 282 |
| Total | 423 | 8709 | 1261 | 139 | 359 | 152 | 26 | 86 | 290 | 53 | 3 | 2 | 16 | 11519 |
| Percent | 3.7% | 75.6% | 10.9% | 1.2% | 3.1% | 1.3% | 0.2% | 0.7% | 2.5% | 0.5% | 0.0% | 0.0% | 0.1% | |
| AM Peak | 08:00 | 07:00 | 07:00 | 11:00 | 10:00 | 07:00 | 08:00 | 10:00 | 09:00 | 10:00 | | | 10:00 | 07:00 |
| Vol. | 43 | 374 | 74 | 17 | 22 | 16 | 5 | 11 | 41 | 5 | | | 3 | 535 |
| PM Peak | 17:00 | 18:00 | 14:00 | 13:00 | 12:00 | 14:00 | 12:00 | 19:00 | 12:00 | 12:00 | 14:00 | 15:00 | 13:00 | 17:00 |
| Vol. | 52 | 891 | 120 | 12 | 30 | 19 | 1 | 10 | 52 | 9 | 1 | 1 | 2 | 1032 |

PRECISION
D A T A
INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Summer Street
north of Power House Street
City, State: South Boston, MA
Client: VHB/ C. Dube

175708 A Class
Site Code: TBD

SB

| Start Time | Bikes | Cars & Trailers | 2 Axle Long | Buses | 2 Axle 6 Tire | 3 Axle Single | 4 Axle Single | <5 Axl Double | 5 Axle Double | >6 Axl Double | <6 Axl Multi | 6 Axle Multi | >6 Axl Multi | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 06/08/1 | | | | | | | | | | | | | | |
| 7 | 1 | 191 | 26 | 1 | 2 | 3 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 226 |
| 01:00 | 0 | 71 | 9 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 83 |
| 02:00 | 1 | 43 | 3 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 |
| 03:00 | 2 | 31 | 4 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 |
| 04:00 | 3 | 82 | 17 | 1 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 110 |
| 05:00 | 9 | 190 | 41 | 0 | 15 | 2 | 0 | 0 | 9 | 3 | 0 | 0 | 0 | 269 |
| 06:00 | 13 | 265 | 51 | 4 | 18 | 7 | 1 | 5 | 8 | 3 | 0 | 0 | 0 | 375 |
| 07:00 | 17 | 362 | 52 | 9 | 16 | 5 | 1 | 6 | 14 | 2 | 0 | 0 | 0 | 484 |
| 08:00 | 27 | 395 | 44 | 9 | 21 | 10 | 2 | 6 | 8 | 0 | 0 | 0 | 2 | 524 |
| 09:00 | 25 | 373 | 51 | 12 | 27 | 11 | 1 | 3 | 31 | 2 | 0 | 1 | 0 | 537 |
| 10:00 | 26 | 309 | 72 | 11 | 23 | 14 | 0 | 2 | 40 | 10 | 0 | 0 | 2 | 509 |
| 11:00 | 23 | 353 | 84 | 13 | 25 | 12 | 0 | 4 | 48 | 6 | 0 | 0 | 0 | 568 |
| 12 PM | 31 | 370 | 56 | 8 | 28 | 11 | 2 | 1 | 41 | 4 | 1 | 0 | 1 | 554 |
| 13:00 | 28 | 385 | 63 | 8 | 25 | 12 | 2 | 5 | 40 | 4 | 0 | 0 | 3 | 575 |
| 14:00 | 33 | 553 | 88 | 7 | 27 | 17 | 3 | 8 | 18 | 7 | 1 | 0 | 1 | 763 |
| 15:00 | 38 | 595 | 101 | 9 | 38 | 12 | 2 | 9 | 25 | 6 | 0 | 1 | 0 | 836 |
| 16:00 | 34 | 768 | 84 | 7 | 23 | 14 | 1 | 7 | 1 | 3 | 1 | 0 | 0 | 943 |
| 17:00 | 42 | 816 | 70 | 10 | 16 | 5 | 4 | 7 | 3 | 2 | 0 | 2 | 0 | 977 |
| 18:00 | 40 | 817 | 76 | 12 | 10 | 4 | 2 | 9 | 0 | 0 | 0 | 0 | 1 | 971 |
| 19:00 | 24 | 690 | 57 | 3 | 13 | 4 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 794 |
| 20:00 | 11 | 446 | 40 | 1 | 26 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 526 |
| 21:00 | 7 | 469 | 32 | 3 | 14 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 527 |
| 22:00 | 10 | 547 | 42 | 3 | 2 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 607 |
| 23:00 | 9 | 332 | 17 | 2 | 4 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 366 |
| Total | 454 | 9453 | 1180 | 136 | 382 | 150 | 21 | 79 | 289 | 52 | 4 | 5 | 10 | 12215 |
| Percent | 3.7% | 77.4% | 9.7% | 1.1% | 3.1% | 1.2% | 0.2% | 0.6% | 2.4% | 0.4% | 0.0% | 0.0% | 0.1% | |
| AM Peak | 08:00 | 08:00 | 11:00 | 11:00 | 09:00 | 10:00 | 08:00 | 07:00 | 11:00 | 10:00 | | 09:00 | 08:00 | 11:00 |
| Vol. | 27 | 395 | 84 | 13 | 27 | 14 | 2 | 6 | 48 | 10 | | 1 | 2 | 568 |
| PM Peak | 17:00 | 18:00 | 15:00 | 18:00 | 15:00 | 14:00 | 17:00 | 15:00 | 12:00 | 14:00 | 12:00 | 17:00 | 13:00 | 17:00 |
| Vol. | 42 | 817 | 101 | 12 | 38 | 17 | 4 | 9 | 41 | 7 | 1 | 2 | 3 | 977 |

PRECISION
D A T A
INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
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Summer Street
north of Power House Street
City, State: South Boston, MA
Client: VHB/ C. Dube

175708 A Class
Site Code: TBD

NB

| Start Time | Bikes | Cars & Trailers | 2 Axle Long | Buses | 2 Axle 6 Tire | 3 Axle Single | 4 Axle Single | <5 Axl Double | 5 Axle Double | >6 Axl Double | <6 Axl Multi | 6 Axle Multi | >6 Axl Multi | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 06/07/1 | | | | | | | | | | | | | | |
| 7 | 1 | 66 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 72 |
| 01:00 | 0 | 24 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 |
| 02:00 | 0 | 28 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 |
| 03:00 | 0 | 20 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 |
| 04:00 | 1 | 88 | 10 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 104 |
| 05:00 | 4 | 308 | 73 | 2 | 26 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 415 |
| 06:00 | 13 | 632 | 124 | 14 | 58 | 4 | 1 | 5 | 1 | 0 | 0 | 0 | 0 | 852 |
| 07:00 | 25 | 981 | 134 | 16 | 39 | 4 | 0 | 4 | 2 | 1 | 0 | 0 | 0 | 1206 |
| 08:00 | 36 | 683 | 250 | 22 | 67 | 9 | 2 | 17 | 22 | 4 | 0 | 0 | 1 | 1113 |
| 09:00 | 26 | 524 | 87 | 18 | 30 | 11 | 1 | 4 | 33 | 5 | 0 | 0 | 1 | 740 |
| 10:00 | 11 | 389 | 94 | 13 | 35 | 2 | 1 | 4 | 39 | 3 | 0 | 0 | 0 | 591 |
| 11:00 | 18 | 342 | 64 | 10 | 24 | 8 | 0 | 1 | 48 | 3 | 0 | 0 | 0 | 518 |
| 12 PM | 7 | 330 | 55 | 14 | 33 | 6 | 1 | 0 | 41 | 2 | 0 | 0 | 0 | 489 |
| 13:00 | 19 | 330 | 67 | 11 | 21 | 17 | 1 | 4 | 53 | 4 | 0 | 0 | 0 | 527 |
| 14:00 | 21 | 397 | 82 | 8 | 35 | 14 | 3 | 2 | 31 | 5 | 0 | 0 | 0 | 598 |
| 15:00 | 21 | 386 | 60 | 10 | 28 | 9 | 1 | 5 | 31 | 2 | 0 | 0 | 1 | 554 |
| 16:00 | 29 | 548 | 85 | 16 | 26 | 7 | 1 | 5 | 24 | 2 | 0 | 0 | 0 | 743 |
| 17:00 | 18 | 566 | 91 | 4 | 17 | 6 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 705 |
| 18:00 | 23 | 452 | 61 | 6 | 15 | 3 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 563 |
| 19:00 | 8 | 347 | 64 | 3 | 13 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 436 |
| 20:00 | 17 | 350 | 48 | 1 | 12 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 430 |
| 21:00 | 10 | 289 | 35 | 4 | 11 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 351 |
| 22:00 | 4 | 187 | 25 | 0 | 5 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 224 |
| 23:00 | 3 | 138 | 18 | 1 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 166 |
| Total | 315 | 8405 | 1546 | 175 | 505 | 102 | 17 | 60 | 326 | 32 | 0 | 0 | 3 | 11486 |
| Percent | 2.7% | 73.2% | 13.5% | 1.5% | 4.4% | 0.9% | 0.1% | 0.5% | 2.8% | 0.3% | 0.0% | 0.0% | 0.0% | |
| AM Peak | 08:00 | 07:00 | 08:00 | 08:00 | 08:00 | 09:00 | 08:00 | 08:00 | 11:00 | 09:00 | | | 08:00 | 07:00 |
| Vol. | 36 | 981 | 250 | 22 | 67 | 11 | 2 | 17 | 48 | 5 | | | 1 | 1206 |
| PM Peak | 16:00 | 17:00 | 17:00 | 16:00 | 14:00 | 13:00 | 14:00 | 15:00 | 13:00 | 14:00 | | | 15:00 | 16:00 |
| Vol. | 29 | 566 | 91 | 16 | 35 | 17 | 3 | 5 | 53 | 5 | | | 1 | 743 |

PRECISION
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INDUSTRIES, LLC
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Summer Street
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175708 A Class
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NB

| Start Time | Bikes | Cars & Trailers | 2 Axle Long | Buses | 2 Axle 6 Tire | 3 Axle Single | 4 Axle Single | <5 Axl Double | 5 Axle Double | >6 Axl Double | <6 Axl Multi | 6 Axle Multi | >6 Axl Multi | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 06/08/1 | | | | | | | | | | | | | | |
| 7 | 4 | 87 | 13 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 107 |
| 01:00 | 4 | 47 | 10 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 64 |
| 02:00 | 0 | 31 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 |
| 03:00 | 3 | 38 | 3 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 |
| 04:00 | 0 | 76 | 14 | 0 | 7 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 99 |
| 05:00 | 6 | 344 | 79 | 2 | 51 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 483 |
| 06:00 | 17 | 634 | 133 | 13 | 81 | 3 | 1 | 7 | 0 | 1 | 0 | 0 | 0 | 890 |
| 07:00 | 21 | 719 | 75 | 13 | 23 | 9 | 0 | 7 | 1 | 0 | 0 | 0 | 0 | 868 |
| 08:00 | 32 | 741 | 63 | 14 | 33 | 10 | 3 | 4 | 20 | 1 | 0 | 0 | 0 | 921 |
| 09:00 | 20 | 602 | 90 | 16 | 54 | 8 | 1 | 5 | 30 | 4 | 0 | 0 | 0 | 830 |
| 10:00 | 20 | 407 | 92 | 9 | 33 | 7 | 0 | 2 | 39 | 3 | 0 | 0 | 2 | 614 |
| 11:00 | 18 | 354 | 91 | 15 | 29 | 10 | 1 | 4 | 42 | 11 | 0 | 0 | 0 | 575 |
| 12 PM | 19 | 412 | 78 | 14 | 26 | 5 | 2 | 0 | 34 | 2 | 0 | 0 | 0 | 592 |
| 13:00 | 14 | 340 | 58 | 8 | 21 | 3 | 3 | 0 | 54 | 5 | 0 | 0 | 1 | 507 |
| 14:00 | 26 | 398 | 74 | 9 | 37 | 12 | 0 | 3 | 41 | 1 | 0 | 0 | 0 | 601 |
| 15:00 | 28 | 432 | 62 | 10 | 29 | 12 | 0 | 2 | 29 | 4 | 0 | 0 | 0 | 608 |
| 16:00 | 33 | 523 | 66 | 10 | 28 | 11 | 0 | 5 | 19 | 2 | 0 | 0 | 0 | 697 |
| 17:00 | 39 | 519 | 67 | 11 | 21 | 2 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 662 |
| 18:00 | 26 | 496 | 50 | 5 | 9 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 591 |
| 19:00 | 16 | 392 | 39 | 6 | 10 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 465 |
| 20:00 | 10 | 357 | 25 | 3 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 403 |
| 21:00 | 14 | 309 | 35 | 4 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 376 |
| 22:00 | 8 | 310 | 26 | 1 | 8 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 356 |
| 23:00 | 6 | 192 | 18 | 2 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 223 |
| Total | 384 | 8760 | 1264 | 168 | 532 | 102 | 14 | 46 | 310 | 35 | 0 | 0 | 3 | 11618 |
| Percent | 3.3% | 75.4% | 10.9% | 1.4% | 4.6% | 0.9% | 0.1% | 0.4% | 2.7% | 0.3% | 0.0% | 0.0% | 0.0% | |
| AM Peak | 08:00 | 08:00 | 06:00 | 09:00 | 06:00 | 08:00 | 08:00 | 06:00 | 11:00 | 11:00 | | | 10:00 | 08:00 |
| Vol. | 32 | 741 | 133 | 16 | 81 | 10 | 3 | 7 | 42 | 11 | | | 2 | 921 |
| PM Peak | 17:00 | 16:00 | 12:00 | 12:00 | 14:00 | 14:00 | 13:00 | 16:00 | 13:00 | 13:00 | | | 13:00 | 16:00 |
| Vol. | 39 | 523 | 78 | 14 | 37 | 12 | 3 | 5 | 54 | 5 | | | 1 | 697 |

PRECISION
D A T A
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Summer Street
north of Power House Street
City, State: South Boston, MA
Client: VHB/ C. Dube

175708 A Speed
Site Code: TBD

SB

| Start Time | 1 14 | 15 19 | 20 24 | 25 29 | 30 34 | 35 39 | 40 44 | 45 49 | 50 54 | 55 59 | 60 64 | 65 69 | 70 9999 | Total | 85th % ile | Ave Speed |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 06/07/ 17 | 0 | 0 | 1 | 9 | 28 | 54 | 26 | **13** | 1 | 0 | 0 | 0 | 0 | 132 | 42 | 37 |
| 01:00 | 0 | 0 | 0 | 4 | 9 | 17 | 13 | 1 | 0 | 0 | 0 | 0 | 0 | 44 | 41 | 37 |
| 02:00 | 0 | 0 | 0 | 2 | 3 | 7 | 5 | 2 | **3** | 0 | 0 | 0 | 0 | 22 | 48 | 40 |
| 03:00 | 0 | 0 | 1 | 5 | 9 | 8 | 7 | 5 | 0 | 0 | 0 | 0 | 0 | 35 | 43 | 36 |
| 04:00 | 0 | 0 | 0 | 10 | 19 | 27 | 14 | 4 | 1 | 0 | 0 | 0 | 0 | 75 | 41 | 36 |
| 05:00 | 0 | 0 | 8 | 29 | 78 | 98 | **36** | 11 | 0 | 0 | 0 | 0 | 0 | 260 | 40 | 35 |
| 06:00 | 5 | 3 | 19 | 65 | 135 | 102 | 25 | 4 | 3 | 0 | 0 | 0 | 0 | 361 | 37 | 33 |
| 07:00 | 6 | 16 | 34 | 111 | **215** | 126 | 24 | 2 | 1 | 0 | 0 | 0 | 0 | **535** | 36 | 31 |
| 08:00 | **16** | **17** | **106** | 121 | 144 | 58 | 22 | 4 | 0 | 0 | 0 | 0 | 0 | 488 | 34 | 28 |
| 09:00 | 13 | 13 | 76 | **140** | 152 | 96 | 29 | 7 | 1 | 0 | 0 | 0 | 0 | 527 | 36 | 30 |
| 10:00 | 7 | 7 | 64 | 130 | 180 | 85 | 19 | 2 | 0 | 0 | 0 | 0 | 0 | 494 | 35 | 30 |
| 11:00 | 2 | 5 | 19 | 112 | 171 | **137** | 28 | 9 | 2 | 0 | 0 | 0 | 0 | 485 | 37 | 33 |
| 12 PM | 0 | 4 | 42 | 122 | 192 | 146 | 37 | 2 | 1 | 0 | 0 | 0 | 0 | 546 | 37 | 32 |
| 13:00 | 3 | 23 | 61 | 122 | 204 | 131 | 35 | 4 | 0 | 0 | 0 | 0 | 0 | 583 | 37 | 31 |
| 14:00 | 12 | 36 | 75 | 229 | 285 | 134 | 38 | 3 | 0 | 0 | 0 | 0 | 0 | 812 | 35 | 30 |
| 15:00 | 11 | 26 | 77 | 186 | 288 | 177 | 56 | **19** | **2** | 0 | 0 | 0 | 0 | 842 | 37 | 31 |
| 16:00 | 4 | 1 | 38 | 118 | 316 | **292** | **90** | 17 | 1 | 0 | 0 | 0 | 0 | 877 | 38 | 34 |
| 17:00 | **18** | **62** | **146** | **256** | 307 | 193 | 44 | 5 | 1 | 0 | 0 | 0 | 0 | **1032** | 36 | 29 |
| 18:00 | 9 | 34 | 88 | 231 | **333** | 242 | 79 | 15 | 0 | 0 | 0 | 0 | 0 | 1031 | 37 | 31 |
| 19:00 | 0 | 4 | 36 | 123 | 253 | 247 | 82 | 16 | 1 | 0 | 0 | 0 | 0 | 762 | 38 | 34 |
| 20:00 | 5 | 1 | 29 | 182 | 186 | 98 | 24 | 3 | 2 | 0 | 0 | 0 | 0 | 530 | 36 | 31 |
| 21:00 | 0 | 0 | 16 | 83 | 214 | 104 | 17 | 1 | 0 | 0 | 0 | 0 | 0 | 435 | 36 | 32 |
| 22:00 | 1 | 0 | 10 | 58 | 158 | 86 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 329 | 37 | 33 |
| 23:00 | 0 | 1 | 2 | 37 | 114 | 91 | 26 | 10 | 1 | 0 | 0 | 0 | 0 | 282 | 38 | 34 |
| Total | 112 | 253 | 948 | 2485 | 3993 | 2756 | 792 | 159 | 21 | 0 | 0 | 0 | 0 | 11519 | | |
| % | 1.0% | 2.2% | 8.2% | 21.6% | 34.7% | 23.9% | 6.9% | 1.4% | 0.2% | 0.0% | 0.0% | 0.0% | 0.0% | | | |
| AM Peak | 08:00 | 08:00 | 08:00 | 09:00 | 07:00 | 11:00 | 05:00 | 00:00 | 02:00 | | | | | 07:00 | | |
| Vol. | 16 | 17 | 106 | 140 | 215 | 137 | 36 | 13 | 3 | | | | | 535 | | |
| PM Peak | 17:00 | 17:00 | 17:00 | 17:00 | 18:00 | 16:00 | 16:00 | 15:00 | 15:00 | | | | | 17:00 | | |
| Vol. | 18 | 62 | 146 | 256 | 333 | 292 | 90 | 19 | 2 | | | | | 1032 | | |

Stats

| | |
|---|---|
| 15th Percentile : | 24 MPH |
| 50th Percentile : | 31 MPH |
| 85th Percentile : | 37 MPH |
| 95th Percentile : | 41 MPH |
| Mean Speed(Average) : | 32 MPH |
| 10 MPH Pace Speed : | 30-39 MPH |
| Number in Pace : | 6749 |
| Percent in Pace : | 58.6% |
| Number of Vehicles > 30 MPH : | 6922 |
| Percent of Vehicles > 30 MPH : | 60.1% |

PRECISION
D A T A
INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Summer Street
north of Power House Street
City, State: South Boston, MA
Client: VHB/ C. Dube

175708 A Speed
Site Code: TBD

SB

| Start Time | 1 14 | 15 19 | 20 24 | 25 29 | 30 34 | 35 39 | 40 44 | 45 49 | 50 54 | 55 59 | 60 64 | 65 69 | 70 9999 | Total | 85th % ile | Ave Speed |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 06/08/ 17 | 2 | 1 | 2 | 11 | 55 | 85 | **50** | 14 | **6** | 0 | 0 | 0 | 0 | 226 | 42 | 37 |
| 01:00 | 0 | 0 | 2 | 1 | 14 | 33 | 26 | 4 | 3 | 0 | 0 | 0 | 0 | 83 | 42 | 38 |
| 02:00 | 0 | 0 | 0 | 2 | 11 | 21 | 10 | 4 | 1 | 1 | 0 | 0 | 0 | 50 | 43 | 38 |
| 03:00 | 0 | 0 | 0 | 2 | 6 | 18 | 9 | 5 | 1 | 0 | 0 | 0 | 0 | 41 | 43 | 38 |
| 04:00 | 0 | 0 | 1 | 7 | 26 | 40 | 24 | 9 | 1 | **2** | 0 | 0 | 0 | 110 | 43 | 37 |
| 05:00 | 3 | 4 | 2 | 32 | 88 | 84 | 40 | **15** | 1 | 0 | 0 | 0 | 0 | 269 | 40 | 35 |
| 06:00 | 0 | 6 | 12 | 47 | 102 | **144** | 47 | 14 | 3 | 0 | 0 | 0 | 0 | 375 | 39 | 35 |
| 07:00 | 4 | 9 | **79** | 79 | 144 | 117 | 44 | 8 | 0 | 0 | 0 | 0 | 0 | 484 | 38 | 31 |
| 08:00 | **8** | **19** | 75 | **173** | 152 | 79 | 17 | 0 | 1 | 0 | 0 | 0 | 0 | 524 | 35 | 29 |
| 09:00 | 8 | 18 | 52 | 125 | 193 | 110 | 26 | 3 | 2 | 0 | 0 | 0 | 0 | 537 | 36 | 31 |
| 10:00 | 4 | 12 | 53 | 141 | 170 | 93 | 32 | 4 | 0 | 0 | 0 | 0 | 0 | 509 | 36 | 31 |
| 11:00 | 2 | 19 | 56 | 163 | **209** | 90 | 27 | 1 | 1 | 0 | 0 | 0 | 0 | **568** | 35 | 30 |
| 12 PM | **24** | 28 | 72 | 135 | 183 | 83 | 23 | 4 | **2** | 0 | 0 | 0 | 0 | 554 | 35 | 29 |
| 13:00 | 5 | 23 | 47 | 151 | 187 | 112 | 43 | 6 | 1 | 0 | 0 | 0 | 0 | 575 | 37 | 31 |
| 14:00 | 6 | 30 | 106 | 181 | 275 | 133 | 25 | 7 | 0 | 0 | 0 | 0 | 0 | 763 | 35 | 30 |
| 15:00 | 12 | 27 | 89 | 194 | 255 | 192 | 61 | 6 | 0 | 0 | 0 | 0 | 0 | 836 | 37 | 31 |
| 16:00 | 3 | 8 | 58 | 215 | **366** | 228 | 55 | 9 | 0 | 0 | 0 | 0 | **1** | 943 | 37 | 32 |
| 17:00 | 12 | **74** | **147** | **274** | 306 | 137 | 25 | 1 | 1 | 0 | 0 | 0 | 0 | **977** | 34 | 29 |
| 18:00 | 11 | 24 | 91 | 242 | 331 | 222 | 40 | 9 | 1 | 0 | 0 | 0 | 0 | 971 | 36 | 31 |
| 19:00 | 3 | 5 | 31 | 126 | 269 | 265 | **82** | 11 | 2 | 0 | 0 | 0 | 0 | 794 | 38 | 34 |
| 20:00 | 0 | 2 | 14 | 59 | 180 | 181 | 72 | 15 | 2 | 0 | **1** | 0 | 0 | 526 | 39 | 35 |
| 21:00 | 0 | 0 | 15 | 53 | 193 | 197 | 52 | 15 | 1 | **1** | 0 | 0 | 0 | 527 | 38 | 35 |
| 22:00 | 0 | 1 | 5 | 44 | 195 | **266** | 81 | 14 | 0 | 1 | 0 | 0 | 0 | 607 | 39 | 35 |
| 23:00 | 0 | 0 | 4 | 12 | 78 | 198 | 57 | **16** | 1 | 0 | 0 | 0 | 0 | 366 | 40 | 37 |
| Total | 107 | 310 | 1013 | 2469 | 3988 | 3128 | 968 | 194 | 31 | 5 | 1 | 0 | 1 | 12215 | | |
| % | 0.9% | 2.5% | 8.3% | 20.2% | 32.6% | 25.6% | 7.9% | 1.6% | 0.3% | 0.0% | 0.0% | 0.0% | 0.0% | | | |
| AM Peak | 08:00 | 08:00 | 07:00 | 08:00 | 11:00 | 06:00 | 00:00 | 05:00 | 00:00 | 04:00 | | | | 11:00 | | |
| Vol. | 8 | 19 | 79 | 173 | 209 | 144 | 50 | 15 | 6 | 2 | | | | 568 | | |
| PM Peak | 12:00 | 17:00 | 17:00 | 17:00 | 16:00 | 22:00 | 19:00 | 23:00 | 12:00 | 21:00 | 20:00 | | 16:00 | 17:00 | | |
| Vol. | 24 | 74 | 147 | 274 | 366 | 266 | 82 | 16 | 2 | 1 | 1 | | 1 | 977 | | |

Stats

| | |
|---|---|
| 15th Percentile : | 24 MPH |
| 50th Percentile : | 31 MPH |
| 85th Percentile : | 37 MPH |
| 95th Percentile : | 42 MPH |
| Mean Speed(Average) : | 32 MPH |
| 10 MPH Pace Speed : | 30-39 MPH |
| Number in Pace : | 7116 |
| Percent in Pace : | 58.3% |
| Number of Vehicles > 30 MPH : | 7518 |
| Percent of Vehicles > 30 MPH : | 61.6% |

PRECISION
D A T A
INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Summer Street
north of Power House Street
City, State: South Boston, MA
Client: VHB/ C. Dube

175708 A Speed
Site Code: TBD

NB

| Start Time | 1 14 | 15 19 | 20 24 | 25 29 | 30 34 | 35 39 | 40 44 | 45 49 | 50 54 | 55 59 | 60 64 | 65 69 | 70 9999 | Total | 85th % ile | Ave Speed |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 06/07/ 17 | 0 | 0 | 3 | 8 | 36 | 20 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 72 | 37 | 33 |
| 01:00 | 0 | 0 | 1 | 3 | 13 | 10 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | 37 | 33 |
| 02:00 | 0 | 1 | 0 | 3 | 12 | 13 | 4 | 0 | 0 | **1** | 0 | 0 | 0 | 34 | 38 | 35 |
| 03:00 | 0 | 0 | 0 | 2 | 9 | 12 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 38 | 35 |
| 04:00 | 0 | 0 | 3 | 6 | 18 | 49 | 23 | 3 | 1 | 1 | 0 | 0 | 0 | 104 | 41 | 37 |
| 05:00 | 0 | 3 | 4 | 11 | 94 | 200 | 83 | 16 | **4** | 0 | 0 | 0 | 0 | 415 | 41 | 37 |
| 06:00 | 2 | 4 | 20 | 99 | 392 | 257 | 64 | 14 | 0 | 0 | 0 | 0 | 0 | 852 | 38 | 34 |
| 07:00 | 4 | 3 | 50 | 230 | **465** | **373** | 75 | 6 | 0 | 0 | 0 | 0 | 0 | **1206** | 37 | 33 |
| 08:00 | **57** | **88** | **135** | **261** | 267 | 193 | **89** | **20** | 3 | 0 | 0 | 0 | 0 | 1113 | 37 | 29 |
| 09:00 | 4 | 17 | 67 | 236 | 325 | 73 | 17 | 1 | 0 | 0 | 0 | 0 | 0 | 740 | 33 | 30 |
| 10:00 | 3 | 5 | 29 | 138 | 292 | 108 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 591 | 35 | 31 |
| 11:00 | 1 | 2 | 9 | 97 | 209 | 157 | 39 | 4 | 0 | 0 | 0 | 0 | 0 | 518 | 37 | 33 |
| 12 PM | 1 | 3 | 10 | 78 | 223 | 139 | 31 | 4 | 0 | 0 | 0 | 0 | 0 | 489 | 37 | 33 |
| 13:00 | 2 | 10 | 17 | 88 | 254 | 135 | 16 | 3 | 1 | 1 | 0 | 0 | 0 | 527 | 36 | 32 |
| 14:00 | 3 | 4 | 24 | 109 | 260 | 156 | 37 | 5 | 0 | 0 | 0 | 0 | 0 | 598 | 37 | 33 |
| 15:00 | 2 | 2 | 24 | 126 | 237 | 122 | 33 | 8 | 0 | 0 | 0 | 0 | 0 | 554 | 37 | 32 |
| 16:00 | 3 | 2 | 4 | 64 | **291** | **298** | **66** | **12** | **2** | 1 | 0 | 0 | 0 | **743** | 38 | 35 |
| 17:00 | 3 | 3 | 30 | 128 | 282 | 217 | 36 | 6 | 0 | 0 | 0 | 0 | 0 | 705 | 37 | 33 |
| 18:00 | **5** | 5 | 22 | 55 | 219 | 202 | 47 | 5 | 1 | **2** | 0 | 0 | 0 | 563 | 38 | 34 |
| 19:00 | 0 | 1 | 13 | 40 | 152 | 172 | 45 | 11 | 2 | 0 | 0 | 0 | 0 | 436 | 38 | 35 |
| 20:00 | 3 | **20** | **75** | **159** | 113 | 47 | 11 | 2 | 0 | 0 | 0 | 0 | 0 | 430 | 33 | 28 |
| 21:00 | 1 | 8 | 44 | 118 | 126 | 47 | 4 | 2 | 1 | 0 | 0 | 0 | 0 | 351 | 34 | 30 |
| 22:00 | 1 | 6 | 16 | 80 | 89 | 26 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 224 | 33 | 30 |
| 23:00 | 0 | 3 | 17 | 54 | 49 | 30 | 10 | 3 | 0 | 0 | 0 | 0 | 0 | 166 | 37 | 31 |
| Total | 95 | 190 | 617 | 2193 | 4427 | 3056 | 760 | 127 | 15 | 6 | 0 | 0 | 0 | 11486 | | |
| % | 0.8% | 1.7% | 5.4% | 19.1% | 38.5% | 26.6% | 6.6% | 1.1% | 0.1% | 0.1% | 0.0% | 0.0% | 0.0% | | | |
| AM Peak | 08:00 | 08:00 | 08:00 | 08:00 | 07:00 | 07:00 | 08:00 | 08:00 | 05:00 | 02:00 | | | | 07:00 | | |
| Vol. | 57 | 88 | 135 | 261 | 465 | 373 | 89 | 20 | 4 | 1 | | | | 1206 | | |
| PM Peak | 18:00 | 20:00 | 20:00 | 20:00 | 16:00 | 16:00 | 16:00 | 16:00 | 16:00 | 18:00 | | | | 16:00 | | |
| Vol. | 5 | 20 | 75 | 159 | 291 | 298 | 66 | 12 | 2 | 2 | | | | 743 | | |

Stats

| | |
|---|---|
| 15th Percentile : | 25 MPH |
| 50th Percentile : | 31 MPH |
| 85th Percentile : | 37 MPH |
| 95th Percentile : | 41 MPH |
| Mean Speed(Average) : | 32 MPH |
| 10 MPH Pace Speed : | 30-39 MPH |
| Number in Pace : | 7483 |
| Percent in Pace : | 65.1% |
| Number of Vehicles > 30 MPH : | 7506 |
| Percent of Vehicles > 30 MPH : | 65.3% |

PRECISION
D A T A
INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Summer Street
north of Power House Street
City, State: South Boston, MA
Client: VHB/ C. Dube

175708 A Speed
Site Code: TBD

NB

| Start Time | 1 14 | 15 19 | 20 24 | 25 29 | 30 34 | 35 39 | 40 44 | 45 49 | 50 54 | 55 59 | 60 64 | 65 69 | 70 9999 | Total | 85th % ile | Ave Speed |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 06/08/ 17 | 0 | 0 | 2 | 20 | 36 | 34 | 13 | 2 | 0 | 0 | 0 | 0 | 0 | 107 | 38 | 34 |
| 01:00 | 2 | 0 | 1 | 14 | 19 | 15 | 8 | 2 | 3 | 0 | 0 | 0 | 0 | 64 | 41 | 34 |
| 02:00 | 0 | 0 | 0 | 2 | 7 | 15 | 9 | 2 | 1 | 0 | 0 | 0 | 0 | 36 | 42 | 38 |
| 03:00 | 0 | 0 | 0 | 3 | 11 | 22 | 8 | 5 | 1 | 0 | 0 | 0 | 0 | 50 | 43 | 37 |
| 04:00 | 0 | 0 | 0 | 5 | 15 | 40 | 28 | 9 | 1 | **1** | 0 | 0 | 0 | 99 | 43 | 38 |
| 05:00 | 0 | 1 | 2 | 11 | 76 | 235 | 130 | 22 | 6 | 0 | 0 | 0 | 0 | 483 | 42 | 38 |
| 06:00 | 0 | 1 | 4 | 14 | 119 | **427** | **264** | **53** | **7** | 1 | 0 | 0 | 0 | 890 | 42 | 38 |
| 07:00 | **85** | 23 | 108 | 44 | 124 | 303 | 156 | 24 | 1 | 0 | 0 | 0 | 0 | 868 | 40 | 32 |
| 08:00 | 44 | **33** | **145** | **197** | 266 | 189 | 41 | 6 | 0 | 0 | 0 | 0 | 0 | **921** | 36 | 29 |
| 09:00 | 3 | 4 | 20 | 114 | **326** | 283 | 69 | 9 | 2 | 0 | 0 | 0 | 0 | 830 | 38 | 34 |
| 10:00 | 2 | 6 | 21 | 121 | 271 | 155 | 31 | 5 | 1 | 0 | 0 | **1** | 0 | 614 | 37 | 32 |
| 11:00 | 4 | 0 | 22 | 118 | 251 | 142 | 37 | 1 | 0 | 0 | 0 | 0 | 0 | 575 | 37 | 32 |
| 12 PM | 5 | 3 | 28 | **139** | 270 | 114 | 29 | 3 | 1 | 0 | 0 | 0 | 0 | 592 | 36 | 32 |
| 13:00 | 1 | 2 | 9 | 105 | 237 | 139 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 507 | 36 | 32 |
| 14:00 | 2 | 4 | 32 | 128 | 307 | 104 | 22 | 2 | 0 | 0 | 0 | 0 | 0 | 601 | 35 | 32 |
| 15:00 | 2 | **6** | 27 | 131 | 267 | 132 | 32 | **9** | **2** | 0 | 0 | 0 | 0 | 608 | 37 | 32 |
| 16:00 | 7 | 0 | 17 | 98 | **323** | **223** | 25 | 2 | 1 | 0 | **1** | 0 | 0 | **697** | 37 | 33 |
| 17:00 | **9** | 4 | **33** | 113 | 296 | 179 | 26 | 2 | 0 | 0 | 0 | 0 | 0 | 662 | 37 | 32 |
| 18:00 | 2 | 3 | 23 | 95 | 249 | 190 | 25 | 3 | 1 | 0 | 0 | 0 | 0 | 591 | 37 | 33 |
| 19:00 | 1 | 3 | 7 | 59 | 159 | 175 | **57** | 4 | 0 | 0 | 0 | 0 | 0 | 465 | 38 | 34 |
| 20:00 | 0 | 1 | 6 | 56 | 216 | 103 | 18 | 3 | 0 | 0 | 0 | 0 | 0 | 403 | 37 | 33 |
| 21:00 | 1 | 1 | 9 | 51 | 151 | 130 | 28 | 5 | 0 | 0 | 0 | 0 | 0 | 376 | 38 | 34 |
| 22:00 | 0 | 2 | 6 | 37 | 157 | 111 | 35 | 6 | 1 | **1** | 0 | 0 | 0 | 356 | 38 | 34 |
| 23:00 | 0 | 0 | 2 | 20 | 109 | 64 | 23 | 5 | 0 | 0 | 0 | 0 | 0 | 223 | 38 | 34 |
| Total | 170 | 97 | 524 | 1695 | 4262 | 3524 | 1128 | 184 | 29 | 3 | 1 | 1 | 0 | 11618 | | |
| % | 1.5% | 0.8% | 4.5% | 14.6% | 36.7% | 30.3% | 9.7% | 1.6% | 0.2% | 0.0% | 0.0% | 0.0% | 0.0% | | | |
| AM Peak | 07:00 | 08:00 | 08:00 | 08:00 | 09:00 | 06:00 | 06:00 | 06:00 | 06:00 | 04:00 | | 10:00 | | 08:00 | | |
| Vol. | 85 | 33 | 145 | 197 | 326 | 427 | 264 | 53 | 7 | 1 | | 1 | | 921 | | |
| PM Peak | 17:00 | 15:00 | 17:00 | 12:00 | 16:00 | 16:00 | 19:00 | 15:00 | 15:00 | 22:00 | 16:00 | | | 16:00 | | |
| Vol. | 9 | 6 | 33 | 139 | 323 | 223 | 57 | 9 | 2 | 1 | 1 | | | 697 | | |

Stats

| | |
|---|---|
| 15th Percentile : | 26 MPH |
| 50th Percentile : | 32 MPH |
| 85th Percentile : | 38 MPH |
| 95th Percentile : | 42 MPH |
| Mean Speed(Average) : | 33 MPH |
| 10 MPH Pace Speed : | 30-39 MPH |
| Number in Pace : | 7786 |
| Percent in Pace : | 67.0% |
| Number of Vehicles > 30 MPH : | 8280 |
| Percent of Vehicles > 30 MPH : | 71.3% |

L Street
south of East 8th Street
City, State: South Boston, MA
Client: VHB/C. Dube

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

175708 C Volume
Site Code: TBD

| Start | | SB | | | | NB | | | | Combined | | | | 06/07/17 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Time | A.M. | | P.M. | | A.M. | | P.M. | | A.M. | | P.M. | | Wed |
| 12:00 | 11 | | 46 | | 9 | | 54 | | 20 | | 100 | | |
| 12:15 | 18 | | 39 | | 7 | | 38 | | 25 | | 77 | | |
| 12:30 | 19 | | 41 | | 1 | | 63 | | 20 | | 104 | | |
| 12:45 | 6 | 54 | 49 | 175 | 1 | 18 | 63 | 218 | 7 | 72 | 112 | 393 | |
| 01:00 | 3 | | 45 | | 2 | | 60 | | 5 | | 105 | | |
| 01:15 | 7 | | 58 | | 3 | | 44 | | 10 | | 102 | | |
| 01:30 | 4 | | 70 | | 5 | | 42 | | 9 | | 112 | | |
| 01:45 | 5 | 19 | 66 | 239 | 4 | 14 | 49 | 195 | 9 | 33 | 115 | 434 | |
| 02:00 | 3 | | 69 | | 4 | | 47 | | 7 | | 116 | | |
| 02:15 | 1 | | 101 | | 7 | | 53 | | 8 | | 154 | | |
| 02:30 | 2 | | 106 | | 6 | | 51 | | 8 | | 157 | | |
| 02:45 | 2 | 8 | 111 | 387 | 2 | 19 | 48 | 199 | 4 | 27 | 159 | 586 | |
| 03:00 | 1 | | 99 | | 5 | | 65 | | 6 | | 164 | | |
| 03:15 | 2 | | 99 | | 5 | | 63 | | 7 | | 162 | | |
| 03:30 | 5 | | 91 | | 3 | | 73 | | 8 | | 164 | | |
| 03:45 | 4 | 12 | 94 | 383 | 4 | 17 | 77 | 278 | 8 | 29 | 171 | 661 | |
| 04:00 | 4 | | 112 | | 14 | | 97 | | 18 | | 209 | | |
| 04:15 | 5 | | 69 | | 14 | | 126 | | 19 | | 195 | | |
| 04:30 | 2 | | 85 | | 19 | | 97 | | 21 | | 182 | | |
| 04:45 | 8 | 19 | 95 | 361 | 37 | 84 | 96 | 416 | 45 | 103 | 191 | 777 | |
| 05:00 | 6 | | 122 | | 59 | | 99 | | 65 | | 221 | | |
| 05:15 | 24 | | 98 | | 61 | | 121 | | 85 | | 219 | | |
| 05:30 | 56 | | 87 | | 37 | | 135 | | 93 | | 222 | | |
| 05:45 | 11 | 97 | 89 | 396 | 115 | 272 | 111 | 466 | 126 | 369 | 200 | 862 | |
| 06:00 | 27 | | 103 | | 112 | | 87 | | 139 | | 190 | | |
| 06:15 | 22 | | 95 | | 98 | | 69 | | 120 | | 164 | | |
| 06:30 | 17 | | 93 | | 136 | | 83 | | 153 | | 176 | | |
| 06:45 | 24 | 90 | 80 | 371 | 132 | 478 | 54 | 293 | 156 | 568 | 134 | 664 | |
| 07:00 | 28 | | 72 | | 123 | | 69 | | 151 | | 141 | | |
| 07:15 | 36 | | 64 | | 131 | | 58 | | 167 | | 122 | | |
| 07:30 | 40 | | 57 | | 120 | | 45 | | 160 | | 102 | | |
| 07:45 | 31 | 135 | 53 | 246 | 116 | 490 | 46 | 218 | 147 | 625 | 99 | 464 | |
| 08:00 | 31 | | 54 | | 128 | | 40 | | 159 | | 94 | | |
| 08:15 | 40 | | 41 | | 111 | | 45 | | 151 | | 86 | | |
| 08:30 | 39 | | 31 | | 108 | | 37 | | 147 | | 68 | | |
| 08:45 | 38 | 148 | 36 | 162 | 114 | 461 | 48 | 170 | 152 | 609 | 84 | 332 | |
| 09:00 | 31 | | 32 | | 103 | | 38 | | 134 | | 70 | | |
| 09:15 | 32 | | 32 | | 94 | | 39 | | 126 | | 71 | | |
| 09:30 | 38 | | 31 | | 129 | | 32 | | 167 | | 63 | | |
| 09:45 | 34 | 135 | 30 | 125 | 85 | 411 | 33 | 142 | 119 | 546 | 63 | 267 | |
| 10:00 | 21 | | 36 | | 100 | | 21 | | 121 | | 57 | | |
| 10:15 | 29 | | 36 | | 103 | | 30 | | 132 | | 66 | | |
| 10:30 | 49 | | 33 | | 69 | | 27 | | 118 | | 60 | | |
| 10:45 | 40 | 139 | 18 | 123 | 72 | 344 | 22 | 100 | 112 | 483 | 40 | 223 | |
| 11:00 | 30 | | 28 | | 64 | | 18 | | 94 | | 46 | | |
| 11:15 | 50 | | 44 | | 58 | | 12 | | 108 | | 56 | | |
| 11:30 | 46 | | 51 | | 62 | | 15 | | 108 | | 66 | | |
| 11:45 | 47 | 173 | 54 | 177 | 60 | 244 | 15 | 60 | 107 | 417 | 69 | 237 | |
| Total | 1029 | | 3145 | | 2852 | | 2755 | | 3881 | | 5900 | | |
| Percent | 26.5% | | 53.3% | | 73.5% | | 46.7% | | | | | | |
| Day Total | | 4174 | | | | 5607 | | | | 9781 | | | |
| Peak | 11:00 | - | 02:15 | - | 06:30 | - | 05:00 | - | 06:45 | - | 05:00 | - | - | - |
| Vol. | 173 | - | 417 | - | 522 | - | 466 | - | 634 | - | 862 | - | - | - |
| P.H.F. | 0.865 | | 0.939 | | 0.960 | | 0.863 | | 0.949 | | 0.971 | | | |

L Street
south of East 8th Street
City, State: South Boston, MA
Client: VHB/C. Dube

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

175708 C Volume
Site Code: TBD

| Start | SB | | | | NB | | | | Combined | | | | 06/08/17 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Time | A.M. | | P.M. | | A.M. | | P.M. | | A.M. | | P.M. | | Thu |
| 12:00 | 43 | | 56 | | 10 | | 79 | | 53 | | 135 | | |
| 12:15 | 32 | | 56 | | 15 | | 71 | | 47 | | 127 | | |
| 12:30 | 23 | | 54 | | 8 | | 63 | | 31 | | 117 | | |
| 12:45 | 48 | 146 | 53 | 219 | 9 | 42 | 52 | 265 | 57 | 188 | 105 | 484 | |
| 01:00 | 24 | | 53 | | 11 | | 46 | | 35 | | 99 | | |
| 01:15 | 17 | | 58 | | 6 | | 55 | | 23 | | 113 | | |
| 01:30 | 9 | | 81 | | 9 | | 52 | | 18 | | 133 | | |
| 01:45 | 8 | 58 | 63 | 255 | 1 | 27 | 54 | 207 | 9 | 85 | 117 | 462 | |
| 02:00 | 8 | | 73 | | 5 | | 43 | | 13 | | 116 | | |
| 02:15 | 5 | | 93 | | 6 | | 55 | | 11 | | 148 | | |
| 02:30 | 5 | | 97 | | 5 | | 77 | | 10 | | 174 | | |
| 02:45 | 5 | 23 | 108 | 371 | 5 | 21 | 61 | 236 | 10 | 44 | 169 | 607 | |
| 03:00 | 6 | | 95 | | 6 | | 47 | | 12 | | 142 | | |
| 03:15 | 1 | | 89 | | 3 | | 70 | | 4 | | 159 | | |
| 03:30 | 5 | | 84 | | 6 | | 88 | | 11 | | 172 | | |
| 03:45 | 8 | 20 | 84 | 352 | 8 | 23 | 64 | 269 | 16 | 43 | 148 | 621 | |
| 04:00 | 7 | | 100 | | 11 | | 71 | | 18 | | 171 | | |
| 04:15 | 2 | | 134 | | 12 | | 93 | | 14 | | 227 | | |
| 04:30 | 3 | | 107 | | 23 | | 120 | | 26 | | 227 | | |
| 04:45 | 4 | 16 | 94 | 435 | 40 | 86 | 91 | 375 | 44 | 102 | 185 | 810 | |
| 05:00 | 8 | | 95 | | 61 | | 135 | | 69 | | 230 | | |
| 05:15 | 14 | | 89 | | 62 | | 120 | | 76 | | 209 | | |
| 05:30 | 12 | | 88 | | 106 | | 118 | | 118 | | 206 | | |
| 05:45 | 24 | 58 | 77 | 349 | 135 | 364 | 95 | 468 | 159 | 422 | 172 | 817 | |
| 06:00 | 23 | | 87 | | 128 | | 102 | | 151 | | 189 | | |
| 06:15 | 14 | | 88 | | 118 | | 84 | | 132 | | 172 | | |
| 06:30 | 29 | | 88 | | 136 | | 68 | | 165 | | 156 | | |
| 06:45 | 23 | 89 | 71 | 334 | 140 | 522 | 66 | 320 | 163 | 611 | 137 | 654 | |
| 07:00 | 21 | | 68 | | 122 | | 59 | | 143 | | 127 | | |
| 07:15 | 40 | | 59 | | 132 | | 62 | | 172 | | 121 | | |
| 07:30 | 34 | | 77 | | 132 | | 63 | | 166 | | 140 | | |
| 07:45 | 29 | 124 | 56 | 260 | 94 | 480 | 45 | 229 | 123 | 604 | 101 | 489 | |
| 08:00 | 43 | | 37 | | 131 | | 41 | | 174 | | 78 | | |
| 08:15 | 31 | | 50 | | 118 | | 45 | | 149 | | 95 | | |
| 08:30 | 41 | | 36 | | 122 | | 38 | | 163 | | 74 | | |
| 08:45 | 45 | 160 | 42 | 165 | 114 | 485 | 33 | 157 | 159 | 645 | 75 | 322 | |
| 09:00 | 32 | | 53 | | 116 | | 29 | | 148 | | 82 | | |
| 09:15 | 25 | | 44 | | 105 | | 33 | | 130 | | 77 | | |
| 09:30 | 32 | | 49 | | 111 | | 28 | | 143 | | 77 | | |
| 09:45 | 43 | 132 | 41 | 187 | 91 | 423 | 20 | 110 | 134 | 555 | 61 | 297 | |
| 10:00 | 34 | | 51 | | 88 | | 31 | | 122 | | 82 | | |
| 10:15 | 27 | | 42 | | 75 | | 28 | | 102 | | 70 | | |
| 10:30 | 50 | | 61 | | 81 | | 21 | | 131 | | 82 | | |
| 10:45 | 33 | 144 | 117 | 271 | 69 | 313 | 21 | 101 | 102 | 457 | 138 | 372 | |
| 11:00 | 45 | | 50 | | 60 | | 13 | | 105 | | 63 | | |
| 11:15 | 38 | | 43 | | 64 | | 21 | | 102 | | 64 | | |
| 11:30 | 42 | | 27 | | 83 | | 10 | | 125 | | 37 | | |
| 11:45 | 41 | 166 | 38 | 158 | 59 | 266 | 6 | 50 | 100 | 432 | 44 | 208 | |
| Total | 1136 | | 3356 | | 3052 | | 2787 | | 4188 | | 6143 | | |
| Percent | 27.1% | | 54.6% | | 72.9% | | 45.4% | | | | | | |
| Day Total | | 4492 | | | | 5839 | | | | 10331 | | | |
| Peak | 10:30 | - | 04:00 | - | 06:30 | - | 05:00 | - | 08:00 | - | 04:15 | - | - | - |
| Vol. | 166 | - | 435 | - | 530 | - | 468 | - | 645 | - | 869 | - | - | - |
| P.H.F. | 0.830 | | 0.812 | | 0.946 | | 0.867 | | 0.927 | | 0.945 | | | |

PRECISION
D A T A
INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

L Street
south of East 8th Street
City, State: South Boston, MA
Client: VHB/C. Dube

175708 C Class
Site Code: TBD

SB

| Start Time | Bikes | Cars & Trailers | 2 Axle Long | Buses | 2 Axle 6 Tire | 3 Axle Single | 4 Axle Single | <5 Axl Double | 5 Axle Double | >6 Axl Double | <6 Axl Multi | 6 Axle Multi | >6 Axl Multi | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 06/07/1 | | | | | | | | | | | | | | |
| 7 | 0 | 45 | 7 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 54 |
| 01:00 | 0 | 17 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| 02:00 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 03:00 | 1 | 10 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 04:00 | 0 | 14 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| 05:00 | 1 | 91 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 97 |
| 06:00 | 2 | 76 | 11 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 90 |
| 07:00 | 1 | 113 | 16 | 0 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 135 |
| 08:00 | 5 | 116 | 20 | 0 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 148 |
| 09:00 | 4 | 112 | 10 | 1 | 6 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 135 |
| 10:00 | 0 | 119 | 16 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 139 |
| 11:00 | 2 | 143 | 23 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 173 |
| 12 PM | 3 | 142 | 24 | 0 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 175 |
| 13:00 | 0 | 195 | 40 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 239 |
| 14:00 | 2 | 299 | 75 | 1 | 7 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 387 |
| 15:00 | 4 | 290 | 72 | 0 | 13 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 383 |
| 16:00 | 4 | 321 | 32 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 361 |
| 17:00 | 3 | 351 | 37 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 396 |
| 18:00 | 7 | 340 | 19 | 0 | 1 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 371 |
| 19:00 | 5 | 218 | 18 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 246 |
| 20:00 | 7 | 146 | 7 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 162 |
| 21:00 | 4 | 106 | 14 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 125 |
| 22:00 | 1 | 114 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 123 |
| 23:00 | 2 | 154 | 19 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 177 |
| Total | 58 | 3540 | 478 | 4 | 74 | 10 | 0 | 9 | 1 | 0 | 0 | 0 | 0 | 4174 |
| Percent | 1.4% | 84.8% | 11.5% | 0.1% | 1.8% | 0.2% | 0.0% | 0.2% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | |
| AM Peak | 08:00 | 11:00 | 11:00 | 01:00 | 09:00 | 08:00 | | 07:00 | | | | | | 11:00 |
| Vol. | 5 | 143 | 23 | 1 | 6 | 2 | | 1 | | | | | | 173 |
| PM Peak | 18:00 | 17:00 | 14:00 | 14:00 | 15:00 | 18:00 | | 15:00 | 14:00 | | | | | 17:00 |
| Vol. | 7 | 351 | 75 | 1 | 13 | 2 | | 3 | 1 | | | | | 396 |

PRECISION
D A T A
INDUSTRIES, LLC
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L Street
south of East 8th Street
City, State: South Boston, MA
Client: VHB/C. Dube

175708 C Class
Site Code: TBD

SB

| Start Time | Bikes | Cars & Trailers | 2 Axle Long | Buses | 2 Axle 6 Tire | 3 Axle Single | 4 Axle Single | <5 Axl Double | 5 Axle Double | >6 Axl Double | <6 Axl Multi | 6 Axle Multi | >6 Axl Multi | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 06/08/1 | | | | | | | | | | | | | | |
| 7 | 0 | 129 | 15 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 146 |
| 01:00 | 1 | 47 | 9 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 58 |
| 02:00 | 0 | 21 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 |
| 03:00 | 1 | 17 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| 04:00 | 0 | 13 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| 05:00 | 1 | 53 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 58 |
| 06:00 | 4 | 72 | 11 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 89 |
| 07:00 | 1 | 113 | 9 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 124 |
| 08:00 | 0 | 130 | 18 | 2 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 160 |
| 09:00 | 4 | 103 | 16 | 1 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 132 |
| 10:00 | 1 | 110 | 27 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 144 |
| 11:00 | 7 | 131 | 23 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 166 |
| 12 PM | 1 | 172 | 38 | 1 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 219 |
| 13:00 | 5 | 198 | 44 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 255 |
| 14:00 | 7 | 292 | 57 | 1 | 13 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 371 |
| 15:00 | 1 | 275 | 62 | 0 | 11 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 352 |
| 16:00 | 7 | 371 | 47 | 0 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 435 |
| 17:00 | 7 | 294 | 40 | 0 | 3 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 349 |
| 18:00 | 8 | 291 | 29 | 0 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 334 |
| 19:00 | 8 | 241 | 10 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 260 |
| 20:00 | 5 | 147 | 9 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 165 |
| 21:00 | 4 | 170 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 187 |
| 22:00 | 4 | 242 | 22 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 271 |
| 23:00 | 5 | 139 | 13 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 158 |
| Total | 82 | 3771 | 522 | 8 | 90 | 10 | 0 | 7 | 2 | 0 | 0 | 0 | 0 | 4492 |
| Percent | 1.8% | 83.9% | 11.6% | 0.2% | 2.0% | 0.2% | 0.0% | 0.2% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | |
| AM Peak | 11:00 | 11:00 | 10:00 | 08:00 | 08:00 | 01:00 | | 00:00 | 00:00 | | | | | 11:00 |
| Vol. | 7 | 131 | 27 | 2 | 10 | 1 | | 1 | 1 | | | | | 166 |
| PM Peak | 18:00 | 16:00 | 15:00 | 12:00 | 14:00 | 17:00 | | 17:00 | 22:00 | | | | | 16:00 |
| Vol. | 8 | 371 | 62 | 1 | 13 | 2 | | 3 | 1 | | | | | 435 |

L Street
south of East 8th Street
City, State: South Boston, MA
Client: VHB/C. Dube

PRECISION
D A T A
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175708 C Class
Site Code: TBD

NB

| Start Time | Bikes | Cars & Trailers | 2 Axle Long | Buses | 2 Axle 6 Tire | 3 Axle Single | 4 Axle Single | <5 Axl Double | 5 Axle Double | >6 Axl Double | <6 Axl Multi | 6 Axle Multi | >6 Axl Multi | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 06/07/1 | | | | | | | | | | | | | | |
| 7 | 0 | 17 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| 01:00 | 0 | 10 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| 02:00 | 0 | 17 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| 03:00 | 0 | 12 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| 04:00 | 0 | 64 | 18 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 84 |
| 05:00 | 1 | 195 | 66 | 0 | 8 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 272 |
| 06:00 | 5 | 366 | 88 | 2 | 15 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 478 |
| 07:00 | 3 | 405 | 74 | 1 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 490 |
| 08:00 | 5 | 404 | 43 | 1 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 461 |
| 09:00 | 1 | 331 | 63 | 3 | 9 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 411 |
| 10:00 | 2 | 295 | 42 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 344 |
| 11:00 | 1 | 211 | 27 | 1 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 244 |
| 12 PM | 3 | 184 | 29 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 218 |
| 13:00 | 0 | 174 | 17 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 195 |
| 14:00 | 1 | 174 | 21 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 199 |
| 15:00 | 5 | 245 | 24 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 278 |
| 16:00 | 8 | 380 | 24 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 416 |
| 17:00 | 4 | 430 | 25 | 0 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 466 |
| 18:00 | 4 | 270 | 15 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 293 |
| 19:00 | 3 | 202 | 10 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 218 |
| 20:00 | 0 | 161 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 170 |
| 21:00 | 2 | 133 | 5 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 142 |
| 22:00 | 1 | 94 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 |
| 23:00 | 0 | 56 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 60 |
| Total | 49 | 4830 | 615 | 11 | 84 | 11 | 2 | 5 | 0 | 0 | 0 | 0 | 0 | 5607 |
| Percent | 0.9% | 86.1% | 11.0% | 0.2% | 1.5% | 0.2% | 0.0% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | |
| AM Peak | 06:00 | 07:00 | 06:00 | 09:00 | 06:00 | 09:00 | | 06:00 | | | | | | 07:00 |
| Vol. | 5 | 405 | 88 | 3 | 15 | 2 | | 2 | | | | | | 490 |
| PM Peak | 16:00 | 17:00 | 12:00 | 14:00 | 17:00 | 21:00 | 12:00 | | | | | | | 17:00 |
| Vol. | 8 | 430 | 29 | 1 | 6 | 2 | 1 | | | | | | | 466 |

PRECISION
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L Street
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175708 C Class
Site Code: TBD

NB

| Start Time | Bikes | Cars & Trailers | 2 Axle Long | Buses | 2 Axle 6 Tire | 3 Axle Single | 4 Axle Single | <5 Axl Double | 5 Axle Double | >6 Axl Double | <6 Axl Multi | 6 Axle Multi | >6 Axl Multi | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 06/08/1 | | | | | | | | | | | | | | |
| 7 | 0 | 39 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 42 |
| 01:00 | 0 | 22 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 27 |
| 02:00 | 0 | 20 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| 03:00 | 1 | 19 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 |
| 04:00 | 0 | 70 | 14 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 86 |
| 05:00 | 5 | 263 | 84 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 364 |
| 06:00 | 7 | 389 | 111 | 1 | 10 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 522 |
| 07:00 | 1 | 410 | 58 | 1 | 8 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 480 |
| 08:00 | 3 | 413 | 58 | 3 | 5 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 485 |
| 09:00 | 1 | 368 | 43 | 0 | 8 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 423 |
| 10:00 | 1 | 259 | 44 | 0 | 7 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 313 |
| 11:00 | 2 | 221 | 36 | 0 | 6 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 266 |
| 12 PM | 2 | 221 | 32 | 1 | 7 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 265 |
| 13:00 | 3 | 173 | 23 | 1 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 207 |
| 14:00 | 3 | 201 | 23 | 0 | 6 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 236 |
| 15:00 | 2 | 236 | 27 | 1 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 269 |
| 16:00 | 0 | 341 | 27 | 2 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 375 |
| 17:00 | 8 | 426 | 30 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 468 |
| 18:00 | 2 | 292 | 24 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 320 |
| 19:00 | 1 | 218 | 8 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 229 |
| 20:00 | 1 | 144 | 9 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 157 |
| 21:00 | 2 | 99 | 7 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 110 |
| 22:00 | 1 | 95 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 101 |
| 23:00 | 1 | 44 | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 50 |
| Total | 47 | 4983 | 676 | 10 | 94 | 14 | 6 | 8 | 1 | 0 | 0 | 0 | 0 | 5839 |
| Percent | 0.8% | 85.3% | 11.6% | 0.2% | 1.6% | 0.2% | 0.1% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | |
| AM Peak | 06:00 | 08:00 | 06:00 | 08:00 | 05:00 | 09:00 | 10:00 | 06:00 | 01:00 | | | | | 06:00 |
| Vol. | 7 | 413 | 111 | 3 | 12 | 3 | 1 | 3 | 1 | | | | | 522 |
| PM Peak | 17:00 | 17:00 | 12:00 | 16:00 | 12:00 | 14:00 | 15:00 | 14:00 | | | | | | 17:00 |
| Vol. | 8 | 426 | 32 | 2 | 7 | 2 | 2 | 1 | | | | | | 468 |

PRECISION
D A T A
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L Street
south of East 8th Street
City, State: South Boston, MA
Client: VHB/C. Dube

175708 C Speed
Site Code: TBD

SB

| Start Time | 1 14 | 15 19 | 20 24 | 25 29 | 30 34 | 35 39 | 40 44 | 45 49 | 50 54 | 55 59 | 60 64 | 65 69 | 70 9999 | Total | 85th % ile | Ave Speed |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 06/07/ 17 | 1 | 2 | 24 | 17 | **10** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 54 | 29 | 25 |
| 01:00 | 0 | 2 | 4 | 10 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 29 | 26 |
| 02:00 | 0 | 0 | 1 | 3 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 33 | 29 |
| 03:00 | 1 | 0 | 6 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 27 | 23 |
| 04:00 | 1 | 0 | 6 | 9 | 1 | **2** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 29 | 26 |
| 05:00 | 2 | 4 | 15 | **75** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 97 | 28 | 25 |
| 06:00 | 5 | 19 | 47 | 17 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 90 | 25 | 21 |
| 07:00 | 8 | 38 | 65 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 135 | 24 | 21 |
| 08:00 | **11** | **40** | 65 | 30 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 148 | 25 | 21 |
| 09:00 | 8 | 31 | 69 | 27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 135 | 25 | 21 |
| 10:00 | 3 | 13 | 82 | 41 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 139 | 26 | 23 |
| 11:00 | 8 | 23 | **101** | 36 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **173** | 26 | 22 |
| 12 PM | 3 | 25 | 100 | 42 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 175 | 26 | 23 |
| 13:00 | 4 | 23 | 137 | 69 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 239 | 26 | 23 |
| 14:00 | 19 | 56 | 192 | **110** | **10** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 387 | 26 | 22 |
| 15:00 | 14 | 92 | 204 | 64 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 383 | 25 | 21 |
| 16:00 | **56** | 56 | 186 | 57 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 361 | 24 | 20 |
| 17:00 | 39 | 106 | **215** | 35 | 0 | **1** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **396** | 23 | 20 |
| 18:00 | 33 | **142** | 177 | 18 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 371 | 22 | 19 |
| 19:00 | 18 | 75 | 128 | 24 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 246 | 23 | 20 |
| 20:00 | 22 | 48 | 75 | 15 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 162 | 23 | 19 |
| 21:00 | 8 | 27 | 63 | 26 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 125 | 25 | 21 |
| 22:00 | 12 | 37 | 51 | 22 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 123 | 25 | 20 |
| 23:00 | 5 | 26 | 94 | 43 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 177 | 26 | 23 |
| Total | 281 | 885 | 2107 | 818 | 78 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4174 | | |
| % | 6.7% | 21.2% | 50.5% | 19.6% | 1.9% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | | | |
| AM Peak | 08:00 | 08:00 | 11:00 | 05:00 | 00:00 | 04:00 | | | | | | | | 11:00 | | |
| Vol. | 11 | 40 | 101 | 75 | 10 | 2 | | | | | | | | 173 | | |
| PM Peak | 16:00 | 18:00 | 17:00 | 14:00 | 14:00 | 17:00 | | | | | | | | 17:00 | | |
| Vol. | 56 | 142 | 215 | 110 | 10 | 1 | | | | | | | | 396 | | |

Stats

| | |
|---|---|
| 15th Percentile : | 15 MPH |
| 50th Percentile : | 21 MPH |
| 85th Percentile : | 25 MPH |
| 95th Percentile : | 28 MPH |
| Mean Speed(Average) : | 21 MPH |
| 10 MPH Pace Speed : | 15-24 MPH |
| Number in Pace : | 2992 |
| Percent in Pace : | 71.7% |
| Number of Vehicles > 25 MPH : | 737 |
| Percent of Vehicles > 25 MPH : | 17.7% |

L Street
south of East 8th Street
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Client: VHB/C. Dube

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Office: 508-875-0100 Fax: 508-875-0118
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175708 C Speed
Site Code: TBD

SB

| Start Time | 1 14 | 15 19 | 20 24 | 25 29 | 30 34 | 35 39 | 40 44 | 45 49 | 50 54 | 55 59 | 60 64 | 65 69 | 70 9999 | Total | 85th % ile | Ave Speed |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 06/08/ 17 | 5 | 13 | 59 | **61** | **7** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 146 | 27 | 24 |
| 01:00 | 0 | 6 | 18 | 27 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 58 | 28 | 25 |
| 02:00 | 0 | 1 | 1 | 16 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | 30 | 27 |
| 03:00 | 0 | 1 | 3 | 12 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 30 | 27 |
| 04:00 | 0 | 1 | 4 | 8 | 1 | **2** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 31 | 27 |
| 05:00 | 3 | 5 | 35 | 11 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 58 | 26 | 23 |
| 06:00 | **8** | 16 | 50 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 89 | 24 | 21 |
| 07:00 | 1 | 27 | 70 | 25 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 124 | 25 | 22 |
| 08:00 | 4 | 25 | **88** | 42 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 160 | 26 | 22 |
| 09:00 | 5 | 29 | 70 | 25 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 132 | 25 | 22 |
| 10:00 | 1 | **46** | 70 | 23 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 144 | 25 | 21 |
| 11:00 | 6 | 39 | 84 | 33 | 3 | 0 | **1** | 0 | 0 | 0 | 0 | 0 | 0 | **166** | 25 | 22 |
| 12 PM | 13 | 53 | 118 | 34 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 219 | 24 | 21 |
| 13:00 | 8 | 64 | 147 | 33 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 255 | 23 | 21 |
| 14:00 | **43** | 118 | 172 | 36 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 371 | 23 | 19 |
| 15:00 | 33 | 88 | 188 | **40** | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 352 | 23 | 20 |
| 16:00 | 19 | 139 | **249** | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **435** | 23 | 20 |
| 17:00 | 31 | **159** | 148 | 9 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 349 | 22 | 19 |
| 18:00 | 27 | 152 | 138 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 334 | 22 | 19 |
| 19:00 | 21 | 116 | 106 | 16 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 260 | 22 | 19 |
| 20:00 | 11 | 57 | 82 | 14 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 165 | 23 | 20 |
| 21:00 | 7 | 56 | 89 | 30 | 4 | **1** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 187 | 25 | 21 |
| 22:00 | 22 | 102 | 119 | 26 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 271 | 23 | 19 |
| 23:00 | 17 | 23 | 87 | 22 | **9** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 158 | 25 | 21 |
| Total | 285 | 1336 | 2195 | 603 | 66 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4492 | | |
| % | 6.3% | 29.7% | 48.9% | 13.4% | 1.5% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | | | |
| AM Peak | 06:00 | 10:00 | 08:00 | 00:00 | 00:00 | 04:00 | 11:00 | | | | | | | 11:00 | | |
| Vol. | 8 | 46 | 88 | 61 | 7 | 2 | 1 | | | | | | | 166 | | |
| PM Peak | 14:00 | 17:00 | 16:00 | 15:00 | 23:00 | 21:00 | | | | | | | | 16:00 | | |
| Vol. | 43 | 159 | 249 | 40 | 9 | 1 | | | | | | | | 435 | | |

Stats

| | |
|---|---|
| 15th Percentile : | 15 MPH |
| 50th Percentile : | 20 MPH |
| 85th Percentile : | 24 MPH |
| 95th Percentile : | 27 MPH |
| Mean Speed(Average) : | 20 MPH |
| 10 MPH Pace Speed : | 15-24 MPH |
| Number in Pace : | 3531 |
| Percent in Pace : | 78.6% |
| Number of Vehicles > 25 MPH : | 555 |
| Percent of Vehicles > 25 MPH : | 12.4% |

PRECISION
D A T A
INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

L Street
south of East 8th Street
City, State: South Boston, MA
Client: VHB/C. Dube

175708 C Speed
Site Code: TBD

NB

| Start Time | 1 14 | 15 19 | 20 24 | 25 29 | 30 34 | 35 39 | 40 44 | 45 49 | 50 54 | 55 59 | 60 64 | 65 69 | 70 9999 | Total | 85th % ile | Ave Speed |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 06/07/ 17 | 5 | 3 | 4 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 29 | 20 |
| 01:00 | 2 | 3 | 7 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 23 | 20 |
| 02:00 | 1 | 0 | 9 | 6 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 29 | 24 |
| 03:00 | 2 | 0 | 2 | 8 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 32 | 26 |
| 04:00 | 3 | 7 | 35 | 34 | 2 | **2** | **1** | 0 | 0 | 0 | 0 | 0 | 0 | 84 | 27 | 24 |
| 05:00 | 17 | 50 | 130 | **64** | **11** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 272 | 26 | 22 |
| 06:00 | 122 | 126 | **179** | 48 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 478 | 23 | 18 |
| 07:00 | 126 | **166** | 177 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **490** | 22 | 17 |
| 08:00 | **147** | 110 | 175 | 22 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 461 | 22 | 17 |
| 09:00 | 96 | 132 | 140 | 39 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 411 | 23 | 18 |
| 10:00 | 46 | 90 | 163 | 42 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 344 | 23 | 19 |
| 11:00 | 27 | 69 | 110 | 32 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 244 | 24 | 20 |
| 12 PM | 30 | 46 | 102 | 35 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 218 | 25 | 20 |
| 13:00 | 22 | 37 | 88 | 43 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 195 | 26 | 21 |
| 14:00 | 11 | 30 | 103 | 45 | **8** | **2** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 199 | 26 | 22 |
| 15:00 | 29 | 57 | 151 | 38 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 278 | 23 | 20 |
| 16:00 | 107 | 88 | 168 | **47** | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 416 | 23 | 18 |
| 17:00 | **114** | **145** | **182** | 24 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **466** | 22 | 17 |
| 18:00 | 71 | 72 | 131 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 293 | 23 | 18 |
| 19:00 | 57 | 68 | 74 | 17 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 218 | 23 | 17 |
| 20:00 | 47 | 47 | 64 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 170 | 22 | 17 |
| 21:00 | 28 | 42 | 60 | 11 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 142 | 23 | 18 |
| 22:00 | 29 | 21 | 40 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 23 | 17 |
| 23:00 | 8 | 8 | 33 | 6 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 60 | 25 | 21 |
| Total | 1147 | 1417 | 2327 | 627 | 79 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 5607 | | |
| % | 20.5% | 25.3% | 41.5% | 11.2% | 1.4% | 0.2% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | | | |
| AM Peak | 08:00 | 07:00 | 06:00 | 05:00 | 05:00 | 04:00 | 04:00 | | | | | | | 07:00 | | |
| Vol. | 147 | 166 | 179 | 64 | 11 | 2 | 1 | | | | | | | 490 | | |
| PM Peak | 17:00 | 17:00 | 17:00 | 16:00 | 14:00 | 14:00 | | | | | | | | 17:00 | | |
| Vol. | 114 | 145 | 182 | 47 | 8 | 2 | | | | | | | | 466 | | |

Stats

| | |
|---|---|
| 15th Percentile : | 10 MPH |
| 50th Percentile : | 19 MPH |
| 85th Percentile : | 23 MPH |
| 95th Percentile : | 27 MPH |
| Mean Speed(Average) : | 18 MPH |
| 10 MPH Pace Speed : | 15-24 MPH |
| Number in Pace : | 3744 |
| Percent in Pace : | 66.8% |
| Number of Vehicles > 25 MPH : | 591 |
| Percent of Vehicles > 25 MPH : | 10.5% |

PRECISION
D A T A
INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

L Street
south of East 8th Street
City, State: South Boston, MA
Client: VHB/C. Dube

175708 C Speed
Site Code: TBD

NB

| Start Time | 1 14 | 15 19 | 20 24 | 25 29 | 30 34 | 35 39 | 40 44 | 45 49 | 50 54 | 55 59 | 60 64 | 65 69 | 70 9999 | Total | 85th % ile | Ave Speed |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 06/08/ 17 | 6 | 16 | 10 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 42 | 25 | 19 |
| 01:00 | 1 | 8 | 11 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 26 | 21 |
| 02:00 | 0 | 1 | 8 | 8 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 30 | 26 |
| 03:00 | 2 | 2 | 11 | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | 27 | 22 |
| 04:00 | 4 | 6 | 30 | 34 | **10** | **2** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 86 | 28 | 24 |
| 05:00 | 22 | 63 | 175 | **93** | 10 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 364 | 26 | 22 |
| 06:00 | 98 | **160** | **207** | 53 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **522** | 23 | 18 |
| 07:00 | **128** | 130 | 188 | 32 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 480 | 22 | 17 |
| 08:00 | 95 | 116 | 200 | 70 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 485 | 24 | 19 |
| 09:00 | 51 | 108 | 198 | 57 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 423 | 24 | 20 |
| 10:00 | 39 | 56 | 159 | 50 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 313 | 25 | 20 |
| 11:00 | 17 | 67 | 140 | 39 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 266 | 24 | 21 |
| 12 PM | 38 | 49 | 136 | **38** | **4** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 265 | 24 | 20 |
| 13:00 | 31 | 50 | 108 | 14 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 207 | 23 | 19 |
| 14:00 | 42 | 62 | 105 | 25 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 236 | 23 | 19 |
| 15:00 | 45 | 66 | 131 | 25 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 269 | 23 | 19 |
| 16:00 | 73 | 106 | 167 | 28 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 375 | 23 | 18 |
| 17:00 | **135** | **140** | **184** | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **468** | 22 | 16 |
| 18:00 | 90 | 107 | 114 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 320 | 22 | 16 |
| 19:00 | 68 | 67 | 84 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 229 | 22 | 16 |
| 20:00 | 43 | 49 | 58 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 157 | 22 | 17 |
| 21:00 | 21 | 30 | 48 | 10 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 110 | 23 | 18 |
| 22:00 | 30 | 27 | 35 | 8 | 0 | **1** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 101 | 23 | 17 |
| 23:00 | 13 | 17 | 16 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 22 | 17 |
| Total | 1092 | 1503 | 2523 | 644 | 72 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5839 | | |
| % | 18.7% | 25.7% | 43.2% | 11.0% | 1.2% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | | | |
| AM Peak | 07:00 | 06:00 | 06:00 | 05:00 | 04:00 | 04:00 | | | | | | | | 06:00 | | |
| Vol. | 128 | 160 | 207 | 93 | 10 | 2 | | | | | | | | 522 | | |
| PM Peak | 17:00 | 17:00 | 17:00 | 12:00 | 12:00 | 22:00 | | | | | | | | 17:00 | | |
| Vol. | 135 | 140 | 184 | 38 | 4 | 1 | | | | | | | | 468 | | |

Stats

| | |
|---|---|
| 15th Percentile : | 11 MPH |
| 50th Percentile : | 19 MPH |
| 85th Percentile : | 23 MPH |
| 95th Percentile : | 27 MPH |
| Mean Speed(Average) : | 19 MPH |
| 10 MPH Pace Speed : | 15-24 MPH |
| Number in Pace : | 4026 |
| Percent in Pace : | 69.0% |
| Number of Vehicles > 25 MPH : | 592 |
| Percent of Vehicles > 25 MPH : | 10.1% |

East 1st Street
east of Summer Street
City, State: South Boston, MA
Client: VHB / C. Dube

PRECISION
D A T A
INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

175708 BB Volume
Site Code: TBA

| Start | WB | | | | EB | | | | Combined | | | | 06/27/17 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Time | A.M. | | P.M. | | A.M. | | P.M. | | A.M. | | P.M. | | Tue |
| 12:00 | 5 | | 71 | | 10 | | 68 | | 15 | | 139 | | |
| 12:15 | 5 | | 59 | | 3 | | 62 | | 8 | | 121 | | |
| 12:30 | 8 | | 61 | | 2 | | 68 | | 10 | | 129 | | |
| 12:45 | 3 | 21 | 79 | 270 | 9 | 24 | 71 | 269 | 12 | 45 | 150 | 539 | |
| 01:00 | 5 | | 70 | | 0 | | 81 | | 5 | | 151 | | |
| 01:15 | 2 | | 76 | | 2 | | 61 | | 4 | | 137 | | |
| 01:30 | 2 | | 75 | | 2 | | 69 | | 4 | | 144 | | |
| 01:45 | 1 | 10 | 93 | 314 | 1 | 5 | 60 | 271 | 2 | 15 | 153 | 585 | |
| 02:00 | 0 | | 99 | | 2 | | 66 | | 2 | | 165 | | |
| 02:15 | 2 | | 88 | | 5 | | 89 | | 7 | | 177 | | |
| 02:30 | 1 | | 78 | | 3 | | 51 | | 4 | | 129 | | |
| 02:45 | 3 | 6 | 65 | 330 | 3 | 13 | 75 | 281 | 6 | 19 | 140 | 611 | |
| 03:00 | 0 | | 89 | | 3 | | 65 | | 3 | | 154 | | |
| 03:15 | 1 | | 86 | | 6 | | 73 | | 7 | | 159 | | |
| 03:30 | 1 | | 82 | | 5 | | 63 | | 6 | | 145 | | |
| 03:45 | 5 | 7 | 61 | 318 | 1 | 15 | 74 | 275 | 6 | 22 | 135 | 593 | |
| 04:00 | 1 | | 42 | | 1 | | 71 | | 2 | | 113 | | |
| 04:15 | 4 | | 80 | | 4 | | 67 | | 8 | | 147 | | |
| 04:30 | 5 | | 60 | | 5 | | 62 | | 10 | | 122 | | |
| 04:45 | 19 | 29 | 57 | 239 | 12 | 22 | 83 | 283 | 31 | 51 | 140 | 522 | |
| 05:00 | 9 | | 58 | | 12 | | 86 | | 21 | | 144 | | |
| 05:15 | 19 | | 60 | | 14 | | 107 | | 33 | | 167 | | |
| 05:30 | 35 | | 64 | | 22 | | 111 | | 57 | | 175 | | |
| 05:45 | 40 | 103 | 61 | 243 | 36 | 84 | 101 | 405 | 76 | 187 | 162 | 648 | |
| 06:00 | 39 | | 41 | | 30 | | 90 | | 69 | | 131 | | |
| 06:15 | 54 | | 59 | | 26 | | 81 | | 80 | | 140 | | |
| 06:30 | 59 | | 59 | | 47 | | 91 | | 106 | | 150 | | |
| 06:45 | 98 | 250 | 61 | 220 | 48 | 151 | 85 | 347 | 146 | 401 | 146 | 567 | |
| 07:00 | 88 | | 65 | | 56 | | 71 | | 144 | | 136 | | |
| 07:15 | 111 | | 46 | | 48 | | 59 | | 159 | | 105 | | |
| 07:30 | 134 | | 37 | | 58 | | 72 | | 192 | | 109 | | |
| 07:45 | 131 | 464 | 33 | 181 | 53 | 215 | 54 | 256 | 184 | 679 | 87 | 437 | |
| 08:00 | 112 | | 48 | | 70 | | 48 | | 182 | | 96 | | |
| 08:15 | 120 | | 35 | | 49 | | 43 | | 169 | | 78 | | |
| 08:30 | 113 | | 40 | | 47 | | 39 | | 160 | | 79 | | |
| 08:45 | 99 | 444 | 48 | 171 | 46 | 212 | 32 | 162 | 145 | 656 | 80 | 333 | |
| 09:00 | 116 | | 44 | | 51 | | 25 | | 167 | | 69 | | |
| 09:15 | 81 | | 16 | | 45 | | 32 | | 126 | | 48 | | |
| 09:30 | 88 | | 16 | | 50 | | 27 | | 138 | | 43 | | |
| 09:45 | 56 | 341 | 26 | 102 | 37 | 183 | 24 | 108 | 93 | 524 | 50 | 210 | |
| 10:00 | 67 | | 22 | | 55 | | 20 | | 122 | | 42 | | |
| 10:15 | 50 | | 11 | | 54 | | 18 | | 104 | | 29 | | |
| 10:30 | 80 | | 17 | | 66 | | 20 | | 146 | | 37 | | |
| 10:45 | 64 | 261 | 19 | 69 | 62 | 237 | 15 | 73 | 126 | 498 | 34 | 142 | |
| 11:00 | 61 | | 12 | | 54 | | 16 | | 115 | | 28 | | |
| 11:15 | 73 | | 13 | | 58 | | 8 | | 131 | | 21 | | |
| 11:30 | 87 | | 8 | | 60 | | 13 | | 147 | | 21 | | |
| 11:45 | 95 | 316 | 11 | 44 | 50 | 222 | 8 | 45 | 145 | 538 | 19 | 89 | |
| Total | 2252 | | 2501 | | 1383 | | 2775 | | 3635 | | 5276 | | |
| Percent | 62.0% | | 47.4% | | 38.0% | | 52.6% | | | | | | |
| Day Total | | 4753 | | | | 4158 | | | | 8911 | | | |
| Peak | 07:30 | - | 01:45 | - | 10:30 | - | 05:15 | - | 07:30 | - | 05:00 | - | - | - |
| Vol. | 497 | - | 358 | - | 240 | - | 409 | - | 727 | - | 648 | - | - | - |
| P.H.F. | 0.927 | | 0.904 | | 0.909 | | 0.921 | | 0.947 | | 0.915 | | | |

East 1st Street
east of Summer Street
City, State: South Boston, MA
Client: VHB / C. Dube

PRECISION
D A T A
INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

175708 BB Volume
Site Code: TBA

| Start | WB | | | | EB | | | | Combined | | | | 06/28/17 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Time | A.M. | | P.M. | | A.M. | | P.M. | | A.M. | | P.M. | | Wed |
| 12:00 | 9 | | 80 | | 8 | | 81 | | 17 | | 161 | | |
| 12:15 | 1 | | 97 | | 6 | | 72 | | 7 | | 169 | | |
| 12:30 | 4 | | 74 | | 9 | | 65 | | 13 | | 139 | | |
| 12:45 | 3 | 17 | 94 | 345 | 7 | 30 | 61 | 279 | 10 | 47 | 155 | 624 | |
| 01:00 | 5 | | 113 | | 5 | | 57 | | 10 | | 170 | | |
| 01:15 | 3 | | 91 | | 10 | | 67 | | 13 | | 158 | | |
| 01:30 | 0 | | 77 | | 1 | | 80 | | 1 | | 157 | | |
| 01:45 | 5 | 13 | 81 | 362 | 2 | 18 | 72 | 276 | 7 | 31 | 153 | 638 | |
| 02:00 | 4 | | 78 | | 3 | | 61 | | 7 | | 139 | | |
| 02:15 | 0 | | 98 | | 4 | | 69 | | 4 | | 167 | | |
| 02:30 | 1 | | 81 | | 3 | | 71 | | 4 | | 152 | | |
| 02:45 | 0 | 5 | 89 | 346 | 2 | 12 | 68 | 269 | 2 | 17 | 157 | 615 | |
| 03:00 | 2 | | 80 | | 2 | | 90 | | 4 | | 170 | | |
| 03:15 | 2 | | 69 | | 2 | | 81 | | 4 | | 150 | | |
| 03:30 | 1 | | 80 | | 4 | | 63 | | 5 | | 143 | | |
| 03:45 | 2 | 7 | 83 | 312 | 0 | 8 | 77 | 311 | 2 | 15 | 160 | 623 | |
| 04:00 | 4 | | 70 | | 2 | | 67 | | 6 | | 137 | | |
| 04:15 | 4 | | 77 | | 3 | | 67 | | 7 | | 144 | | |
| 04:30 | 7 | | 51 | | 8 | | 60 | | 15 | | 111 | | |
| 04:45 | 14 | 29 | 60 | 258 | 13 | 26 | 68 | 262 | 27 | 55 | 128 | 520 | |
| 05:00 | 11 | | 58 | | 17 | | 72 | | 28 | | 130 | | |
| 05:15 | 17 | | 68 | | 15 | | 99 | | 32 | | 167 | | |
| 05:30 | 50 | | 60 | | 25 | | 106 | | 75 | | 166 | | |
| 05:45 | 30 | 108 | 70 | 256 | 30 | 87 | 95 | 372 | 60 | 195 | 165 | 628 | |
| 06:00 | 53 | | 58 | | 34 | | 99 | | 87 | | 157 | | |
| 06:15 | 63 | | 82 | | 41 | | 97 | | 104 | | 179 | | |
| 06:30 | 70 | | 72 | | 57 | | 90 | | 127 | | 162 | | |
| 06:45 | 82 | 268 | 71 | 283 | 55 | 187 | 84 | 370 | 137 | 455 | 155 | 653 | |
| 07:00 | 104 | | 60 | | 64 | | 85 | | 168 | | 145 | | |
| 07:15 | 109 | | 66 | | 47 | | 71 | | 156 | | 137 | | |
| 07:30 | 129 | | 67 | | 60 | | 86 | | 189 | | 153 | | |
| 07:45 | 130 | 472 | 52 | 245 | 69 | 240 | 66 | 308 | 199 | 712 | 118 | 553 | |
| 08:00 | 139 | | 55 | | 61 | | 51 | | 200 | | 106 | | |
| 08:15 | 102 | | 44 | | 63 | | 52 | | 165 | | 96 | | |
| 08:30 | 130 | | 50 | | 39 | | 56 | | 169 | | 106 | | |
| 08:45 | 104 | 475 | 34 | 183 | 54 | 217 | 46 | 205 | 158 | 692 | 80 | 388 | |
| 09:00 | 97 | | 34 | | 42 | | 37 | | 139 | | 71 | | |
| 09:15 | 100 | | 38 | | 48 | | 37 | | 148 | | 75 | | |
| 09:30 | 86 | | 35 | | 68 | | 49 | | 154 | | 84 | | |
| 09:45 | 62 | 345 | 43 | 150 | 59 | 217 | 27 | 150 | 121 | 562 | 70 | 300 | |
| 10:00 | 82 | | 32 | | 47 | | 26 | | 129 | | 58 | | |
| 10:15 | 66 | | 22 | | 56 | | 36 | | 122 | | 58 | | |
| 10:30 | 72 | | 38 | | 53 | | 27 | | 125 | | 65 | | |
| 10:45 | 71 | 291 | 35 | 127 | 60 | 216 | 28 | 117 | 131 | 507 | 63 | 244 | |
| 11:00 | 93 | | 21 | | 67 | | 23 | | 160 | | 44 | | |
| 11:15 | 62 | | 16 | | 89 | | 16 | | 151 | | 32 | | |
| 11:30 | 92 | | 14 | | 82 | | 15 | | 174 | | 29 | | |
| 11:45 | 72 | 319 | 9 | 60 | 62 | 300 | 10 | 64 | 134 | 619 | 19 | 124 | |
| Total | 2349 | | 2927 | | 1558 | | 2983 | | 3907 | | 5910 | | |
| Percent | 60.1% | | 49.5% | | 39.9% | | 50.5% | | | | | | |
| Day Total | | 5276 | | | | 4541 | | | | 9817 | | | |
| Peak | 07:15 | - | 00:15 | - | 11:00 | - | 05:15 | - | 07:30 | - | 05:30 | - | - - |
| Vol. | 507 | - | 378 | - | 300 | - | 399 | - | 753 | - | 667 | - | - - |
| P.H.F. | 0.912 | | 0.836 | | 0.843 | | 0.941 | | 0.941 | | 0.932 | | |

East 1st Street
east of Summer Street
City, State: South Boston, MA
Client: VHB / C. Dube

PRECISION
D A T A
INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

175708 BB Class
Site Code: TBA

WB

| Start Time | Bikes | Cars & Trailers | 2 Axle Long | Buses | 2 Axle 6 Tire | 3 Axle Single | 4 Axle Single | <5 Axl Double | 5 Axle Double | >6 Axl Double | <6 Axl Multi | 6 Axle Multi | >6 Axl Multi | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 06/27/1 | | | | | | | | | | | | | | |
| 7 | 0 | 15 | 4 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| 01:00 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 02:00 | 0 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 03:00 | 0 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 04:00 | 1 | 23 | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 |
| 05:00 | 1 | 80 | 14 | 0 | 7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 103 |
| 06:00 | 8 | 212 | 24 | 0 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 250 |
| 07:00 | 11 | 402 | 38 | 3 | 7 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 464 |
| 08:00 | 26 | 352 | 27 | 4 | 12 | 10 | 2 | 2 | 9 | 0 | 0 | 0 | 0 | 444 |
| 09:00 | 69 | 197 | 22 | 8 | 5 | 24 | 3 | 0 | 13 | 0 | 0 | 0 | 0 | 341 |
| 10:00 | 38 | 151 | 25 | 6 | 8 | 20 | 0 | 0 | 12 | 1 | 0 | 0 | 0 | 261 |
| 11:00 | 47 | 195 | 21 | 2 | 10 | 16 | 1 | 0 | 24 | 0 | 0 | 0 | 0 | 316 |
| 12 PM | 32 | 170 | 19 | 4 | 8 | 11 | 1 | 1 | 24 | 0 | 0 | 0 | 0 | 270 |
| 13:00 | 36 | 189 | 24 | 4 | 12 | 16 | 1 | 0 | 28 | 4 | 0 | 0 | 0 | 314 |
| 14:00 | 45 | 202 | 41 | 2 | 10 | 9 | 1 | 0 | 18 | 2 | 0 | 0 | 0 | 330 |
| 15:00 | 44 | 198 | 24 | 4 | 7 | 17 | 4 | 1 | 15 | 4 | 0 | 0 | 0 | 318 |
| 16:00 | 15 | 171 | 32 | 4 | 3 | 9 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 239 |
| 17:00 | 10 | 195 | 20 | 11 | 4 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 243 |
| 18:00 | 6 | 177 | 21 | 13 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 220 |
| 19:00 | 4 | 154 | 8 | 8 | 5 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 181 |
| 20:00 | 1 | 144 | 21 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 171 |
| 21:00 | 5 | 91 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 102 |
| 22:00 | 0 | 57 | 4 | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 69 |
| 23:00 | 0 | 35 | 5 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 44 |
| Total | 399 | 3431 | 405 | 82 | 116 | 136 | 14 | 8 | 151 | 11 | 0 | 0 | 0 | 4753 |
| Percent | 8.4% | 72.2% | 8.5% | 1.7% | 2.4% | 2.9% | 0.3% | 0.2% | 3.2% | 0.2% | 0.0% | 0.0% | 0.0% | |
| AM Peak | 09:00 | 07:00 | 07:00 | 09:00 | 08:00 | 09:00 | 09:00 | 08:00 | 11:00 | 10:00 | | | | 07:00 |
| Vol. | 69 | 402 | 38 | 8 | 12 | 24 | 3 | 2 | 24 | 1 | | | | 464 |
| PM Peak | 14:00 | 14:00 | 14:00 | 18:00 | 13:00 | 15:00 | 15:00 | 12:00 | 13:00 | 13:00 | | | | 14:00 |
| Vol. | 45 | 202 | 41 | 13 | 12 | 17 | 4 | 1 | 28 | 4 | | | | 330 |

East 1st Street
east of Summer Street
City, State: South Boston, MA
Client: VHB / C. Dube

PRECISION
D A T A
INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

175708 BB Class
Site Code: TBA

WB

| Start Time | Bikes | Cars & Trailers | 2 Axle Long | Buses | 2 Axle 6 Tire | 3 Axle Single | 4 Axle Single | <5 Axl Double | 5 Axle Double | >6 Axl Double | <6 Axl Multi | 6 Axle Multi | >6 Axl Multi | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 06/28/1 | | | | | | | | | | | | | | |
| 7 | 0 | 15 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| 01:00 | 0 | 10 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| 02:00 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 03:00 | 0 | 5 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 04:00 | 0 | 23 | 4 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 |
| 05:00 | 0 | 81 | 19 | 0 | 7 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 108 |
| 06:00 | 14 | 201 | 37 | 0 | 13 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 268 |
| 07:00 | 9 | 413 | 30 | 1 | 12 | 5 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 472 |
| 08:00 | 18 | 396 | 34 | 2 | 14 | 6 | 0 | 0 | 4 | 1 | 0 | 0 | 0 | 475 |
| 09:00 | 64 | 209 | 17 | 8 | 11 | 25 | 1 | 0 | 8 | 2 | 0 | 0 | 0 | 345 |
| 10:00 | 38 | 176 | 30 | 3 | 4 | 18 | 1 | 1 | 17 | 3 | 0 | 0 | 0 | 291 |
| 11:00 | 39 | 203 | 30 | 2 | 12 | 15 | 1 | 0 | 17 | 0 | 0 | 0 | 0 | 319 |
| 12 PM | 42 | 234 | 37 | 2 | 7 | 10 | 1 | 0 | 12 | 0 | 0 | 0 | 0 | 345 |
| 13:00 | 42 | 241 | 29 | 5 | 13 | 18 | 1 | 2 | 10 | 1 | 0 | 0 | 0 | 362 |
| 14:00 | 44 | 226 | 30 | 6 | 5 | 21 | 2 | 1 | 11 | 0 | 0 | 0 | 0 | 346 |
| 15:00 | 24 | 229 | 25 | 0 | 7 | 12 | 1 | 0 | 11 | 2 | 0 | 0 | 1 | 312 |
| 16:00 | 16 | 197 | 16 | 6 | 6 | 9 | 0 | 0 | 6 | 2 | 0 | 0 | 0 | 258 |
| 17:00 | 5 | 215 | 23 | 7 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 256 |
| 18:00 | 11 | 239 | 18 | 11 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 283 |
| 19:00 | 7 | 217 | 11 | 8 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 245 |
| 20:00 | 4 | 166 | 9 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 183 |
| 21:00 | 1 | 135 | 12 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 150 |
| 22:00 | 0 | 115 | 8 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 127 |
| 23:00 | 0 | 52 | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 60 |
| Total | 378 | 4003 | 427 | 71 | 126 | 146 | 9 | 8 | 96 | 11 | 0 | 0 | 1 | 5276 |
| Percent | 7.2% | 75.9% | 8.1% | 1.3% | 2.4% | 2.8% | 0.2% | 0.2% | 1.8% | 0.2% | 0.0% | 0.0% | 0.0% | |
| AM Peak | 09:00 | 07:00 | 06:00 | 09:00 | 08:00 | 09:00 | 09:00 | 07:00 | 10:00 | 10:00 | | | | 08:00 |
| Vol. | 64 | 413 | 37 | 8 | 14 | 25 | 1 | 2 | 17 | 3 | | | | 475 |
| PM Peak | 14:00 | 13:00 | 12:00 | 18:00 | 13:00 | 14:00 | 14:00 | 13:00 | 12:00 | 15:00 | | | 15:00 | 13:00 |
| Vol. | 44 | 241 | 37 | 11 | 13 | 21 | 2 | 2 | 12 | 2 | | | 1 | 362 |

East 1st Street
east of Summer Street
City, State: South Boston, MA
Client: VHB / C. Dube

PRECISION
D A T A
INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

175708 BB Class
Site Code: TBA

EB

| Start Time | Bikes | Cars & Trailers | 2 Axle Long | Buses | 2 Axle 6 Tire | 3 Axle Single | 4 Axle Single | <5 Axl Double | 5 Axle Double | >6 Axl Double | <6 Axl Multi | 6 Axle Multi | >6 Axl Multi | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 06/27/1 | | | | | | | | | | | | | | |
| 7 | 0 | 16 | 5 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 |
| 01:00 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 02:00 | 0 | 8 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| 03:00 | 0 | 7 | 5 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| 04:00 | 1 | 10 | 3 | 3 | 3 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 22 |
| 05:00 | 1 | 43 | 13 | 9 | 15 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 84 |
| 06:00 | 4 | 73 | 33 | 17 | 11 | 2 | 0 | 1 | 8 | 2 | 0 | 0 | 0 | 151 |
| 07:00 | 8 | 125 | 15 | 28 | 17 | 7 | 0 | 1 | 14 | 0 | 0 | 0 | 0 | 215 |
| 08:00 | 17 | 122 | 10 | 23 | 11 | 11 | 1 | 0 | 16 | 1 | 0 | 0 | 0 | 212 |
| 09:00 | 17 | 82 | 25 | 6 | 12 | 15 | 0 | 0 | 22 | 4 | 0 | 0 | 0 | 183 |
| 10:00 | 7 | 121 | 17 | 16 | 15 | 5 | 1 | 3 | 48 | 4 | 0 | 0 | 0 | 237 |
| 11:00 | 12 | 115 | 29 | 4 | 12 | 8 | 0 | 1 | 37 | 4 | 0 | 0 | 0 | 222 |
| 12 PM | 14 | 140 | 36 | 6 | 13 | 13 | 0 | 1 | 40 | 6 | 0 | 0 | 0 | 269 |
| 13:00 | 11 | 143 | 35 | 5 | 16 | 14 | 3 | 4 | 38 | 2 | 0 | 0 | 0 | 271 |
| 14:00 | 19 | 151 | 31 | 6 | 28 | 14 | 1 | 1 | 28 | 2 | 0 | 0 | 0 | 281 |
| 15:00 | 12 | 187 | 36 | 5 | 17 | 3 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 275 |
| 16:00 | 10 | 196 | 48 | 4 | 17 | 3 | 0 | 3 | 2 | 0 | 0 | 0 | 0 | 283 |
| 17:00 | 8 | 307 | 72 | 3 | 11 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 405 |
| 18:00 | 3 | 279 | 52 | 4 | 6 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 347 |
| 19:00 | 2 | 195 | 46 | 2 | 8 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 256 |
| 20:00 | 1 | 134 | 23 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 162 |
| 21:00 | 0 | 86 | 14 | 1 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 108 |
| 22:00 | 0 | 57 | 10 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 73 |
| 23:00 | 0 | 38 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 45 |
| Total | 147 | 2639 | 569 | 146 | 233 | 102 | 7 | 18 | 271 | 26 | 0 | 0 | 0 | 4158 |
| Percent | 3.5% | 63.5% | 13.7% | 3.5% | 5.6% | 2.5% | 0.2% | 0.4% | 6.5% | 0.6% | 0.0% | 0.0% | 0.0% | |
| AM Peak | 08:00 | 07:00 | 06:00 | 07:00 | 07:00 | 09:00 | 08:00 | 10:00 | 10:00 | 09:00 | | | | 10:00 |
| Vol. | 17 | 125 | 33 | 28 | 17 | 15 | 1 | 3 | 48 | 4 | | | | 237 |
| PM Peak | 14:00 | 17:00 | 17:00 | 12:00 | 14:00 | 13:00 | 13:00 | 13:00 | 12:00 | 12:00 | | | | 17:00 |
| Vol. | 19 | 307 | 72 | 6 | 28 | 14 | 3 | 4 | 40 | 6 | | | | 405 |

East 1st Street
east of Summer Street
City, State: South Boston, MA
Client: VHB / C. Dube

PRECISION
D A T A
INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

175708 BB Class
Site Code: TBA

EB

| Start Time | Bikes | Cars & Trailers | 2 Axle Long | Buses | 2 Axle 6 Tire | 3 Axle Single | 4 Axle Single | <5 Axl Double | 5 Axle Double | >6 Axl Double | <6 Axl Multi | 6 Axle Multi | >6 Axl Multi | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 06/28/1 | | | | | | | | | | | | | | |
| 7 | 0 | 26 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 |
| 01:00 | 2 | 12 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| 02:00 | 0 | 8 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 03:00 | 0 | 4 | 2 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 04:00 | 1 | 11 | 5 | 4 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 |
| 05:00 | 1 | 40 | 13 | 8 | 18 | 1 | 0 | 1 | 3 | 2 | 0 | 0 | 0 | 87 |
| 06:00 | 7 | 92 | 32 | 22 | 18 | 7 | 0 | 1 | 7 | 1 | 0 | 0 | 0 | 187 |
| 07:00 | 5 | 133 | 29 | 29 | 15 | 6 | 1 | 0 | 19 | 2 | 0 | 0 | 1 | 240 |
| 08:00 | 9 | 111 | 32 | 29 | 12 | 10 | 0 | 1 | 12 | 1 | 0 | 0 | 0 | 217 |
| 09:00 | 10 | 106 | 24 | 11 | 16 | 14 | 2 | 2 | 28 | 4 | 0 | 0 | 0 | 217 |
| 10:00 | 14 | 102 | 32 | 8 | 18 | 8 | 0 | 2 | 28 | 4 | 0 | 0 | 0 | 216 |
| 11:00 | 14 | 163 | 46 | 7 | 22 | 15 | 0 | 2 | 28 | 2 | 0 | 0 | 1 | 300 |
| 12 PM | 18 | 167 | 34 | 6 | 12 | 12 | 0 | 2 | 23 | 5 | 0 | 0 | 0 | 279 |
| 13:00 | 21 | 145 | 38 | 5 | 20 | 13 | 0 | 0 | 33 | 1 | 0 | 0 | 0 | 276 |
| 14:00 | 15 | 151 | 45 | 7 | 20 | 9 | 0 | 3 | 14 | 5 | 0 | 0 | 0 | 269 |
| 15:00 | 15 | 193 | 48 | 4 | 21 | 9 | 1 | 4 | 15 | 1 | 0 | 0 | 0 | 311 |
| 16:00 | 4 | 193 | 46 | 5 | 13 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 262 |
| 17:00 | 5 | 289 | 60 | 3 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 372 |
| 18:00 | 9 | 302 | 42 | 1 | 12 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 370 |
| 19:00 | 6 | 260 | 34 | 2 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 308 |
| 20:00 | 2 | 160 | 35 | 1 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 205 |
| 21:00 | 1 | 123 | 21 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 150 |
| 22:00 | 0 | 96 | 17 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 117 |
| 23:00 | 2 | 47 | 11 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 64 |
| Total | 161 | 2934 | 655 | 158 | 258 | 109 | 7 | 19 | 210 | 28 | 0 | 0 | 2 | 4541 |
| Percent | 3.5% | 64.6% | 14.4% | 3.5% | 5.7% | 2.4% | 0.2% | 0.4% | 4.6% | 0.6% | 0.0% | 0.0% | 0.0% | |
| AM Peak | 10:00 | 11:00 | 11:00 | 07:00 | 11:00 | 11:00 | 09:00 | 09:00 | 09:00 | 09:00 | | | 07:00 | 11:00 |
| Vol. | 14 | 163 | 46 | 29 | 22 | 15 | 2 | 2 | 28 | 4 | | | 1 | 300 |
| PM Peak | 13:00 | 18:00 | 17:00 | 14:00 | 15:00 | 13:00 | 15:00 | 15:00 | 13:00 | 12:00 | | | | 17:00 |
| Vol. | 21 | 302 | 60 | 7 | 21 | 13 | 1 | 4 | 33 | 5 | | | | 372 |

East 1st Street
east of Summer Street
City, State: South Boston, MA
Client: VHB / C. Dube

PRECISION
D A T A
INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

175708 BB Speed
Site Code: TBA

WB

| Start Time | 1 14 | 15 19 | 20 24 | 25 29 | 30 34 | 35 39 | 40 44 | 45 49 | 50 54 | 55 59 | 60 64 | 65 69 | 70 9999 | Total | 85th % ile | Ave Speed |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 06/27/ 17 | 0 | 3 | 13 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 26 | 23 |
| 01:00 | 0 | 1 | 7 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 25 | 23 |
| 02:00 | 0 | 2 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 29 | 23 |
| 03:00 | 0 | 1 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 31 | 26 |
| 04:00 | 1 | 1 | 8 | 14 | 3 | **2** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | 30 | 26 |
| 05:00 | 2 | 8 | 36 | 41 | 14 | 1 | **1** | 0 | 0 | 0 | 0 | 0 | 0 | 103 | 29 | 25 |
| 06:00 | 5 | 33 | 114 | 75 | **21** | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 250 | 28 | 24 |
| 07:00 | 76 | **140** | **160** | **78** | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **464** | 25 | 19 |
| 08:00 | 169 | 108 | 150 | 13 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 444 | 22 | 16 |
| 09:00 | **177** | 38 | 124 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 341 | 22 | 14 |
| 10:00 | 115 | 53 | 83 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 261 | 22 | 15 |
| 11:00 | 102 | 61 | 134 | 16 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 316 | 22 | 17 |
| 12 PM | 99 | 61 | 100 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 270 | 22 | 16 |
| 13:00 | 115 | 73 | 114 | 11 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 314 | 22 | 16 |
| 14:00 | 122 | 60 | **135** | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **330** | 22 | 16 |
| 15:00 | **133** | 48 | 121 | 14 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 318 | 22 | 15 |
| 16:00 | 42 | 59 | 109 | 26 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 239 | 23 | 19 |
| 17:00 | 24 | 60 | 129 | 28 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 243 | 23 | 20 |
| 18:00 | 18 | **77** | 89 | **32** | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 220 | 24 | 20 |
| 19:00 | 10 | 60 | 84 | 21 | 5 | **1** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 181 | 23 | 20 |
| 20:00 | 13 | 48 | 80 | 26 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 171 | 24 | 20 |
| 21:00 | 7 | 21 | 55 | 16 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 102 | 25 | 21 |
| 22:00 | 3 | 9 | 36 | 18 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 69 | 26 | 23 |
| 23:00 | 0 | 3 | 17 | 16 | **8** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 44 | 29 | 25 |
| Total | 1233 | 1028 | 1902 | 487 | 93 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4753 | | |
| % | 25.9% | 21.6% | 40.0% | 10.2% | 2.0% | 0.2% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | | | |
| AM Peak | 09:00 | 07:00 | 07:00 | 07:00 | 06:00 | 04:00 | 05:00 | | | | | | | 07:00 | | |
| Vol. | 177 | 140 | 160 | 78 | 21 | 2 | 1 | | | | | | | 464 | | |
| PM Peak | 15:00 | 18:00 | 14:00 | 18:00 | 23:00 | 19:00 | | | | | | | | 14:00 | | |
| Vol. | 133 | 77 | 135 | 32 | 8 | 1 | | | | | | | | 330 | | |

Stats

| | |
|---|---|
| 15th Percentile : | 8 MPH |
| 50th Percentile : | 19 MPH |
| 85th Percentile : | 23 MPH |
| 95th Percentile : | 27 MPH |
| Mean Speed(Average) : | 18 MPH |
| 10 MPH Pace Speed : | 15-24 MPH |
| Number in Pace : | 2930 |
| Percent in Pace : | 61.6% |
| Number of Vehicles > 25 MPH : | 493 |
| Percent of Vehicles > 25 MPH : | 10.4% |

East 1st Street
east of Summer Street
City, State: South Boston, MA
Client: VHB / C. Dube

PRECISION
D A T A
INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

175708 BB Speed
Site Code: TBA

WB

| Start Time | 1 14 | 15 19 | 20 24 | 25 29 | 30 34 | 35 39 | 40 44 | 45 49 | 50 54 | 55 59 | 60 64 | 65 69 | 70 9999 | Total | 85th % ile | Ave Speed |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 06/28/ 17 | 1 | 1 | 7 | 5 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 29 | 24 |
| 01:00 | 1 | 2 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 27 | 22 |
| 02:00 | 0 | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 27 | 25 |
| 03:00 | 0 | 0 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 23 | 23 |
| 04:00 | 1 | 3 | 7 | 11 | 5 | **2** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | 31 | 26 |
| 05:00 | 2 | 12 | 46 | 36 | **12** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 108 | 28 | 24 |
| 06:00 | 11 | 50 | 123 | **72** | 11 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 268 | 27 | 22 |
| 07:00 | 118 | **128** | 168 | 47 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 472 | 23 | 18 |
| 08:00 | 149 | 77 | **206** | 39 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **475** | 23 | 17 |
| 09:00 | **176** | 34 | 128 | 5 | 1 | 0 | **1** | 0 | 0 | 0 | 0 | 0 | 0 | 345 | 22 | 14 |
| 10:00 | 84 | 75 | 111 | 15 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 291 | 22 | 17 |
| 11:00 | 123 | 68 | 115 | 11 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 319 | 22 | 16 |
| 12 PM | 149 | 44 | **144** | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 345 | 22 | 15 |
| 13:00 | **162** | 60 | 134 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **362** | 22 | 15 |
| 14:00 | 138 | 60 | 130 | 16 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 346 | 22 | 16 |
| 15:00 | 87 | **86** | 104 | 33 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 312 | 23 | 17 |
| 16:00 | 59 | 42 | 114 | **39** | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 258 | 24 | 19 |
| 17:00 | 21 | 59 | 137 | 34 | **5** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 256 | 24 | 21 |
| 18:00 | 58 | 78 | 121 | 25 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 283 | 23 | 18 |
| 19:00 | 34 | 80 | 100 | 26 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 245 | 23 | 19 |
| 20:00 | 12 | 48 | 92 | 26 | 4 | **1** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 183 | 24 | 21 |
| 21:00 | 8 | 37 | 75 | 26 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 150 | 25 | 21 |
| 22:00 | 6 | 37 | 62 | 19 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 127 | 24 | 21 |
| 23:00 | 2 | 10 | 29 | 17 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 60 | 26 | 22 |
| Total | 1402 | 1091 | 2166 | 524 | 87 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 5276 | | |
| % | 26.6% | 20.7% | 41.1% | 9.9% | 1.6% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | | | |
| AM Peak | 09:00 | 07:00 | 08:00 | 06:00 | 05:00 | 04:00 | 09:00 | | | | | | | 08:00 | | |
| Vol. | 176 | 128 | 206 | 72 | 12 | 2 | 1 | | | | | | | 475 | | |
| PM Peak | 13:00 | 15:00 | 12:00 | 16:00 | 17:00 | 20:00 | | | | | | | | 13:00 | | |
| Vol. | 162 | 86 | 144 | 39 | 5 | 1 | | | | | | | | 362 | | |

Stats

| | |
|---|---|
| 15th Percentile : | 7 MPH |
| 50th Percentile : | 19 MPH |
| 85th Percentile : | 23 MPH |
| 95th Percentile : | 27 MPH |
| Mean Speed(Average) : | 18 MPH |
| 10 MPH Pace Speed : | 15-24 MPH |
| Number in Pace : | 3257 |
| Percent in Pace : | 61.7% |
| Number of Vehicles > 25 MPH : | 512 |
| Percent of Vehicles > 25 MPH : | 9.7% |

East 1st Street
east of Summer Street
City, State: South Boston, MA
Client: VHB / C. Dube

PRECISION
D A T A
INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

175708 BB Speed
Site Code: TBA

EB

| Start Time | 1 14 | 15 19 | 20 24 | 25 29 | 30 34 | 35 39 | 40 44 | 45 49 | 50 54 | 55 59 | 60 64 | 65 69 | 70 9999 | Total | 85th % ile | Ave Speed |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 06/27/ 17 | 0 | 0 | 5 | 12 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | 31 | 28 |
| 01:00 | 0 | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 27 | 25 |
| 02:00 | 0 | 1 | 5 | 4 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 31 | 26 |
| 03:00 | 0 | 2 | 3 | 5 | 3 | **2** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 33 | 27 |
| 04:00 | 2 | 2 | 5 | 7 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | 31 | 25 |
| 05:00 | 2 | 8 | 23 | 38 | **12** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 84 | 29 | 25 |
| 06:00 | 2 | 34 | 61 | 47 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 151 | 27 | 23 |
| 07:00 | 15 | 32 | **109** | **50** | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 215 | 26 | 22 |
| 08:00 | 32 | 56 | 104 | 16 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 212 | 23 | 19 |
| 09:00 | **49** | 57 | 59 | 16 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 183 | 23 | 17 |
| 10:00 | 22 | **89** | 94 | 28 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **237** | 23 | 20 |
| 11:00 | 16 | 74 | 80 | 46 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 222 | 26 | 21 |
| 12 PM | 38 | 88 | 109 | 29 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 269 | 23 | 19 |
| 13:00 | **52** | **89** | 100 | 26 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 271 | 23 | 18 |
| 14:00 | 37 | 83 | 111 | 40 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 281 | 24 | 20 |
| 15:00 | 18 | 55 | 126 | 60 | 14 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 275 | 26 | 22 |
| 16:00 | 8 | 24 | 97 | 101 | **51** | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 283 | 30 | 25 |
| 17:00 | 5 | 23 | **173** | **165** | 38 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **405** | 28 | 25 |
| 18:00 | 5 | 29 | 153 | 129 | 27 | **4** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 347 | 28 | 24 |
| 19:00 | 2 | 24 | 89 | 115 | 25 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 256 | 28 | 25 |
| 20:00 | 1 | 10 | 46 | 78 | 22 | 4 | 0 | **1** | 0 | 0 | 0 | 0 | 0 | 162 | 29 | 26 |
| 21:00 | 2 | 8 | 34 | 43 | 19 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 108 | 30 | 25 |
| 22:00 | 0 | 2 | 24 | 33 | 11 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 73 | 30 | 26 |
| 23:00 | 0 | 2 | 9 | 20 | 13 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 45 | 31 | 27 |
| Total | 308 | 792 | 1621 | 1111 | 296 | 29 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 4158 | | |
| % | 7.4% | 19.0% | 39.0% | 26.7% | 7.1% | 0.7% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | | | |
| AM Peak | 09:00 | 10:00 | 07:00 | 07:00 | 05:00 | 03:00 | | | | | | | | 10:00 | | |
| Vol. | 49 | 89 | 109 | 50 | 12 | 2 | | | | | | | | 237 | | |
| PM Peak | 13:00 | 13:00 | 17:00 | 17:00 | 16:00 | 18:00 | | 20:00 | | | | | | 17:00 | | |
| Vol. | 52 | 89 | 173 | 165 | 51 | 4 | | 1 | | | | | | 405 | | |

Stats

| | |
|---|---|
| 15th Percentile : | 15 MPH |
| 50th Percentile : | 22 MPH |
| 85th Percentile : | 27 MPH |
| 95th Percentile : | 30 MPH |
| Mean Speed(Average) : | 22 MPH |
| 10 MPH Pace Speed : | 20-29 MPH |
| Number in Pace : | 2732 |
| Percent in Pace : | 65.7% |
| Number of Vehicles > 25 MPH : | 1215 |
| Percent of Vehicles > 25 MPH : | 29.2% |

PRECISION
D A T A
INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

East 1st Street
east of Summer Street
City, State: South Boston, MA
Client: VHB / C. Dube

175708 BB Speed
Site Code: TBA

EB

| Start Time | 1 14 | 15 19 | 20 24 | 25 29 | 30 34 | 35 39 | 40 44 | 45 49 | 50 54 | 55 59 | 60 64 | 65 69 | 70 9999 | Total | 85th % ile | Ave Speed |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 06/28/ 17 | 0 | 0 | 11 | 10 | 8 | 0 | **1** | 0 | 0 | 0 | 0 | 0 | 0 | 30 | 31 | 27 |
| 01:00 | 1 | 3 | 3 | 6 | 4 | 0 | 0 | 0 | 0 | **1** | 0 | 0 | 0 | 18 | 31 | 26 |
| 02:00 | 0 | 1 | 2 | 6 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 31 | 27 |
| 03:00 | 0 | 0 | 1 | 4 | 0 | **3** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 37 | 30 |
| 04:00 | 0 | 2 | 9 | 11 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 29 | 25 |
| 05:00 | 5 | 15 | 28 | 25 | 10 | 2 | 1 | **1** | 0 | 0 | 0 | 0 | 0 | 87 | 29 | 24 |
| 06:00 | 8 | 32 | 85 | 48 | 11 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 187 | 27 | 23 |
| 07:00 | 15 | 55 | 86 | **63** | **19** | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 240 | 27 | 22 |
| 08:00 | 21 | 46 | 95 | 41 | 13 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 217 | 26 | 21 |
| 09:00 | 27 | 62 | 89 | 31 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 217 | 25 | 20 |
| 10:00 | 22 | 61 | 71 | 55 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 216 | 26 | 21 |
| 11:00 | **33** | **89** | **112** | 54 | 10 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | **300** | 25 | 20 |
| 12 PM | **40** | 68 | 116 | 42 | 12 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 279 | 25 | 20 |
| 13:00 | 36 | **87** | 101 | 47 | 3 | 1 | **1** | 0 | 0 | 0 | 0 | 0 | 0 | 276 | 25 | 20 |
| 14:00 | 25 | 47 | 125 | 56 | 14 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 269 | 26 | 21 |
| 15:00 | 10 | 75 | 121 | 79 | 21 | **5** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 311 | 27 | 23 |
| 16:00 | 4 | 9 | 83 | 120 | 41 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 262 | 29 | 26 |
| 17:00 | 6 | 29 | **141** | 142 | **51** | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **372** | 28 | 25 |
| 18:00 | 3 | 46 | 133 | **143** | 40 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 370 | 28 | 24 |
| 19:00 | 3 | 18 | 129 | 120 | 34 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 308 | 28 | 25 |
| 20:00 | 2 | 9 | 86 | 85 | 21 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 205 | 28 | 25 |
| 21:00 | 1 | 12 | 46 | 62 | 24 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 150 | 30 | 26 |
| 22:00 | 0 | 3 | 37 | 61 | 13 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 117 | 28 | 26 |
| 23:00 | 0 | 4 | 16 | 33 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 64 | 29 | 26 |
| Total | 262 | 773 | 1726 | 1344 | 380 | 48 | 6 | 1 | 0 | 1 | 0 | 0 | 0 | 4541 | | |
| % | 5.8% | 17.0% | 38.0% | 29.6% | 8.4% | 1.1% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | | | |
| AM Peak | 11:00 | 11:00 | 11:00 | 07:00 | 07:00 | 03:00 | 00:00 | 05:00 | | 01:00 | | | | 11:00 | | |
| Vol. | 33 | 89 | 112 | 63 | 19 | 3 | 1 | 1 | | 1 | | | | 300 | | |
| PM Peak | 12:00 | 13:00 | 17:00 | 18:00 | 17:00 | 15:00 | 13:00 | | | | | | | 17:00 | | |
| Vol. | 40 | 87 | 141 | 143 | 51 | 5 | 1 | | | | | | | 372 | | |

Stats

| | |
|---|---|
| 15th Percentile : | 16 MPH |
| 50th Percentile : | 22 MPH |
| 85th Percentile : | 28 MPH |
| 95th Percentile : | 31 MPH |
| Mean Speed(Average) : | 23 MPH |
| 10 MPH Pace Speed : | 20-29 MPH |
| Number in Pace : | 3070 |
| Percent in Pace : | 67.6% |
| Number of Vehicles > 25 MPH : | 1511 |
| Percent of Vehicles > 25 MPH : | 33.3% |

PRECISION
D A T A
INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Study Name 186175 A (L-St @ E. 2nd St)
Start Date 06/08/2017
Start Time 7:00 AM

Major L Street
Minor E. 2nd Street
Northbound Left from Major

| | 2.0 - 3.0 | 3.0 - 4.0 | 4.0 - 5.0 | 5.0 - 6.0 | 6.0 - 7.0 | 7.0 - 8.0 | 8.0 - 9.0 | 9.0 - 10.0 | 10.0 - 11.0 | 11.0 - 12.0 | 12.0 - 13.0 | 13.0 - 14.0 | 14.0 - 15.0 | 15.0 - 16.0 | 16.0 - 17.0 | 17.0 - 18.0 | 18.0 - 19.0 | 19.0 - 20.0 | 20.0 - 21.0 | 21.0 - 22.0 | 22.0 - 23.0 | 23.0 - 24.0 | 24.0 - 25.0 | 25.0 - 26.0 | 26.0 - 27.0 | 27.0 - 28.0 | 28.00+ | Critical Gaps (4.1 sec) | Follow-up Gaps (2.2 sec) | Total Gaps |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7:00 AM | 12 | 9 | 2 | 7 | 4 | 5 | 3 | 1 | 4 | 2 | 0 | 1 | 2 | 0 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 10 | 47 | 225 | 272 |
| 7:15 AM | 8 | 5 | 4 | 7 | 2 | 1 | 2 | 0 | 3 | 0 | 2 | 1 | 2 | 1 | 3 | 1 | 1 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 8 | 41 | 234 | 275 |
| 7:30 AM | 14 | 6 | 3 | 5 | 1 | 0 | 1 | 4 | 1 | 1 | 0 | 2 | 1 | 1 | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 35 | 257 | 292 |
| 7:45 AM | 11 | 1 | 5 | 4 | 0 | 2 | 1 | 0 | 0 | 1 | 2 | 1 | 1 | 1 | 0 | 1 | 2 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 10 | 36 | 265 | 301 |
| 8:00 AM | 20 | 7 | 9 | 4 | 2 | 3 | 3 | 1 | 2 | 4 | 2 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 7 | 44 | 219 | 263 |
| 8:15 AM | 20 | 9 | 5 | 2 | 2 | 1 | 2 | 1 | 0 | 2 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 9 | 29 | 251 | 280 |
| 8:30 AM | 18 | 5 | 7 | 4 | 2 | 2 | 5 | 3 | 2 | 2 | 0 | 0 | 0 | 3 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 44 | 254 | 298 |
| 8:45 AM | 25 | 6 | 3 | 3 | 4 | 3 | 0 | 3 | 0 | 1 | 0 | 1 | 1 | 2 | 0 | 1 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 36 | 209 | 245 |
| 4:00 PM | 25 | 14 | 7 | 4 | 4 | 6 | 6 | 2 | 1 | 2 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 3 | 0 | 2 | 42 | 113 | 155 |
| 4:15 PM | 28 | 10 | 5 | 2 | 4 | 0 | 2 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 2 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 3 | 27 | 101 | 128 |
| 4:30 PM | 24 | 13 | 6 | 6 | 4 | 2 | 2 | 0 | 3 | 1 | 0 | 0 | 1 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 7 | 36 | 163 | 199 |
| 4:45 PM | 21 | 12 | 4 | 3 | 6 | 2 | 0 | 1 | 2 | 0 | 0 | 4 | 1 | 0 | 2 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 5 | 34 | 164 | 198 |
| 5:00 PM | 27 | 14 | 6 | 5 | 6 | 5 | 2 | 2 | 0 | 1 | 2 | 2 | 0 | 0 | 1 | 1 | 1 | 2 | 0 | 0 | 2 | 1 | 0 | 1 | 0 | 0 | 3 | 42 | 134 | 176 |
| 5:15 PM | 33 | 8 | 4 | 3 | 1 | 4 | 3 | 0 | 1 | 2 | 0 | 0 | 1 | 2 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 5 | 31 | 152 | 183 |
| 5:30 PM | 28 | 8 | 5 | 1 | 5 | 7 | 4 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 6 | 37 | 158 | 195 |
| 5:45 PM | 31 | 9 | 6 | 3 | 4 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 2 | 1 | 1 | 0 | 0 | 1 | 0 | 2 | 34 | 116 | 150 |

PRECISION
D A T A
INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Study Name 186175 A (L-St @ E. 2nd St)
Start Date 06/08/2017
Start Time 7:00 AM

Major L Street
Minor E. 2nd Street
Southbound Left from Major

| | 2.0 - 3.0 | 3.0 - 4.0 | 4.0 - 5.0 | 5.0 - 6.0 | 6.0 - 7.0 | 7.0 - 8.0 | 8.0 - 9.0 | 9.0 - 10.0 | 10.0 - 11.0 | 11.0 - 12.0 | 12.0 - 13.0 | 13.0 - 14.0 | 14.0 - 15.0 | 15.0 - 16.0 | 16.0 - 17.0 | 17.0 - 18.0 | 18.0 - 19.0 | 19.0 - 20.0 | 20.0 - 21.0 | 21.0 - 22.0 | 22.0 - 23.0 | 23.0 - 24.0 | 24.0 - 25.0 | 25.0 - 26.0 | 26.0 - 27.0 | 27.0 - 28.0 | 28.00+ | Critical Gaps (4.1 sec) | Follow-up Gaps (2.2 sec) | Total Gaps |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7:00 AM | 37 | 15 | 4 | 8 | 4 | 1 | 1 | 0 | 3 | 2 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 5 | 33 | 119 | 152 |
| 7:15 AM | 38 | 19 | 10 | 4 | 2 | 4 | 2 | 3 | 1 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 4 | 36 | 111 | 147 |
| 7:30 AM | 48 | 16 | 5 | 3 | 5 | 4 | 3 | 2 | 1 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 31 | 103 | 134 |
| 7:45 AM | 48 | 12 | 5 | 2 | 3 | 0 | 0 | 3 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 5 | 22 | 109 | 131 |
| 8:00 AM | 41 | 15 | 8 | 6 | 6 | 3 | 5 | 1 | 4 | 2 | 0 | 1 | 1 | 2 | 0 | 0 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 45 | 107 | 152 |
| 8:15 AM | 31 | 21 | 9 | 10 | 1 | 1 | 3 | 2 | 3 | 2 | 2 | 0 | 1 | 3 | 1 | 0 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 45 | 110 | 155 |
| 8:30 AM | 46 | 15 | 3 | 6 | 2 | 3 | 4 | 2 | 1 | 0 | 2 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 5 | 33 | 138 | 171 |
| 8:45 AM | 32 | 9 | 8 | 8 | 2 | 6 | 4 | 3 | 2 | 2 | 2 | 3 | 1 | 0 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 48 | 107 | 155 |
| 4:00 PM | 23 | 14 | 5 | 4 | 5 | 6 | 6 | 2 | 2 | 1 | 4 | 2 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 7 | 51 | 194 | 245 |
| 4:15 PM | 28 | 10 | 5 | 7 | 2 | 3 | 2 | 2 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 4 | 2 | 0 | 0 | 0 | 1 | 0 | 1 | 5 | 39 | 185 | 224 |
| 4:30 PM | 43 | 10 | 3 | 1 | 4 | 2 | 4 | 1 | 4 | 0 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 34 | 194 | 228 |
| 4:45 PM | 27 | 13 | 5 | 3 | 3 | 1 | 1 | 1 | 4 | 2 | 1 | 3 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 4 | 32 | 166 | 198 |
| 5:00 PM | 37 | 13 | 7 | 7 | 3 | 1 | 2 | 4 | 2 | 2 | 0 | 3 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 1 | 1 | 1 | 3 | 42 | 145 | 187 |
| 5:15 PM | 28 | 14 | 8 | 6 | 4 | 2 | 2 | 1 | 2 | 0 | 1 | 2 | 0 | 1 | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 7 | 42 | 197 | 239 |
| 5:30 PM | 29 | 12 | 12 | 4 | 3 | 4 | 0 | 1 | 2 | 0 | 2 | 2 | 1 | 0 | 5 | 1 | 1 | 1 | 0 | 0 | 2 | 0 | 1 | 0 | 1 | 1 | 3 | 46 | 162 | 208 |
| 5:45 PM | 29 | 18 | 6 | 3 | 4 | 3 | 2 | 3 | 2 | 2 | 1 | 1 | 0 | 2 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 6 | 40 | 171 | 211 |




46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Study Name 186175 A (L-St @ E. 2nd St)
Start Date 06/08/2017
Start Time 7:00 AM

Major L Street
Minor E. 2nd Street
Eastbound Right from Minor

| | 2.0 - 3.0 | 3.0 - 4.0 | 4.0 - 5.0 | 5.0 - 6.0 | 6.0 - 7.0 | 7.0 - 8.0 | 8.0 - 9.0 | 9.0 - 10.0 | 10.0 - 11.0 | 11.0 - 12.0 | 12.0 - 13.0 | 13.0 - 14.0 | 14.0 - 15.0 | 15.0 - 16.0 | 16.0 - 17.0 | 17.0 - 18.0 | 18.0 - 19.0 | 19.0 - 20.0 | 20.0 - 21.0 | 21.0 - 22.0 | 22.0 - 23.0 | 23.0 - 24.0 | 24.0 - 25.0 | 25.0 - 26.0 | 26.0 - 27.0 | 27.0 - 28.0 | 28.00+ | Critical Gaps (6.2 sec) | Follow-up Gaps (3.3 sec) | Total Gaps |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7:00 AM | 12 | 9 | 2 | 7 | 4 | 5 | 3 | 1 | 4 | 2 | 0 | 1 | 2 | 0 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 10 | 36 | 123 | 159 |
| 7:15 AM | 8 | 5 | 4 | 7 | 2 | 1 | 2 | 0 | 3 | 0 | 2 | 1 | 2 | 1 | 3 | 1 | 1 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 8 | 31 | 133 | 164 |
| 7:30 AM | 14 | 6 | 3 | 5 | 1 | 0 | 1 | 4 | 1 | 1 | 0 | 2 | 1 | 1 | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 27 | 149 | 176 |
| 7:45 AM | 11 | 1 | 5 | 4 | 0 | 2 | 1 | 0 | 0 | 1 | 2 | 1 | 1 | 1 | 0 | 1 | 2 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 10 | 27 | 154 | 181 |
| 8:00 AM | 20 | 7 | 9 | 4 | 2 | 3 | 3 | 1 | 2 | 4 | 2 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 7 | 31 | 118 | 149 |
| 8:15 AM | 20 | 9 | 5 | 2 | 2 | 1 | 2 | 1 | 0 | 2 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 9 | 22 | 152 | 174 |
| 8:30 AM | 18 | 5 | 7 | 4 | 2 | 2 | 5 | 3 | 2 | 2 | 0 | 0 | 0 | 3 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 32 | 142 | 174 |
| 8:45 AM | 25 | 6 | 3 | 3 | 4 | 3 | 0 | 3 | 0 | 1 | 0 | 1 | 1 | 2 | 0 | 1 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 27 | 117 | 144 |
| 4:00 PM | 25 | 14 | 7 | 4 | 4 | 6 | 6 | 2 | 1 | 2 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 3 | 0 | 2 | 31 | 50 | 81 |
| 4:15 PM | 28 | 10 | 5 | 2 | 4 | 0 | 2 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 2 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 3 | 18 | 53 | 71 |
| 4:30 PM | 24 | 13 | 6 | 6 | 4 | 2 | 2 | 0 | 3 | 1 | 0 | 0 | 1 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 7 | 25 | 90 | 115 |
| 4:45 PM | 21 | 12 | 4 | 3 | 6 | 2 | 0 | 1 | 2 | 0 | 0 | 4 | 1 | 0 | 2 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 5 | 25 | 91 | 116 |
| 5:00 PM | 27 | 14 | 6 | 5 | 6 | 5 | 2 | 2 | 0 | 1 | 2 | 2 | 0 | 0 | 1 | 1 | 1 | 2 | 0 | 0 | 2 | 1 | 0 | 1 | 0 | 0 | 3 | 32 | 69 | 101 |
| 5:15 PM | 33 | 8 | 4 | 3 | 1 | 4 | 3 | 0 | 1 | 2 | 0 | 0 | 1 | 2 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 5 | 24 | 83 | 107 |
| 5:30 PM | 28 | 8 | 5 | 1 | 5 | 7 | 4 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 6 | 29 | 84 | 113 |
| 5:45 PM | 31 | 9 | 6 | 3 | 4 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 2 | 1 | 1 | 0 | 0 | 1 | 0 | 2 | 24 | 58 | 82 |

PRECISION
D A T A
INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Study Name 186175 A (L-St @ E. 2nd St)
Start Date 06/08/2017
Start Time 7:00 AM

Major L Street
Minor E. 2nd Street
Westbound Right from Minor

| | 2.0 - 3.0 | 3.0 - 4.0 | 4.0 - 5.0 | 5.0 - 6.0 | 6.0 - 7.0 | 7.0 - 8.0 | 8.0 - 9.0 | 9.0 - 10.0 | 10.0 - 11.0 | 11.0 - 12.0 | 12.0 - 13.0 | 13.0 - 14.0 | 14.0 - 15.0 | 15.0 - 16.0 | 16.0 - 17.0 | 17.0 - 18.0 | 18.0 - 19.0 | 19.0 - 20.0 | 20.0 - 21.0 | 21.0 - 22.0 | 22.0 - 23.0 | 23.0 - 24.0 | 24.0 - 25.0 | 25.0 - 26.0 | 26.0 - 27.0 | 27.0 - 28.0 | 28.00+ | Critical Gaps (6.2 sec) | Follow-up Gaps (3.3 sec) | Total Gaps |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7:00 AM | 37 | 15 | 4 | 8 | 4 | 1 | 1 | 0 | 3 | 2 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 5 | 20 | 63 | 83 |
| 7:15 AM | 38 | 19 | 10 | 4 | 2 | 4 | 2 | 3 | 1 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 4 | 24 | 58 | 82 |
| 7:30 AM | 48 | 16 | 5 | 3 | 5 | 4 | 3 | 2 | 1 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 23 | 51 | 74 |
| 7:45 AM | 48 | 12 | 5 | 2 | 3 | 0 | 0 | 3 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 5 | 15 | 62 | 77 |
| 8:00 AM | 41 | 15 | 8 | 6 | 6 | 3 | 5 | 1 | 4 | 2 | 0 | 1 | 1 | 2 | 0 | 0 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 28 | 50 | 78 |
| 8:15 AM | 31 | 21 | 9 | 10 | 1 | 1 | 3 | 2 | 3 | 2 | 2 | 0 | 1 | 3 | 1 | 0 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 26 | 51 | 77 |
| 8:30 AM | 46 | 15 | 3 | 6 | 2 | 3 | 4 | 2 | 1 | 0 | 2 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 5 | 24 | 72 | 96 |
| 8:45 AM | 32 | 9 | 8 | 8 | 2 | 6 | 4 | 3 | 2 | 2 | 2 | 3 | 1 | 0 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 32 | 49 | 81 |
| 4:00 PM | 23 | 14 | 5 | 4 | 5 | 6 | 6 | 2 | 2 | 1 | 4 | 2 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 7 | 40 | 100 | 140 |
| 4:15 PM | 28 | 10 | 5 | 7 | 2 | 3 | 2 | 2 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 4 | 2 | 0 | 0 | 0 | 1 | 0 | 1 | 5 | 27 | 104 | 131 |
| 4:30 PM | 43 | 10 | 3 | 1 | 4 | 2 | 4 | 1 | 4 | 0 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 28 | 104 | 132 |
| 4:45 PM | 27 | 13 | 5 | 3 | 3 | 1 | 1 | 1 | 4 | 2 | 1 | 3 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 4 | 26 | 90 | 116 |
| 5:00 PM | 37 | 13 | 7 | 7 | 3 | 1 | 2 | 4 | 2 | 2 | 0 | 3 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 1 | 1 | 1 | 3 | 29 | 75 | 104 |
| 5:15 PM | 28 | 14 | 8 | 6 | 4 | 2 | 2 | 1 | 2 | 0 | 1 | 2 | 0 | 1 | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 7 | 26 | 112 | 138 |
| 5:30 PM | 29 | 12 | 12 | 4 | 3 | 4 | 0 | 1 | 2 | 0 | 2 | 2 | 1 | 0 | 5 | 1 | 1 | 1 | 0 | 0 | 2 | 0 | 1 | 0 | 1 | 1 | 3 | 30 | 86 | 116 |
| 5:45 PM | 29 | 18 | 6 | 3 | 4 | 3 | 2 | 3 | 2 | 2 | 1 | 1 | 0 | 2 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 6 | 31 | 90 | 121 |

PRECISION
D A T A
INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Study Name 186175 A (L-St @ E. 2nd St)
Start Date 06/08/2017
Start Time 7:00 AM

Major L Street
Minor E. 2nd Street
Through Traffic on Minor

| | 2.0 - 3.0 | 3.0 - 4.0 | 4.0 - 5.0 | 5.0 - 6.0 | 6.0 - 7.0 | 7.0 - 8.0 | 8.0 - 9.0 | 9.0 - 10.0 | 10.0 - 11.0 | 11.0 - 12.0 | 12.0 - 13.0 | 13.0 - 14.0 | 14.0 - 15.0 | 15.0 - 16.0 | 16.0 - 17.0 | 17.0 - 18.0 | 18.0 - 19.0 | 19.0 - 20.0 | 20.0 - 21.0 | 21.0 - 22.0 | 22.0 - 23.0 | 23.0 - 24.0 | 24.0 - 25.0 | 25.0 - 26.0 | 26.0 - 27.0 | 27.0 - 28.0 | 28.00+ | Critical Gaps (6.5 sec) | Follow-up Gaps (4.0 sec) | Total Gaps |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7:00 AM | 33 | 17 | 5 | 13 | 3 | 2 | 1 | 2 | 3 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 18 | 21 | 39 |
| 7:15 AM | 43 | 21 | 12 | 8 | 2 | 4 | 3 | 3 | 2 | 2 | 4 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | 12 | 35 |
| 7:30 AM | 49 | 20 | 5 | 5 | 3 | 4 | 4 | 2 | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 21 | 18 | 39 |
| 7:45 AM | 55 | 10 | 4 | 5 | 2 | 1 | 0 | 2 | 2 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 15 | 29 | 44 |
| 8:00 AM | 47 | 20 | 13 | 5 | 6 | 0 | 6 | 1 | 0 | 3 | 0 | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 17 | 17 | 34 |
| 8:15 AM | 33 | 25 | 8 | 8 | 1 | 3 | 3 | 2 | 3 | 3 | 2 | 0 | 0 | 2 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 23 | 25 | 48 |
| 8:30 AM | 45 | 14 | 4 | 4 | 4 | 4 | 6 | 1 | 1 | 0 | 2 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 24 | 31 | 55 |
| 8:45 AM | 42 | 13 | 14 | 7 | 3 | 3 | 3 | 1 | 1 | 2 | 0 | 2 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 20 | 38 |
| 4:00 PM | 34 | 22 | 7 | 6 | 4 | 6 | 2 | 2 | 0 | 0 | 2 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 11 | 30 |
| 4:15 PM | 38 | 15 | 9 | 4 | 2 | 1 | 4 | 1 | 1 | 1 | 1 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 10 | 25 |
| 4:30 PM | 33 | 12 | 9 | 3 | 6 | 2 | 5 | 0 | 2 | 1 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 1 | 23 | 30 | 53 |
| 4:45 PM | 30 | 19 | 7 | 4 | 8 | 2 | 1 | 3 | 3 | 0 | 0 | 4 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 22 | 19 | 41 |
| 5:00 PM | 38 | 15 | 11 | 6 | 2 | 1 | 3 | 4 | 2 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 17 | 9 | 26 |
| 5:15 PM | 49 | 16 | 6 | 3 | 1 | 3 | 3 | 1 | 3 | 1 | 0 | 1 | 1 | 1 | 0 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 21 | 25 | 46 |
| 5:30 PM | 42 | 22 | 10 | 3 | 5 | 9 | 4 | 2 | 1 | 1 | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 24 | 14 | 38 |
| 5:45 PM | 33 | 10 | 9 | 4 | 5 | 1 | 2 | 4 | 1 | 1 | 0 | 1 | 1 | 2 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 16 | 35 |

PRECISION
D A T A
INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Study Name 186175 A (L-St @ E. 2nd St)
Start Date 06/08/2017
Start Time 7:00 AM

Major L Street
Minor E. 2nd Street
Left from Minor

| | 2.0 - 3.0 | 3.0 - 4.0 | 4.0 - 5.0 | 5.0 - 6.0 | 6.0 - 7.0 | 7.0 - 8.0 | 8.0 - 9.0 | 9.0 - 10.0 | 10.0 - 11.0 | 11.0 - 12.0 | 12.0 - 13.0 | 13.0 - 14.0 | 14.0 - 15.0 | 15.0 - 16.0 | 16.0 - 17.0 | 17.0 - 18.0 | 18.0 - 19.0 | 19.0 - 20.0 | 20.0 - 21.0 | 21.0 - 22.0 | 22.0 - 23.0 | 23.0 - 24.0 | 24.0 - 25.0 | 25.0 - 26.0 | 26.0 - 27.0 | 27.0 - 28.0 | 28.00+ | Critical Gaps (7.1 sec) | Follow-up Gaps (3.5 sec) | Total Gaps |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7:00 AM | 33 | 17 | 5 | 13 | 3 | 2 | 1 | 2 | 3 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 15 | 24 | 39 |
| 7:15 AM | 43 | 21 | 12 | 8 | 2 | 4 | 3 | 3 | 2 | 2 | 4 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 13 | 34 |
| 7:30 AM | 49 | 20 | 5 | 5 | 3 | 4 | 4 | 2 | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 19 | 20 | 39 |
| 7:45 AM | 55 | 10 | 4 | 5 | 2 | 1 | 0 | 2 | 2 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 13 | 29 | 42 |
| 8:00 AM | 47 | 20 | 13 | 5 | 6 | 0 | 6 | 1 | 0 | 3 | 0 | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 16 | 20 | 36 |
| 8:15 AM | 33 | 25 | 8 | 8 | 1 | 3 | 3 | 2 | 3 | 3 | 2 | 0 | 0 | 2 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 22 | 25 | 47 |
| 8:30 AM | 45 | 14 | 4 | 4 | 4 | 4 | 6 | 1 | 1 | 0 | 2 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 23 | 34 | 57 |
| 8:45 AM | 42 | 13 | 14 | 7 | 3 | 3 | 3 | 1 | 1 | 2 | 0 | 2 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 21 | 37 |
| 4:00 PM | 34 | 22 | 7 | 6 | 4 | 6 | 2 | 2 | 0 | 0 | 2 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 13 | 27 |
| 4:15 PM | 38 | 15 | 9 | 4 | 2 | 1 | 4 | 1 | 1 | 1 | 1 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 11 | 24 |
| 4:30 PM | 33 | 12 | 9 | 3 | 6 | 2 | 5 | 0 | 2 | 1 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 1 | 18 | 32 | 50 |
| 4:45 PM | 30 | 19 | 7 | 4 | 8 | 2 | 1 | 3 | 3 | 0 | 0 | 4 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 17 | 21 | 38 |
| 5:00 PM | 38 | 15 | 11 | 6 | 2 | 1 | 3 | 4 | 2 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 16 | 10 | 26 |
| 5:15 PM | 49 | 16 | 6 | 3 | 1 | 3 | 3 | 1 | 3 | 1 | 0 | 1 | 1 | 1 | 0 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 20 | 29 | 49 |
| 5:30 PM | 42 | 22 | 10 | 3 | 5 | 9 | 4 | 2 | 1 | 1 | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 23 | 15 | 38 |
| 5:45 PM | 33 | 10 | 9 | 4 | 5 | 1 | 2 | 4 | 1 | 1 | 0 | 1 | 1 | 2 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 17 | 33 |




46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Study Name 186175-B (L St @ E 3rd St)
Start Date 06/08/2017
Start Time 7:00 AM

Major L Street
Minor E. 3rd Street
Northbound Left from Major

| | 2.0 - 3.0 | 3.0 - 4.0 | 4.0 - 5.0 | 5.0 - 6.0 | 6.0 - 7.0 | 7.0 - 8.0 | 8.0 - 9.0 | 9.0 - 10.0 | 10.0 - 11.0 | 11.0 - 12.0 | 12.0 - 13.0 | 13.0 - 14.0 | 14.0 - 15.0 | 15.0 - 16.0 | 16.0 - 17.0 | 17.0 - 18.0 | 18.0 - 19.0 | 19.0 - 20.0 | 20.0 - 21.0 | 21.0 - 22.0 | 22.0 - 23.0 | 23.0 - 24.0 | 24.0 - 25.0 | 25.0 - 26.0 | 26.0 - 27.0 | 27.0 - 28.0 | 28.00+ | Critical Gaps (4.1 sec) | Follow-up Gaps (2.2 sec) | Total Gaps |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7:00 AM | 18 | 8 | 4 | 10 | 6 | 2 | 0 | 2 | 5 | 1 | 3 | 0 | 3 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 4 | 48 | 179 | 227 |
| 7:15 AM | 10 | 7 | 3 | 0 | 5 | 4 | 2 | 0 | 2 | 2 | 2 | 1 | 0 | 2 | 1 | 2 | 2 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 8 | 40 | 235 | 275 |
| 7:30 AM | 10 | 11 | 7 | 3 | 1 | 2 | 1 | 2 | 4 | 2 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 11 | 38 | 238 | 276 |
| 7:45 AM | 7 | 8 | 3 | 3 | 3 | 0 | 1 | 2 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 3 | 1 | 1 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 8 | 36 | 247 | 283 |
| 8:00 AM | 20 | 9 | 2 | 7 | 0 | 2 | 4 | 0 | 1 | 1 | 2 | 0 | 3 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 6 | 33 | 181 | 214 |
| 8:15 AM | 19 | 11 | 3 | 2 | 1 | 2 | 2 | 1 | 0 | 1 | 3 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 8 | 30 | 234 | 264 |
| 8:30 AM | 19 | 9 | 6 | 2 | 1 | 5 | 1 | 2 | 2 | 5 | 1 | 1 | 1 | 3 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 8 | 42 | 206 | 248 |
| 8:45 AM | 20 | 7 | 9 | 0 | 3 | 2 | 0 | 0 | 2 | 0 | 1 | 1 | 1 | 0 | 1 | 2 | 1 | 2 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 1 | 6 | 35 | 210 | 245 |
| 4:00 PM | 32 | 13 | 10 | 3 | 4 | 1 | 4 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 31 | 111 | 142 |
| 4:15 PM | 22 | 8 | 3 | 5 | 2 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 18 | 91 | 109 |
| 4:30 PM | 21 | 9 | 3 | 5 | 2 | 2 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 6 | 27 | 150 | 177 |
| 4:45 PM | 28 | 9 | 6 | 6 | 1 | 0 | 3 | 7 | 1 | 1 | 1 | 2 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 3 | 37 | 142 | 179 |
| 5:00 PM | 31 | 12 | 1 | 7 | 1 | 2 | 1 | 1 | 3 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 22 | 64 | 86 |
| 5:15 PM | 19 | 4 | 3 | 2 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 17 | 89 | 106 |
| 5:30 PM | 21 | 8 | 6 | 1 | 3 | 3 | 5 | 2 | 1 | 0 | 0 | 1 | 2 | 1 | 0 | 0 | 1 | 0 | 3 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 3 | 34 | 119 | 153 |
| 5:45 PM | 20 | 8 | 4 | 1 | 2 | 2 | 1 | 2 | 0 | 1 | 1 | 0 | 0 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 20 | 127 | 147 |




46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Study Name 186175-B (L St @ E 3rd St)
Start Date 06/08/2017
Start Time 7:00 AM

Major L Street
Minor E. 3rd Street
Southbound Left from Major

| | 2.0 - 3.0 | 3.0 - 4.0 | 4.0 - 5.0 | 5.0 - 6.0 | 6.0 - 7.0 | 7.0 - 8.0 | 8.0 - 9.0 | 9.0 - 10.0 | 10.0 - 11.0 | 11.0 - 12.0 | 12.0 - 13.0 | 13.0 - 14.0 | 14.0 - 15.0 | 15.0 - 16.0 | 16.0 - 17.0 | 17.0 - 18.0 | 18.0 - 19.0 | 19.0 - 20.0 | 20.0 - 21.0 | 21.0 - 22.0 | 22.0 - 23.0 | 23.0 - 24.0 | 24.0 - 25.0 | 25.0 - 26.0 | 26.0 - 27.0 | 27.0 - 28.0 | 28.00+ | Critical Gaps (4.1 sec) | Follow-up Gaps (2.2 sec) | Total Gaps |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7:00 AM | 27 | 12 | 16 | 6 | 3 | 4 | 1 | 2 | 3 | 3 | 1 | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 47 | 106 | 153 |
| 7:15 AM | 45 | 24 | 9 | 2 | 5 | 4 | 4 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 5 | 33 | 113 | 146 |
| 7:30 AM | 39 | 11 | 7 | 7 | 4 | 4 | 4 | 2 | 3 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 1 | 0 | 1 | 0 | 0 | 2 | 38 | 102 | 140 |
| 7:45 AM | 36 | 14 | 10 | 1 | 3 | 2 | 2 | 1 | 4 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 28 | 102 | 130 |
| 8:00 AM | 46 | 17 | 7 | 4 | 3 | 7 | 4 | 0 | 1 | 0 | 4 | 0 | 1 | 0 | 1 | 0 | 2 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 4 | 41 | 131 | 172 |
| 8:15 AM | 33 | 10 | 10 | 7 | 3 | 6 | 4 | 0 | 3 | 0 | 2 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 3 | 3 | 48 | 143 | 191 |
| 8:30 AM | 41 | 17 | 10 | 5 | 2 | 3 | 4 | 1 | 2 | 2 | 1 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 39 | 131 | 170 |
| 8:45 AM | 30 | 19 | 6 | 6 | 7 | 3 | 2 | 1 | 1 | 0 | 0 | 1 | 3 | 2 | 0 | 0 | 1 | 0 | 1 | 3 | 1 | 0 | 0 | 1 | 0 | 1 | 3 | 43 | 152 | 195 |
| 4:00 PM | 14 | 6 | 4 | 5 | 4 | 9 | 1 | 2 | 2 | 0 | 1 | 3 | 2 | 1 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 8 | 46 | 224 | 270 |
| 4:15 PM | 25 | 13 | 4 | 2 | 2 | 3 | 3 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 32 | 220 | 252 |
| 4:30 PM | 31 | 11 | 7 | 3 | 2 | 2 | 3 | 2 | 3 | 4 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 39 | 202 | 241 |
| 4:45 PM | 28 | 10 | 5 | 5 | 4 | 2 | 1 | 1 | 1 | 5 | 1 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 6 | 38 | 213 | 251 |
| 5:00 PM | 31 | 11 | 9 | 4 | 5 | 4 | 2 | 2 | 3 | 3 | 2 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 6 | 45 | 174 | 219 |
| 5:15 PM | 23 | 12 | 3 | 3 | 3 | 4 | 2 | 1 | 3 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 9 | 34 | 218 | 252 |
| 5:30 PM | 26 | 16 | 7 | 3 | 5 | 2 | 2 | 3 | 1 | 1 | 0 | 1 | 1 | 1 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 6 | 39 | 177 | 216 |
| 5:45 PM | 23 | 8 | 5 | 7 | 3 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 2 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 40 | 210 | 250 |

PRECISION
D A T A
INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Study Name 186175-B (L St @ E 3rd St)
Start Date 06/08/2017
Start Time 7:00 AM

Major L Street
Minor E. 3rd Street
Eastbound Right from Minor

| | 2.0 - 3.0 | 3.0 - 4.0 | 4.0 - 5.0 | 5.0 - 6.0 | 6.0 - 7.0 | 7.0 - 8.0 | 8.0 - 9.0 | 9.0 - 10.0 | 10.0 - 11.0 | 11.0 - 12.0 | 12.0 - 13.0 | 13.0 - 14.0 | 14.0 - 15.0 | 15.0 - 16.0 | 16.0 - 17.0 | 17.0 - 18.0 | 18.0 - 19.0 | 19.0 - 20.0 | 20.0 - 21.0 | 21.0 - 22.0 | 22.0 - 23.0 | 23.0 - 24.0 | 24.0 - 25.0 | 25.0 - 26.0 | 26.0 - 27.0 | 27.0 - 28.0 | 28.00+ | Critical Gaps (6.2 sec) | Follow-up Gaps (3.3 sec) | Total Gaps |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7:00 AM | 18 | 8 | 4 | 10 | 6 | 2 | 0 | 2 | 5 | 1 | 3 | 0 | 3 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 4 | 33 | 95 | 128 |
| 7:15 AM | 10 | 7 | 3 | 0 | 5 | 4 | 2 | 0 | 2 | 2 | 2 | 1 | 0 | 2 | 1 | 2 | 2 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 8 | 35 | 128 | 163 |
| 7:30 AM | 10 | 11 | 7 | 3 | 1 | 2 | 1 | 2 | 4 | 2 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 11 | 28 | 140 | 168 |
| 7:45 AM | 7 | 8 | 3 | 3 | 3 | 0 | 1 | 2 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 3 | 1 | 1 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 8 | 29 | 140 | 169 |
| 8:00 AM | 20 | 9 | 2 | 7 | 0 | 2 | 4 | 0 | 1 | 1 | 2 | 0 | 3 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 6 | 24 | 101 | 125 |
| 8:15 AM | 19 | 11 | 3 | 2 | 1 | 2 | 2 | 1 | 0 | 1 | 3 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 8 | 25 | 135 | 160 |
| 8:30 AM | 19 | 9 | 6 | 2 | 1 | 5 | 1 | 2 | 2 | 5 | 1 | 1 | 1 | 3 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 8 | 34 | 110 | 144 |
| 8:45 AM | 20 | 7 | 9 | 0 | 3 | 2 | 0 | 0 | 2 | 0 | 1 | 1 | 1 | 0 | 1 | 2 | 1 | 2 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 1 | 6 | 27 | 121 | 148 |
| 4:00 PM | 32 | 13 | 10 | 3 | 4 | 1 | 4 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 19 | 59 | 78 |
| 4:15 PM | 22 | 8 | 3 | 5 | 2 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 10 | 52 | 62 |
| 4:30 PM | 21 | 9 | 3 | 5 | 2 | 2 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 6 | 19 | 84 | 103 |
| 4:45 PM | 28 | 9 | 6 | 6 | 1 | 0 | 3 | 7 | 1 | 1 | 1 | 2 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 3 | 26 | 70 | 96 |
| 5:00 PM | 31 | 12 | 1 | 7 | 1 | 2 | 1 | 1 | 3 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 14 | 33 | 47 |
| 5:15 PM | 19 | 4 | 3 | 2 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 12 | 50 | 62 |
| 5:30 PM | 21 | 8 | 6 | 1 | 3 | 3 | 5 | 2 | 1 | 0 | 0 | 1 | 2 | 1 | 0 | 0 | 1 | 0 | 3 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 3 | 27 | 55 | 82 |
| 5:45 PM | 20 | 8 | 4 | 1 | 2 | 2 | 1 | 2 | 0 | 1 | 1 | 0 | 0 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 16 | 72 | 88 |




46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Study Name 186175-B (L St @ E 3rd St)
Start Date 06/08/2017
Start Time 7:00 AM

Major L Street
Minor E. 3rd Street
Westbound Right from Minor

| | 2.0 - 3.0 | 3.0 - 4.0 | 4.0 - 5.0 | 5.0 - 6.0 | 6.0 - 7.0 | 7.0 - 8.0 | 8.0 - 9.0 | 9.0 - 10.0 | 10.0 - 11.0 | 11.0 - 12.0 | 12.0 - 13.0 | 13.0 - 14.0 | 14.0 - 15.0 | 15.0 - 16.0 | 16.0 - 17.0 | 17.0 - 18.0 | 18.0 - 19.0 | 19.0 - 20.0 | 20.0 - 21.0 | 21.0 - 22.0 | 22.0 - 23.0 | 23.0 - 24.0 | 24.0 - 25.0 | 25.0 - 26.0 | 26.0 - 27.0 | 27.0 - 28.0 | 28.00+ | Critical Gaps (6.2 sec) | Follow-up Gaps (3.3 sec) | Total Gaps |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7:00 AM | 27 | 12 | 16 | 6 | 3 | 4 | 1 | 2 | 3 | 3 | 1 | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 26 | 53 | 79 |
| 7:15 AM | 45 | 24 | 9 | 2 | 5 | 4 | 4 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 5 | 23 | 59 | 82 |
| 7:30 AM | 39 | 11 | 7 | 7 | 4 | 4 | 4 | 2 | 3 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 1 | 0 | 1 | 0 | 0 | 2 | 24 | 50 | 74 |
| 7:45 AM | 36 | 14 | 10 | 1 | 3 | 2 | 2 | 1 | 4 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 20 | 52 | 72 |
| 8:00 AM | 46 | 17 | 7 | 4 | 3 | 7 | 4 | 0 | 1 | 0 | 4 | 0 | 1 | 0 | 1 | 0 | 2 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 4 | 29 | 63 | 92 |
| 8:15 AM | 33 | 10 | 10 | 7 | 3 | 6 | 4 | 0 | 3 | 0 | 2 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 3 | 3 | 31 | 74 | 105 |
| 8:30 AM | 41 | 17 | 10 | 5 | 2 | 3 | 4 | 1 | 2 | 2 | 1 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 24 | 66 | 90 |
| 8:45 AM | 30 | 19 | 6 | 6 | 7 | 3 | 2 | 1 | 1 | 0 | 0 | 1 | 3 | 2 | 0 | 0 | 1 | 0 | 1 | 3 | 1 | 0 | 0 | 1 | 0 | 1 | 3 | 31 | 77 | 108 |
| 4:00 PM | 14 | 6 | 4 | 5 | 4 | 9 | 1 | 2 | 2 | 0 | 1 | 3 | 2 | 1 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 8 | 37 | 120 | 157 |
| 4:15 PM | 25 | 13 | 4 | 2 | 2 | 3 | 3 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 25 | 126 | 151 |
| 4:30 PM | 31 | 11 | 7 | 3 | 2 | 2 | 3 | 2 | 3 | 4 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 30 | 109 | 139 |
| 4:45 PM | 28 | 10 | 5 | 5 | 4 | 2 | 1 | 1 | 1 | 5 | 1 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 6 | 26 | 120 | 146 |
| 5:00 PM | 31 | 11 | 9 | 4 | 5 | 4 | 2 | 2 | 3 | 3 | 2 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 6 | 32 | 95 | 127 |
| 5:15 PM | 23 | 12 | 3 | 3 | 3 | 4 | 2 | 1 | 3 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 9 | 28 | 125 | 153 |
| 5:30 PM | 26 | 16 | 7 | 3 | 5 | 2 | 2 | 3 | 1 | 1 | 0 | 1 | 1 | 1 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 6 | 29 | 97 | 126 |
| 5:45 PM | 23 | 8 | 5 | 7 | 3 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 2 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 27 | 119 | 146 |

PRECISION
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INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Study Name 186175-B (L St @ E 3rd St)
Start Date 06/08/2017
Start Time 7:00 AM

Major L Street
Minor E. 3rd Street
Through Traffic on Minor

| | 2.0 - 3.0 | 3.0 - 4.0 | 4.0 - 5.0 | 5.0 - 6.0 | 6.0 - 7.0 | 7.0 - 8.0 | 8.0 - 9.0 | 9.0 - 10.0 | 10.0 - 11.0 | 11.0 - 12.0 | 12.0 - 13.0 | 13.0 - 14.0 | 14.0 - 15.0 | 15.0 - 16.0 | 16.0 - 17.0 | 17.0 - 18.0 | 18.0 - 19.0 | 19.0 - 20.0 | 20.0 - 21.0 | 21.0 - 22.0 | 22.0 - 23.0 | 23.0 - 24.0 | 24.0 - 25.0 | 25.0 - 26.0 | 26.0 - 27.0 | 27.0 - 28.0 | 28.00+ | Critical Gaps (6.5 sec) | Follow-up Gaps (4.0 sec) | Total Gaps |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7:00 AM | 33 | 15 | 12 | 8 | 4 | 2 | 3 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 13 | 13 | 26 |
| 7:15 AM | 45 | 26 | 9 | 2 | 2 | 5 | 1 | 0 | 1 | 2 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 19 | 27 | 46 |
| 7:30 AM | 39 | 19 | 12 | 7 | 4 | 4 | 3 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 12 | 26 |
| 7:45 AM | 39 | 19 | 8 | 3 | 4 | 0 | 1 | 2 | 4 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 14 | 20 | 34 |
| 8:00 AM | 38 | 15 | 6 | 6 | 4 | 6 | 1 | 0 | 3 | 1 | 3 | 1 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 22 | 19 | 41 |
| 8:15 AM | 35 | 15 | 7 | 5 | 4 | 8 | 1 | 2 | 1 | 2 | 0 | 1 | 2 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 1 | 27 | 32 | 59 |
| 8:30 AM | 39 | 16 | 13 | 9 | 3 | 4 | 2 | 0 | 3 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 17 | 26 | 43 |
| 8:45 AM | 35 | 20 | 12 | 8 | 5 | 5 | 2 | 1 | 3 | 0 | 0 | 1 | 0 | 4 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 19 | 40 |
| 4:00 PM | 39 | 12 | 8 | 5 | 3 | 4 | 3 | 3 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 18 | 18 | 36 |
| 4:15 PM | 26 | 12 | 3 | 4 | 1 | 4 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 13 | 18 | 31 |
| 4:30 PM | 28 | 11 | 12 | 3 | 3 | 3 | 2 | 0 | 0 | 3 | 1 | 2 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 17 | 23 | 40 |
| 4:45 PM | 35 | 12 | 10 | 7 | 2 | 1 | 5 | 6 | 2 | 3 | 0 | 4 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 25 | 20 | 45 |
| 5:00 PM | 30 | 13 | 6 | 6 | 4 | 2 | 3 | 1 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 3 | 16 |
| 5:15 PM | 23 | 10 | 4 | 3 | 5 | 3 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 12 | 15 | 27 |
| 5:30 PM | 30 | 14 | 9 | 4 | 7 | 3 | 2 | 1 | 1 | 0 | 0 | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 18 | 17 | 35 |
| 5:45 PM | 24 | 12 | 3 | 3 | 2 | 4 | 1 | 2 | 0 | 2 | 1 | 0 | 0 | 4 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 19 | 27 | 46 |




46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Study Name 186175-B (L St @ E 3rd St)
Start Date 06/08/2017
Start Time 7:00 AM

Major L Street
Minor E. 3rd Street
Left from Minor

| | 2.0 - 3.0 | 3.0 - 4.0 | 4.0 - 5.0 | 5.0 - 6.0 | 6.0 - 7.0 | 7.0 - 8.0 | 8.0 - 9.0 | 9.0 - 10.0 | 10.0 - 11.0 | 11.0 - 12.0 | 12.0 - 13.0 | 13.0 - 14.0 | 14.0 - 15.0 | 15.0 - 16.0 | 16.0 - 17.0 | 17.0 - 18.0 | 18.0 - 19.0 | 19.0 - 20.0 | 20.0 - 21.0 | 21.0 - 22.0 | 22.0 - 23.0 | 23.0 - 24.0 | 24.0 - 25.0 | 25.0 - 26.0 | 26.0 - 27.0 | 27.0 - 28.0 | 28.00+ | Critical Gaps (7.1 sec) | Follow-up Gaps (3.5 sec) | Total Gaps |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7:00 AM | 33 | 15 | 12 | 8 | 4 | 2 | 3 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 9 | 15 | 24 |
| 7:15 AM | 45 | 26 | 9 | 2 | 2 | 5 | 1 | 0 | 1 | 2 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 17 | 32 | 49 |
| 7:30 AM | 39 | 19 | 12 | 7 | 4 | 4 | 3 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 14 | 28 |
| 7:45 AM | 39 | 19 | 8 | 3 | 4 | 0 | 1 | 2 | 4 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 12 | 23 | 35 |
| 8:00 AM | 38 | 15 | 6 | 6 | 4 | 6 | 1 | 0 | 3 | 1 | 3 | 1 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 20 | 22 | 42 |
| 8:15 AM | 35 | 15 | 7 | 5 | 4 | 8 | 1 | 2 | 1 | 2 | 0 | 1 | 2 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 1 | 24 | 35 | 59 |
| 8:30 AM | 39 | 16 | 13 | 9 | 3 | 4 | 2 | 0 | 3 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 15 | 28 | 43 |
| 8:45 AM | 35 | 20 | 12 | 8 | 5 | 5 | 2 | 1 | 3 | 0 | 0 | 1 | 0 | 4 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 21 | 39 |
| 4:00 PM | 39 | 12 | 8 | 5 | 3 | 4 | 3 | 3 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 17 | 20 | 37 |
| 4:15 PM | 26 | 12 | 3 | 4 | 1 | 4 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 10 | 19 | 29 |
| 4:30 PM | 28 | 11 | 12 | 3 | 3 | 3 | 2 | 0 | 0 | 3 | 1 | 2 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 16 | 25 | 41 |
| 4:45 PM | 35 | 12 | 10 | 7 | 2 | 1 | 5 | 6 | 2 | 3 | 0 | 4 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 24 | 20 | 44 |
| 5:00 PM | 30 | 13 | 6 | 6 | 4 | 2 | 3 | 1 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 3 | 13 |
| 5:15 PM | 23 | 10 | 4 | 3 | 5 | 3 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 9 | 17 | 26 |
| 5:30 PM | 30 | 14 | 9 | 4 | 7 | 3 | 2 | 1 | 1 | 0 | 0 | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 13 | 18 | 31 |
| 5:45 PM | 24 | 12 | 3 | 3 | 2 | 4 | 1 | 2 | 0 | 2 | 1 | 0 | 0 | 4 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 18 | 27 | 45 |




46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Study Name 186175-C (K St @ E 1st St)
Start Date 06/08/2017
Start Time 7:00 AM

Major K Street
Minor E. 1st Street
Eastbound Left from Major

| | 2.0 - 3.0 | 3.0 - 4.0 | 4.0 - 5.0 | 5.0 - 6.0 | 6.0 - 7.0 | 7.0 - 8.0 | 8.0 - 9.0 | 9.0 - 10.0 | 10.0 - 11.0 | 11.0 - 12.0 | 12.0 - 13.0 | 13.0 - 14.0 | 14.0 - 15.0 | 15.0 - 16.0 | 16.0 - 17.0 | 17.0 - 18.0 | 18.0 - 19.0 | 19.0 - 20.0 | 20.0 - 21.0 | 21.0 - 22.0 | 22.0 - 23.0 | 23.0 - 24.0 | 24.0 - 25.0 | 25.0 - 26.0 | 26.0 - 27.0 | 27.0 - 28.0 | 28.00+ | Critical Gaps (4.1 sec) | Follow-up Gaps (2.2 sec) | Total Gaps |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7:00 AM | 4 | 1 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 2 | 12 | 22 | 348 | 370 |
| 7:15 AM | 5 | 1 | 2 | 1 | 1 | 4 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 2 | 3 | 0 | 1 | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 10 | 33 | 290 | 323 |
| 7:30 AM | 11 | 2 | 2 | 2 | 1 | 4 | 4 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 11 | 36 | 284 | 320 |
| 7:45 AM | 10 | 5 | 3 | 4 | 2 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 12 | 30 | 279 | 309 |
| 8:00 AM | 10 | 4 | 1 | 4 | 3 | 2 | 3 | 0 | 2 | 1 | 3 | 2 | 2 | 1 | 3 | 1 | 1 | 1 | 0 | 1 | 2 | 0 | 0 | 1 | 3 | 0 | 6 | 42 | 269 | 311 |
| 8:15 AM | 5 | 4 | 5 | 3 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 3 | 0 | 1 | 1 | 1 | 3 | 2 | 1 | 2 | 0 | 0 | 2 | 0 | 1 | 0 | 8 | 36 | 247 | 283 |
| 8:30 AM | 1 | 3 | 2 | 1 | 2 | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 13 | 30 | 313 | 343 |
| 8:45 AM | 4 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 10 | 23 | 313 | 336 |
| 4:00 PM | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 2 | 1 | 0 | 1 | 1 | 2 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 2 | 15 | 31 | 326 | 357 |
| 4:15 PM | 2 | 3 | 5 | 2 | 3 | 4 | 0 | 1 | 1 | 4 | 1 | 1 | 2 | 0 | 0 | 1 | 0 | 0 | 4 | 0 | 1 | 0 | 1 | 1 | 2 | 0 | 7 | 40 | 283 | 323 |
| 4:30 PM | 9 | 2 | 2 | 3 | 1 | 1 | 0 | 0 | 1 | 1 | 2 | 0 | 2 | 1 | 0 | 1 | 0 | 2 | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 12 | 31 | 323 | 354 |
| 4:45 PM | 4 | 2 | 3 | 2 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 2 | 0 | 9 | 27 | 277 | 304 |
| 5:00 PM | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 9 | 21 | 226 | 247 |
| 5:15 PM | 8 | 4 | 4 | 2 | 4 | 1 | 2 | 1 | 0 | 3 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 1 | 3 | 1 | 1 | 1 | 0 | 0 | 0 | 9 | 36 | 276 | 312 |
| 5:30 PM | 1 | 3 | 0 | 3 | 4 | 3 | 2 | 0 | 2 | 2 | 1 | 0 | 1 | 0 | 0 | 1 | 3 | 2 | 2 | 1 | 0 | 2 | 1 | 1 | 0 | 0 | 9 | 40 | 280 | 320 |
| 5:45 PM | 4 | 2 | 1 | 2 | 2 | 2 | 0 | 2 | 0 | 2 | 1 | 2 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 12 | 32 | 295 | 327 |




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Start Time 7:00 AM

Major K Street
Minor E. 1st Street
Westbound Left from Major

| | 2.0 - 3.0 | 3.0 - 4.0 | 4.0 - 5.0 | 5.0 - 6.0 | 6.0 - 7.0 | 7.0 - 8.0 | 8.0 - 9.0 | 9.0 - 10.0 | 10.0 - 11.0 | 11.0 - 12.0 | 12.0 - 13.0 | 13.0 - 14.0 | 14.0 - 15.0 | 15.0 - 16.0 | 16.0 - 17.0 | 17.0 - 18.0 | 18.0 - 19.0 | 19.0 - 20.0 | 20.0 - 21.0 | 21.0 - 22.0 | 22.0 - 23.0 | 23.0 - 24.0 | 24.0 - 25.0 | 25.0 - 26.0 | 26.0 - 27.0 | 27.0 - 28.0 | 28.00+ | Critical Gaps (4.1 sec) | Follow-up Gaps (2.2 sec) | Total Gaps |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7:00 AM | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 3 | 1 | 0 | 1 | 1 | 0 | 14 | 33 | 319 | 352 |
| 7:15 AM | 3 | 3 | 1 | 1 | 1 | 2 | 0 | 0 | 1 | 0 | 1 | 2 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 12 | 27 | 304 | 331 |
| 7:30 AM | 3 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 1 | 2 | 1 | 1 | 2 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 10 | 27 | 314 | 341 |
| 7:45 AM | 3 | 2 | 2 | 1 | 2 | 0 | 2 | 2 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 2 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 10 | 30 | 302 | 332 |
| 8:00 AM | 6 | 3 | 0 | 2 | 2 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 10 | 24 | 337 | 361 |
| 8:15 AM | 4 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 2 | 2 | 0 | 1 | 3 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 2 | 1 | 6 | 25 | 291 | 316 |
| 8:30 AM | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 9 | 20 | 331 | 351 |
| 8:45 AM | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 10 | 22 | 322 | 344 |
| 4:00 PM | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 1 | 3 | 3 | 0 | 1 | 1 | 2 | 1 | 1 | 0 | 1 | 1 | 1 | 3 | 1 | 2 | 1 | 0 | 8 | 34 | 311 | 345 |
| 4:15 PM | 4 | 2 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 1 | 13 | 26 | 335 | 361 |
| 4:30 PM | 7 | 5 | 2 | 1 | 1 | 0 | 2 | 2 | 2 | 0 | 4 | 1 | 3 | 0 | 0 | 3 | 0 | 0 | 2 | 1 | 0 | 0 | 1 | 2 | 0 | 1 | 10 | 38 | 277 | 315 |
| 4:45 PM | 0 | 1 | 3 | 1 | 2 | 0 | 1 | 2 | 1 | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 9 | 29 | 313 | 342 |
| 5:00 PM | 3 | 6 | 2 | 3 | 1 | 0 | 7 | 1 | 0 | 0 | 0 | 2 | 1 | 2 | 2 | 1 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 10 | 37 | 279 | 316 |
| 5:15 PM | 4 | 3 | 1 | 0 | 2 | 3 | 2 | 1 | 2 | 0 | 2 | 1 | 2 | 3 | 0 | 1 | 1 | 1 | 1 | 0 | 2 | 1 | 3 | 1 | 0 | 1 | 9 | 40 | 283 | 323 |
| 5:30 PM | 3 | 2 | 1 | 0 | 3 | 1 | 1 | 2 | 0 | 2 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 2 | 0 | 2 | 13 | 33 | 310 | 343 |
| 5:45 PM | 4 | 7 | 3 | 2 | 5 | 2 | 0 | 2 | 2 | 2 | 1 | 1 | 1 | 3 | 2 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 11 | 43 | 264 | 307 |




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Major K Street
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Southbound Right from Minor

| | 2.0 - 3.0 | 3.0 - 4.0 | 4.0 - 5.0 | 5.0 - 6.0 | 6.0 - 7.0 | 7.0 - 8.0 | 8.0 - 9.0 | 9.0 - 10.0 | 10.0 - 11.0 | 11.0 - 12.0 | 12.0 - 13.0 | 13.0 - 14.0 | 14.0 - 15.0 | 15.0 - 16.0 | 16.0 - 17.0 | 17.0 - 18.0 | 18.0 - 19.0 | 19.0 - 20.0 | 20.0 - 21.0 | 21.0 - 22.0 | 22.0 - 23.0 | 23.0 - 24.0 | 24.0 - 25.0 | 25.0 - 26.0 | 26.0 - 27.0 | 27.0 - 28.0 | 28.00+ | Critical Gaps (6.2 sec) | Follow-up Gaps (3.3 sec) | Total Gaps |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7:00 AM | 4 | 1 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 2 | 12 | 20 | 216 | 236 |
| 7:15 AM | 5 | 1 | 2 | 1 | 1 | 4 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 2 | 3 | 0 | 1 | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 10 | 30 | 169 | 199 |
| 7:30 AM | 11 | 2 | 2 | 2 | 1 | 4 | 4 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 11 | 32 | 163 | 195 |
| 7:45 AM | 10 | 5 | 3 | 4 | 2 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 12 | 23 | 171 | 194 |
| 8:00 AM | 10 | 4 | 1 | 4 | 3 | 2 | 3 | 0 | 2 | 1 | 3 | 2 | 2 | 1 | 3 | 1 | 1 | 1 | 0 | 1 | 2 | 0 | 0 | 1 | 3 | 0 | 6 | 38 | 148 | 186 |
| 8:15 AM | 5 | 4 | 5 | 3 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 3 | 0 | 1 | 1 | 1 | 3 | 2 | 1 | 2 | 0 | 0 | 2 | 0 | 1 | 0 | 8 | 29 | 143 | 172 |
| 8:30 AM | 1 | 3 | 2 | 1 | 2 | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 13 | 27 | 188 | 215 |
| 8:45 AM | 4 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 10 | 21 | 192 | 213 |
| 4:00 PM | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 2 | 1 | 0 | 1 | 1 | 2 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 2 | 15 | 31 | 194 | 225 |
| 4:15 PM | 2 | 3 | 5 | 2 | 3 | 4 | 0 | 1 | 1 | 4 | 1 | 1 | 2 | 0 | 0 | 1 | 0 | 0 | 4 | 0 | 1 | 0 | 1 | 1 | 2 | 0 | 7 | 34 | 162 | 196 |
| 4:30 PM | 9 | 2 | 2 | 3 | 1 | 1 | 0 | 0 | 1 | 1 | 2 | 0 | 2 | 1 | 0 | 1 | 0 | 2 | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 12 | 28 | 194 | 222 |
| 4:45 PM | 4 | 2 | 3 | 2 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 2 | 0 | 9 | 23 | 170 | 193 |
| 5:00 PM | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 9 | 19 | 136 | 155 |
| 5:15 PM | 8 | 4 | 4 | 2 | 4 | 1 | 2 | 1 | 0 | 3 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 1 | 3 | 1 | 1 | 1 | 0 | 0 | 0 | 9 | 29 | 160 | 189 |
| 5:30 PM | 1 | 3 | 0 | 3 | 4 | 3 | 2 | 0 | 2 | 2 | 1 | 0 | 1 | 0 | 0 | 1 | 3 | 2 | 2 | 1 | 0 | 2 | 1 | 1 | 0 | 0 | 9 | 36 | 159 | 195 |
| 5:45 PM | 4 | 2 | 1 | 2 | 2 | 2 | 0 | 2 | 0 | 2 | 1 | 2 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 12 | 29 | 173 | 202 |




46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Study Name 186175-C (K St @ E 1st St)
Start Date 06/08/2017
Start Time 7:00 AM

Major K Street
Minor E. 1st Street
Northbound Right from Minor

| | 2.0 - 3.0 | 3.0 - 4.0 | 4.0 - 5.0 | 5.0 - 6.0 | 6.0 - 7.0 | 7.0 - 8.0 | 8.0 - 9.0 | 9.0 - 10.0 | 10.0 - 11.0 | 11.0 - 12.0 | 12.0 - 13.0 | 13.0 - 14.0 | 14.0 - 15.0 | 15.0 - 16.0 | 16.0 - 17.0 | 17.0 - 18.0 | 18.0 - 19.0 | 19.0 - 20.0 | 20.0 - 21.0 | 21.0 - 22.0 | 22.0 - 23.0 | 23.0 - 24.0 | 24.0 - 25.0 | 25.0 - 26.0 | 26.0 - 27.0 | 27.0 - 28.0 | 28.00+ | Critical Gaps (6.2 sec) | Follow-up Gaps (3.3 sec) | Total Gaps |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7:00 AM | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 3 | 1 | 0 | 1 | 1 | 0 | 14 | 29 | 188 | 217 |
| 7:15 AM | 3 | 3 | 1 | 1 | 1 | 2 | 0 | 0 | 1 | 0 | 1 | 2 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 12 | 25 | 186 | 211 |
| 7:30 AM | 3 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 1 | 2 | 1 | 1 | 2 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 10 | 25 | 191 | 216 |
| 7:45 AM | 3 | 2 | 2 | 1 | 2 | 0 | 2 | 2 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 2 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 10 | 27 | 181 | 208 |
| 8:00 AM | 6 | 3 | 0 | 2 | 2 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 10 | 21 | 208 | 229 |
| 8:15 AM | 4 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 2 | 2 | 0 | 1 | 3 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 2 | 1 | 6 | 24 | 176 | 200 |
| 8:30 AM | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 9 | 19 | 206 | 225 |
| 8:45 AM | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 10 | 20 | 198 | 218 |
| 4:00 PM | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 1 | 3 | 3 | 0 | 1 | 1 | 2 | 1 | 1 | 0 | 1 | 1 | 1 | 3 | 1 | 2 | 1 | 0 | 8 | 34 | 179 | 213 |
| 4:15 PM | 4 | 2 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 1 | 13 | 25 | 201 | 226 |
| 4:30 PM | 7 | 5 | 2 | 1 | 1 | 0 | 2 | 2 | 2 | 0 | 4 | 1 | 3 | 0 | 0 | 3 | 0 | 0 | 2 | 1 | 0 | 0 | 1 | 2 | 0 | 1 | 10 | 35 | 160 | 195 |
| 4:45 PM | 0 | 1 | 3 | 1 | 2 | 0 | 1 | 2 | 1 | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 9 | 25 | 188 | 213 |
| 5:00 PM | 3 | 6 | 2 | 3 | 1 | 0 | 7 | 1 | 0 | 0 | 0 | 2 | 1 | 2 | 2 | 1 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 10 | 33 | 159 | 192 |
| 5:15 PM | 4 | 3 | 1 | 0 | 2 | 3 | 2 | 1 | 2 | 0 | 2 | 1 | 2 | 3 | 0 | 1 | 1 | 1 | 1 | 0 | 2 | 1 | 3 | 1 | 0 | 1 | 9 | 39 | 158 | 197 |
| 5:30 PM | 3 | 2 | 1 | 0 | 3 | 1 | 1 | 2 | 0 | 2 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 2 | 0 | 2 | 13 | 30 | 182 | 212 |
| 5:45 PM | 4 | 7 | 3 | 2 | 5 | 2 | 0 | 2 | 2 | 2 | 1 | 1 | 1 | 3 | 2 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 11 | 36 | 149 | 185 |

PRECISION
D A T A
INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Study Name 186175-C (K St @ E 1st St)
Start Date 06/08/2017
Start Time 7:00 AM

Major K Street
Minor E. 1st Street
Through Traffic on Minor

| | 2.0 - 3.0 | 3.0 - 4.0 | 4.0 - 5.0 | 5.0 - 6.0 | 6.0 - 7.0 | 7.0 - 8.0 | 8.0 - 9.0 | 9.0 - 10.0 | 10.0 - 11.0 | 11.0 - 12.0 | 12.0 - 13.0 | 13.0 - 14.0 | 14.0 - 15.0 | 15.0 - 16.0 | 16.0 - 17.0 | 17.0 - 18.0 | 18.0 - 19.0 | 19.0 - 20.0 | 20.0 - 21.0 | 21.0 - 22.0 | 22.0 - 23.0 | 23.0 - 24.0 | 24.0 - 25.0 | 25.0 - 26.0 | 26.0 - 27.0 | 27.0 - 28.0 | 28.00+ | Critical Gaps (6.5 sec) | Follow-up Gaps (4.0 sec) | Total Gaps |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7:00 AM | 6 | 6 | 6 | 4 | 1 | 4 | 3 | 0 | 1 | 0 | 0 | 2 | 3 | 1 | 1 | 1 | 0 | 1 | 2 | 0 | 1 | 1 | 0 | 2 | 1 | 1 | 10 | 36 | 116 | 152 |
| 7:15 AM | 9 | 5 | 3 | 5 | 5 | 6 | 1 | 3 | 2 | 1 | 1 | 3 | 1 | 2 | 2 | 2 | 2 | 0 | 2 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 6 | 40 | 89 | 129 |
| 7:30 AM | 15 | 4 | 5 | 5 | 2 | 5 | 4 | 3 | 4 | 1 | 1 | 2 | 2 | 2 | 3 | 1 | 1 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 5 | 41 | 81 | 122 |
| 7:45 AM | 15 | 8 | 6 | 6 | 3 | 2 | 3 | 2 | 1 | 3 | 1 | 0 | 3 | 1 | 1 | 0 | 2 | 2 | 2 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 6 | 34 | 91 | 125 |
| 8:00 AM | 14 | 8 | 2 | 7 | 4 | 7 | 4 | 1 | 2 | 3 | 4 | 1 | 4 | 2 | 2 | 1 | 1 | 0 | 0 | 2 | 1 | 0 | 0 | 2 | 0 | 0 | 3 | 43 | 71 | 114 |
| 8:15 AM | 11 | 6 | 6 | 5 | 2 | 3 | 0 | 1 | 0 | 5 | 4 | 2 | 2 | 3 | 0 | 1 | 1 | 2 | 1 | 2 | 0 | 0 | 1 | 0 | 0 | 1 | 4 | 34 | 72 | 106 |
| 8:30 AM | 5 | 7 | 4 | 1 | 2 | 1 | 1 | 1 | 3 | 3 | 2 | 3 | 0 | 1 | 2 | 0 | 0 | 1 | 0 | 2 | 2 | 2 | 1 | 0 | 0 | 1 | 7 | 33 | 114 | 147 |
| 8:45 AM | 4 | 1 | 2 | 5 | 2 | 1 | 2 | 1 | 0 | 2 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 2 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 8 | 31 | 117 | 148 |
| 4:00 PM | 4 | 8 | 4 | 0 | 3 | 3 | 1 | 4 | 1 | 3 | 3 | 2 | 2 | 0 | 4 | 2 | 2 | 0 | 1 | 0 | 2 | 1 | 1 | 0 | 1 | 1 | 5 | 41 | 100 | 141 |
| 4:15 PM | 9 | 8 | 3 | 6 | 4 | 5 | 3 | 1 | 0 | 5 | 1 | 2 | 2 | 1 | 1 | 0 | 0 | 2 | 3 | 0 | 0 | 0 | 1 | 0 | 2 | 2 | 6 | 40 | 103 | 143 |
| 4:30 PM | 14 | 12 | 3 | 9 | 4 | 6 | 3 | 1 | 3 | 0 | 3 | 0 | 4 | 0 | 1 | 1 | 3 | 0 | 1 | 0 | 0 | 0 | 1 | 2 | 1 | 1 | 5 | 38 | 79 | 117 |
| 4:45 PM | 3 | 3 | 8 | 1 | 2 | 0 | 3 | 4 | 0 | 2 | 1 | 4 | 1 | 4 | 0 | 2 | 1 | 0 | 1 | 0 | 0 | 2 | 0 | 1 | 0 | 1 | 8 | 36 | 106 | 142 |
| 5:00 PM | 5 | 5 | 2 | 3 | 3 | 4 | 5 | 2 | 1 | 2 | 1 | 2 | 1 | 1 | 4 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 30 | 56 | 86 |
| 5:15 PM | 11 | 5 | 7 | 6 | 4 | 4 | 6 | 4 | 2 | 1 | 4 | 1 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 2 | 1 | 0 | 3 | 1 | 0 | 0 | 3 | 43 | 71 | 114 |
| 5:30 PM | 3 | 9 | 3 | 3 | 8 | 6 | 3 | 3 | 2 | 3 | 3 | 0 | 2 | 0 | 2 | 2 | 3 | 1 | 0 | 1 | 1 | 2 | 0 | 3 | 0 | 1 | 4 | 44 | 87 | 131 |
| 5:45 PM | 11 | 9 | 10 | 6 | 8 | 3 | 1 | 4 | 1 | 4 | 4 | 4 | 2 | 2 | 1 | 2 | 0 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 1 | 1 | 3 | 41 | 65 | 106 |

PRECISION
D A T A
INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Study Name 186175-C (K St @ E 1st St)
Start Date 06/08/2017
Start Time 7:00 AM

Major K Street
Minor E. 1st Street
Left from Minor

| | 2.0 - 3.0 | 3.0 - 4.0 | 4.0 - 5.0 | 5.0 - 6.0 | 6.0 - 7.0 | 7.0 - 8.0 | 8.0 - 9.0 | 9.0 - 10.0 | 10.0 - 11.0 | 11.0 - 12.0 | 12.0 - 13.0 | 13.0 - 14.0 | 14.0 - 15.0 | 15.0 - 16.0 | 16.0 - 17.0 | 17.0 - 18.0 | 18.0 - 19.0 | 19.0 - 20.0 | 20.0 - 21.0 | 21.0 - 22.0 | 22.0 - 23.0 | 23.0 - 24.0 | 24.0 - 25.0 | 25.0 - 26.0 | 26.0 - 27.0 | 27.0 - 28.0 | 28.00+ | Critical Gaps (7.1 sec) | Follow-up Gaps (3.5 sec) | Total Gaps |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7:00 AM | 6 | 6 | 6 | 4 | 1 | 4 | 3 | 0 | 1 | 0 | 0 | 2 | 3 | 1 | 1 | 1 | 0 | 1 | 2 | 0 | 1 | 1 | 0 | 2 | 1 | 1 | 10 | 35 | 128 | 163 |
| 7:15 AM | 9 | 5 | 3 | 5 | 5 | 6 | 1 | 3 | 2 | 1 | 1 | 3 | 1 | 2 | 2 | 2 | 2 | 0 | 2 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 6 | 36 | 97 | 133 |
| 7:30 AM | 15 | 4 | 5 | 5 | 2 | 5 | 4 | 3 | 4 | 1 | 1 | 2 | 2 | 2 | 3 | 1 | 1 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 5 | 38 | 88 | 126 |
| 7:45 AM | 15 | 8 | 6 | 6 | 3 | 2 | 3 | 2 | 1 | 3 | 1 | 0 | 3 | 1 | 1 | 0 | 2 | 2 | 2 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 6 | 32 | 102 | 134 |
| 8:00 AM | 14 | 8 | 2 | 7 | 4 | 7 | 4 | 1 | 2 | 3 | 4 | 1 | 4 | 2 | 2 | 1 | 1 | 0 | 0 | 2 | 1 | 0 | 0 | 2 | 0 | 0 | 3 | 40 | 84 | 124 |
| 8:15 AM | 11 | 6 | 6 | 5 | 2 | 3 | 0 | 1 | 0 | 5 | 4 | 2 | 2 | 3 | 0 | 1 | 1 | 2 | 1 | 2 | 0 | 0 | 1 | 0 | 0 | 1 | 4 | 33 | 79 | 112 |
| 8:30 AM | 5 | 7 | 4 | 1 | 2 | 1 | 1 | 1 | 3 | 3 | 2 | 3 | 0 | 1 | 2 | 0 | 0 | 1 | 0 | 2 | 2 | 2 | 1 | 0 | 0 | 1 | 7 | 33 | 124 | 157 |
| 8:45 AM | 4 | 1 | 2 | 5 | 2 | 1 | 2 | 1 | 0 | 2 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 2 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 8 | 29 | 131 | 160 |
| 4:00 PM | 4 | 8 | 4 | 0 | 3 | 3 | 1 | 4 | 1 | 3 | 3 | 2 | 2 | 0 | 4 | 2 | 2 | 0 | 1 | 0 | 2 | 1 | 1 | 0 | 1 | 1 | 5 | 38 | 111 | 149 |
| 4:15 PM | 9 | 8 | 3 | 6 | 4 | 5 | 3 | 1 | 0 | 5 | 1 | 2 | 2 | 1 | 1 | 0 | 0 | 2 | 3 | 0 | 0 | 0 | 1 | 0 | 2 | 2 | 6 | 36 | 111 | 147 |
| 4:30 PM | 14 | 12 | 3 | 9 | 4 | 6 | 3 | 1 | 3 | 0 | 3 | 0 | 4 | 0 | 1 | 1 | 3 | 0 | 1 | 0 | 0 | 0 | 1 | 2 | 1 | 1 | 5 | 36 | 89 | 125 |
| 4:45 PM | 3 | 3 | 8 | 1 | 2 | 0 | 3 | 4 | 0 | 2 | 1 | 4 | 1 | 4 | 0 | 2 | 1 | 0 | 1 | 0 | 0 | 2 | 0 | 1 | 0 | 1 | 8 | 35 | 115 | 150 |
| 5:00 PM | 5 | 5 | 2 | 3 | 3 | 4 | 5 | 2 | 1 | 2 | 1 | 2 | 1 | 1 | 4 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 27 | 60 | 87 |
| 5:15 PM | 11 | 5 | 7 | 6 | 4 | 4 | 6 | 4 | 2 | 1 | 4 | 1 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 2 | 1 | 0 | 3 | 1 | 0 | 0 | 3 | 41 | 78 | 119 |
| 5:30 PM | 3 | 9 | 3 | 3 | 8 | 6 | 3 | 3 | 2 | 3 | 3 | 0 | 2 | 0 | 2 | 2 | 3 | 1 | 0 | 1 | 1 | 2 | 0 | 3 | 0 | 1 | 4 | 42 | 98 | 140 |
| 5:45 PM | 11 | 9 | 10 | 6 | 8 | 3 | 1 | 4 | 1 | 4 | 4 | 4 | 2 | 2 | 1 | 2 | 0 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 1 | 1 | 3 | 37 | 72 | 109 |

| Intersection | Approach | AM Peak Period (7 - 9 AM) | | | PM Peak Period (4 -6 PM) | | |
|---|---|---|---|---|---|---|---|
| | | Weighted Average | Median | Synchro | Weighted Average | Median | Synchro |
| L Street at East 2nd Street | Eastbound Right from Minor | 10.8 | 4.5 | 6.5 | 7.9 | 3.5 | 6.2 |
| | Left from Minor | 5.6 | 3.5 | 7.1 | 5.6 | 3.5 | 7.1 |
| | Westbound Right from Minor | 6.5 | 3.5 | 6.2 | 8.1 | 3.5 | 6.2 |
| L Street at East 3rd Street | Eastbound Right from Minor | 10.3 | 4.5 | 6.3 | 7.3 | 3.5 | 6.2 |
| | Left from Minor | 5.7 | 3.5 | 7.1 | 5.9 | 3.5 | 7.1 |
| | Westbound Right from Minor | 6.8 | 3.5 | 6.2 | 8.7 | 3.5 | 6.2 |
| East 1st Street at K Street | Northbound Right from Minor | 17.6 | 10.5 | 6.2 | 16.3 | 10.5 | 6.2 |
| | Left from Minor | 11.7 | 7.5 | 7.3 | 11.4 | 7.5 | 7.1 |
| | Southbound Right from Minor | 15.2 | 7.5 | 6.5 | 15.9 | 9.5 | 6.2 |

PREPARED BY: CD

DATE:

776 Summer St. South Boston

PM Counts 8/2/2016 5:00-5:30PM

PAGE NO.:

PROJECT ACTION NOTES

PROJECT PLANNING NOTES

Power Hase St

| Right IN | Left IN | Right out | Left out |
|---|---|---|---|
| 11 | 2 | 6 | 15 |

Elkin St

| Right IN | Left IN | Right out | Left out |
|---|---|---|---|
| 8 | 1 | 5 | 12 |

PREPARED BY CD

DATE

776 Summer St. South Boston

AM Counts 8/3/2016 8:30-9:00AM

PAGE NO.

PROJECT ACTION NOTES

PROJECT PLANNING NOTES

Power House St

| Right IN | Left IN | Right Out | Left Out |
|---|---|---|---|
| 11 | 2 | 5 | 51 |

Elkin St

| Right IN | Left IN | Right Out | Left Out |
|---|---|---|---|
| 10 | 3 | 6 | 4 |

Summer Street at DFC and Driveways - TMC
L Street Station Redevelopment (Project #13656.00)

Tuesday, October 2, 2017

| Time Period | North Driveway to Parking Lot | | | | South Driveway to Parking Lot | | | | Dedicated Freight Corridor | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | IN's | | OUT's | | IN's | | OUT's | | IN's | | OUT's | |
| | Right Turn | Left Turn | Right Turn | Left Turn | Right Turn | Left Turn | Right Turn | Left Turn | Right Turn | Left Turn | Right Turn | Left Turn |
| 8:00AM – 8:15AM | | 1 (1) | | 1 (1) | | | | | II (2) | 𝍸 𝍸 𝍸 𝍸 I (21) | 𝍸 𝍸 III (13) | 𝍸 (5) |
| 8:15AM – 8:30AM | | | | 𝍸 𝍸 𝍸 I (16) | | | | I (1) | I (1) | 𝍸 𝍸 II (12) | IIII (4) | 𝍸 I (6) |
| 8:30AM – 8:45AM | II (2) | | I | 𝍸 𝍸 I (11) | | | | | II (2) | 𝍸 𝍸 III (13) | 𝍸 𝍸 IIII (14) | I (1) |
| 8:45AM – 9:00AM | | | | III (3) | I (1) | | | | | 𝍸 𝍸 I (11) | 𝍸 𝍸 𝍸 𝍸 III (23) | III (3) |

Queue Length Notes:

- bike lane on east side of Summer St
- Max queueing of trucks making left turns aprox. 4
- Many (at least 6 between 8:15 - 8:30) FedEx trucks came out of garage door south of south driveway
- a little before 8:30, most of the FedEx trucks were dispatched
- Visibility was blocked to south Driveway when a truck was at red light
- queueing on Summer St NB to ~~street~~ block right turns out of freight cor (around 8:35)
  → ~~one~~ times blocked entire intersection
- the person made a R turn in the freight corridor (I did not count that person)

Summer Street at DFC and Driveways - TMC
L Street Station Redevelopment (Project #13656.00)

Tuesday, October 2, 2017

| Time Period | North Driveway to Parking Lot | | | | South Driveway to Parking Lot | | | | Dedicated Freight Corridor | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | IN's | | OUT's | | IN's | | OUT's | | IN's | | OUT's | |
| | Right Turn | Left Turn | Right Turn | Left Turn | Right Turn | Left Turn | Right Turn | Left Turn | Right Turn | Left Turn | Right Turn | Left Turn |
| 5:00PM – 5:15PM | III (3) | IIII (4) | I (1) | IIII I (6) | | | I (1) | | I (1) | | IIII I (6) | IIII II (8) |
| 5:15PM – 5:30PM | IIII (4) | | II (2) | III (3) | | | III (3) | | | | I (1) | |
| 5:30PM – 5:45PM | II (2) | II (2) | III (2) | IIII (4) | | | I (1) | II (2) | II (2) | | | IIII II (7) |
| 5:45PM – 6:00PM | IIII (5) | | | IIII IIII (9) | | | I (1) | II (2) | I (1) | I (1) | III (3) | I (1) |

Queue Length Notes:

- The shoulder on west of Summer St is being used as bike lane

PDI File #: **175708 A**
Location: **N: Summer Street S: Summer Street**
Location: **E: Drydock Avenue W: Pappas Way**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Cars, Heavy Vehicles, and Buses (Combined)

| | Summer Street | | | | | Drydock Avenue | | | | | Summer Street | | | | | Pappas Way | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 31 | 128 | 30 | 1 | 190 | 18 | 10 | 13 | 0 | 41 | 43 | 251 | 9 | 0 | 303 | 1 | 10 | 32 | 0 | 43 | 577 |
| 7:15 AM | 33 | 92 | 29 | 2 | 156 | 23 | 4 | 25 | 0 | 52 | 30 | 221 | 5 | 0 | 256 | 1 | 4 | 31 | 0 | 36 | 500 |
| 7:30 AM | 23 | 91 | 33 | 2 | 149 | 28 | 18 | 24 | 0 | 70 | 48 | 164 | 7 | 0 | 219 | 0 | 19 | 36 | 0 | 55 | 493 |
| 7:45 AM | 28 | 95 | 24 | 0 | 147 | 20 | 8 | 26 | 0 | 54 | 50 | 180 | 2 | 0 | 232 | 1 | 18 | 30 | 0 | 49 | 482 |
| Total | 115 | 406 | 116 | 5 | 642 | 89 | 40 | 88 | 0 | 217 | 171 | 816 | 23 | 0 | 1010 | 3 | 51 | 129 | 0 | 183 | 2052 |
| 8:00 AM | 26 | 120 | 43 | 0 | 189 | 16 | 13 | 45 | 0 | 74 | 57 | 199 | 1 | 0 | 257 | 2 | 32 | 32 | 0 | 66 | 586 |
| 8:15 AM | 36 | 114 | 53 | 0 | 203 | 18 | 12 | 20 | 0 | 50 | 72 | 247 | 4 | 0 | 323 | 1 | 26 | 41 | 0 | 68 | 644 |
| 8:30 AM | 25 | 119 | 59 | 4 | 207 | 21 | 11 | 30 | 0 | 62 | 64 | 238 | 5 | 0 | 307 | 2 | 15 | 24 | 0 | 41 | 617 |
| 8:45 AM | 36 | 116 | 64 | 1 | 217 | 27 | 9 | 32 | 0 | 68 | 62 | 207 | 0 | 0 | 269 | 1 | 19 | 36 | 0 | 56 | 610 |
| Total | 123 | 469 | 219 | 5 | 816 | 82 | 45 | 127 | 0 | 254 | 255 | 891 | 10 | 0 | 1156 | 6 | 92 | 133 | 0 | 231 | 2457 |
| Grand Total | 238 | 875 | 335 | 10 | 1458 | 171 | 85 | 215 | 0 | 471 | 426 | 1707 | 33 | 0 | 2166 | 9 | 143 | 262 | 0 | 414 | 4509 |
| Approach % | 16.3 | 60.0 | 23.0 | 0.7 | | 36.3 | 18.0 | 45.6 | 0.0 | | 19.7 | 78.8 | 1.5 | 0.0 | | 2.2 | 34.5 | 63.3 | 0.0 | | |
| Total % | 5.3 | 19.4 | 7.4 | 0.2 | 32.3 | 3.8 | 1.9 | 4.8 | 0.0 | 10.4 | 9.4 | 37.9 | 0.7 | 0.0 | 48.0 | 0.2 | 3.2 | 5.8 | 0.0 | 9.2 | |
| Exiting Leg Total | | | | | 2150 | | | | | 904 | | | | | 1099 | | | | | 356 | 4509 |
| Cars | 223 | 775 | 299 | 10 | 1307 | 130 | 65 | 193 | 0 | 388 | 412 | 1606 | 32 | 0 | 2050 | 9 | 128 | 234 | 0 | 371 | 4116 |
| % Cars | 93.7 | 88.6 | 89.3 | 100.0 | 89.6 | 76.0 | 76.5 | 89.8 | 0.0 | 82.4 | 96.7 | 94.1 | 97.0 | 0.0 | 94.6 | 100.0 | 89.5 | 89.3 | 0.0 | 89.6 | 91.3 |
| Exiting Leg Total | | | | | 1980 | | | | | 839 | | | | | 977 | | | | | 320 | 4116 |
| Heavy Vehicles | 14 | 65 | 26 | 0 | 105 | 31 | 19 | 20 | 0 | 70 | 10 | 70 | 1 | 0 | 81 | 0 | 15 | 28 | 0 | 43 | 299 |
| % Heavy Vehicles | 5.9 | 7.4 | 7.8 | 0.0 | 7.2 | 18.1 | 22.4 | 9.3 | 0.0 | 14.9 | 2.3 | 4.1 | 3.0 | 0.0 | 3.7 | 0.0 | 10.5 | 10.7 | 0.0 | 10.4 | 6.6 |
| Exiting Leg Total | | | | | 129 | | | | | 51 | | | | | 85 | | | | | 34 | 299 |
| Buses | 1 | 35 | 10 | 0 | 46 | 10 | 1 | 2 | 0 | 13 | 4 | 31 | 0 | 0 | 35 | 0 | 0 | 0 | 0 | 0 | 94 |
| % Buses | 0.4 | 4.0 | 3.0 | 0.0 | 3.2 | 5.8 | 1.2 | 0.9 | 0.0 | 2.8 | 0.9 | 1.8 | 0.0 | 0.0 | 1.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.1 |
| Exiting Leg Total | | | | | 41 | | | | | 14 | | | | | 37 | | | | | 2 | 94 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 8:00 AM | Summer Street | | | | | Drydock Avenue | | | | | Summer Street | | | | | Pappas Way | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 8:00 AM | 26 | 120 | 43 | 0 | 189 | 16 | 13 | 45 | 0 | 74 | 57 | 199 | 1 | 0 | 257 | 2 | 32 | 32 | 0 | 66 | 586 |
| 8:15 AM | 36 | 114 | 53 | 0 | 203 | 18 | 12 | 20 | 0 | 50 | 72 | 247 | 4 | 0 | 323 | 1 | 26 | 41 | 0 | 68 | 644 |
| 8:30 AM | 25 | 119 | 59 | 4 | 207 | 21 | 11 | 30 | 0 | 62 | 64 | 238 | 5 | 0 | 307 | 2 | 15 | 24 | 0 | 41 | 617 |
| 8:45 AM | 36 | 116 | 64 | 1 | 217 | 27 | 9 | 32 | 0 | 68 | 62 | 207 | 0 | 0 | 269 | 1 | 19 | 36 | 0 | 56 | 610 |
| Total Volume | 123 | 469 | 219 | 5 | 816 | 82 | 45 | 127 | 0 | 254 | 255 | 891 | 10 | 0 | 1156 | 6 | 92 | 133 | 0 | 231 | 2457 |
| % Approach Total | 15.1 | 57.5 | 26.8 | 0.6 | | 32.3 | 17.7 | 50.0 | 0.0 | | 22.1 | 77.1 | 0.9 | 0.0 | | 2.6 | 39.8 | 57.6 | 0.0 | | |
| PHF | 0.854 | 0.977 | 0.855 | 0.313 | 0.940 | 0.759 | 0.865 | 0.706 | 0.000 | 0.858 | 0.885 | 0.902 | 0.500 | 0.000 | 0.895 | 0.750 | 0.719 | 0.811 | 0.000 | 0.849 | 0.954 |
| Cars | 116 | 412 | 201 | 5 | 734 | 71 | 37 | 117 | 0 | 225 | 249 | 823 | 10 | 0 | 1082 | 6 | 82 | 119 | 0 | 207 | 2248 |
| Cars % | 94.3 | 87.8 | 91.8 | 100.0 | 90.0 | 86.6 | 82.2 | 92.1 | 0.0 | 88.6 | 97.6 | 92.4 | 100.0 | 0.0 | 93.6 | 100.0 | 89.1 | 89.5 | 0.0 | 89.6 | 91.5 |
| Heavy Vehicles | 6 | 33 | 15 | 0 | 54 | 8 | 8 | 8 | 0 | 24 | 3 | 54 | 0 | 0 | 57 | 0 | 10 | 14 | 0 | 24 | 159 |
| Heavy Vehicles % | 4.9 | 7.0 | 6.8 | 0.0 | 6.6 | 9.8 | 17.8 | 6.3 | 0.0 | 9.4 | 1.2 | 6.1 | 0.0 | 0.0 | 4.9 | 0.0 | 10.9 | 10.5 | 0.0 | 10.4 | 6.5 |
| Buses | 1 | 24 | 3 | 0 | 28 | 3 | 0 | 2 | 0 | 5 | 3 | 14 | 0 | 0 | 17 | 0 | 0 | 0 | 0 | 0 | 50 |
| Buses % | 0.8 | 5.1 | 1.4 | 0.0 | 3.4 | 3.7 | 0.0 | 1.6 | 0.0 | 2.0 | 1.2 | 1.6 | 0.0 | 0.0 | 1.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 |
| Cars Enter Leg | 116 | 412 | 201 | 5 | 734 | 71 | 37 | 117 | 0 | 225 | 249 | 823 | 10 | 0 | 1082 | 6 | 82 | 119 | 0 | 207 | 2248 |
| Heavy Enter Leg | 6 | 33 | 15 | 0 | 54 | 8 | 8 | 8 | 0 | 24 | 3 | 54 | 0 | 0 | 57 | 0 | 10 | 14 | 0 | 24 | 159 |
| Bus Enter Leg | 1 | 24 | 3 | 0 | 28 | 3 | 0 | 2 | 0 | 5 | 3 | 14 | 0 | 0 | 17 | 0 | 0 | 0 | 0 | 0 | 50 |
| Total Entering Leg | 123 | 469 | 219 | 5 | 816 | 82 | 45 | 127 | 0 | 254 | 255 | 891 | 10 | 0 | 1156 | 6 | 92 | 133 | 0 | 231 | 2457 |
| Cars Exiting Leg | | | | | 1018 | | | | | 532 | | | | | 535 | | | | | 163 | 2248 |
| Heavy Exiting Leg | | | | | 76 | | | | | 28 | | | | | 41 | | | | | 14 | 159 |
| Buses Exiting Leg | | | | | 17 | | | | | 6 | | | | | 26 | | | | | 1 | 50 |
| Total Exiting Leg | | | | | 1111 | | | | | 566 | | | | | 602 | | | | | 178 | 2457 |

PDI File #: **175708 A**
Location: **N: Summer Street S: Summer Street**
Location: **E: Drydock Avenue W: Pappas Way**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Cars

| | Summer Street | | | | | Drydock Avenue | | | | | Summer Street | | | | | Pappas Way | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 30 | 116 | 25 | 1 | 172 | 11 | 5 | 10 | 0 | 26 | 40 | 242 | 9 | 0 | 291 | 1 | 10 | 28 | 0 | 39 | 528 |
| 7:15 AM | 31 | 82 | 25 | 2 | 140 | 11 | 4 | 22 | 0 | 37 | 28 | 213 | 5 | 0 | 246 | 1 | 4 | 24 | 0 | 29 | 452 |
| 7:30 AM | 21 | 83 | 26 | 2 | 132 | 23 | 14 | 20 | 0 | 57 | 47 | 156 | 7 | 0 | 210 | 0 | 15 | 35 | 0 | 50 | 449 |
| 7:45 AM | 25 | 82 | 22 | 0 | 129 | 14 | 5 | 24 | 0 | 43 | 48 | 172 | 1 | 0 | 221 | 1 | 17 | 28 | 0 | 46 | 439 |
| Total | 107 | 363 | 98 | 5 | 573 | 59 | 28 | 76 | 0 | 163 | 163 | 783 | 22 | 0 | 968 | 3 | 46 | 115 | 0 | 164 | 1868 |
| 8:00 AM | 23 | 105 | 40 | 0 | 168 | 12 | 10 | 41 | 0 | 63 | 56 | 192 | 1 | 0 | 249 | 2 | 30 | 30 | 0 | 62 | 542 |
| 8:15 AM | 34 | 100 | 50 | 0 | 184 | 15 | 10 | 20 | 0 | 45 | 71 | 237 | 4 | 0 | 312 | 1 | 23 | 36 | 0 | 60 | 601 |
| 8:30 AM | 25 | 104 | 53 | 4 | 186 | 19 | 11 | 28 | 0 | 58 | 60 | 215 | 5 | 0 | 280 | 2 | 15 | 24 | 0 | 41 | 565 |
| 8:45 AM | 34 | 103 | 58 | 1 | 196 | 25 | 6 | 28 | 0 | 59 | 62 | 179 | 0 | 0 | 241 | 1 | 14 | 29 | 0 | 44 | 540 |
| Total | 116 | 412 | 201 | 5 | 734 | 71 | 37 | 117 | 0 | 225 | 249 | 823 | 10 | 0 | 1082 | 6 | 82 | 119 | 0 | 207 | 2248 |
| Grand Total | 223 | 775 | 299 | 10 | 1307 | 130 | 65 | 193 | 0 | 388 | 412 | 1606 | 32 | 0 | 2050 | 9 | 128 | 234 | 0 | 371 | 4116 |
| Approach % | 17.1 | 59.3 | 22.9 | 0.8 | | 33.5 | 16.8 | 49.7 | 0.0 | | 20.1 | 78.3 | 1.6 | 0.0 | | 2.4 | 34.5 | 63.1 | 0.0 | | |
| Total % | 5.4 | 18.8 | 7.3 | 0.2 | 31.8 | 3.2 | 1.6 | 4.7 | 0.0 | 9.4 | 10.0 | 39.0 | 0.8 | 0.0 | 49.8 | 0.2 | 3.1 | 5.7 | 0.0 | 9.0 | |
| Exiting Leg Total | | | | | 1980 | | | | | 839 | | | | | 977 | | | | | 320 | 4116 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 8:00 AM | Summer Street | | | | | Drydock Avenue | | | | | Summer Street | | | | | Pappas Way | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 8:00 AM | 23 | 105 | 40 | 0 | 168 | 12 | 10 | 41 | 0 | 63 | 56 | 192 | 1 | 0 | 249 | 2 | 30 | 30 | 0 | 62 | 542 |
| 8:15 AM | 34 | 100 | 50 | 0 | 184 | 15 | 10 | 20 | 0 | 45 | 71 | 237 | 4 | 0 | 312 | 1 | 23 | 36 | 0 | 60 | 601 |
| 8:30 AM | 25 | 104 | 53 | 4 | 186 | 19 | 11 | 28 | 0 | 58 | 60 | 215 | 5 | 0 | 280 | 2 | 15 | 24 | 0 | 41 | 565 |
| 8:45 AM | 34 | 103 | 58 | 1 | 196 | 25 | 6 | 28 | 0 | 59 | 62 | 179 | 0 | 0 | 241 | 1 | 14 | 29 | 0 | 44 | 540 |
| Total Volume | 116 | 412 | 201 | 5 | 734 | 71 | 37 | 117 | 0 | 225 | 249 | 823 | 10 | 0 | 1082 | 6 | 82 | 119 | 0 | 207 | 2248 |
| % Approach Total | 15.8 | 56.1 | 27.4 | 0.7 | | 31.6 | 16.4 | 52.0 | 0.0 | | 23.0 | 76.1 | 0.9 | 0.0 | | 2.9 | 39.6 | 57.5 | 0.0 | | |
| PHF | 0.853 | 0.981 | 0.866 | 0.313 | 0.936 | 0.710 | 0.841 | 0.713 | 0.000 | 0.893 | 0.877 | 0.868 | 0.500 | 0.000 | 0.867 | 0.750 | 0.683 | 0.826 | 0.000 | 0.835 | 0.935 |
| Entering Leg | 116 | 412 | 201 | 5 | 734 | 71 | 37 | 117 | 0 | 225 | 249 | 823 | 10 | 0 | 1082 | 6 | 82 | 119 | 0 | 207 | 2248 |
| Exiting Leg | | | | | 1018 | | | | | 532 | | | | | 535 | | | | | 163 | 2248 |
| Total | | | | | 1752 | | | | | 757 | | | | | 1617 | | | | | 370 | 4496 |

PDI File #: **175708 A**
Location: **N: Summer Street S: Summer Street**
Location: **E: Drydock Avenue W: Pappas Way**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Heavy Vehicles

| | Summer Street | | | | | Drydock Avenue | | | | | Summer Street | | | | | Pappas Way | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 1 | 9 | 4 | 0 | 14 | 5 | 5 | 3 | 0 | 13 | 3 | 5 | 0 | 0 | 8 | 0 | 0 | 4 | 0 | 4 | 39 |
| 7:15 AM | 2 | 6 | 3 | 0 | 11 | 10 | 0 | 3 | 0 | 13 | 2 | 5 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 7 | 38 |
| 7:30 AM | 2 | 6 | 3 | 0 | 11 | 3 | 3 | 4 | 0 | 10 | 1 | 1 | 0 | 0 | 2 | 0 | 4 | 1 | 0 | 5 | 28 |
| 7:45 AM | 3 | 11 | 1 | 0 | 15 | 5 | 3 | 2 | 0 | 10 | 1 | 5 | 1 | 0 | 7 | 0 | 1 | 2 | 0 | 3 | 35 |
| Total | 8 | 32 | 11 | 0 | 51 | 23 | 11 | 12 | 0 | 46 | 7 | 16 | 1 | 0 | 24 | 0 | 5 | 14 | 0 | 19 | 140 |
| 8:00 AM | 2 | 9 | 2 | 0 | 13 | 4 | 3 | 4 | 0 | 11 | 1 | 3 | 0 | 0 | 4 | 0 | 2 | 2 | 0 | 4 | 32 |
| 8:15 AM | 2 | 9 | 3 | 0 | 14 | 1 | 2 | 0 | 0 | 3 | 0 | 7 | 0 | 0 | 7 | 0 | 3 | 5 | 0 | 8 | 32 |
| 8:30 AM | 0 | 5 | 5 | 0 | 10 | 2 | 0 | 2 | 0 | 4 | 2 | 19 | 0 | 0 | 21 | 0 | 0 | 0 | 0 | 0 | 35 |
| 8:45 AM | 2 | 10 | 5 | 0 | 17 | 1 | 3 | 2 | 0 | 6 | 0 | 25 | 0 | 0 | 25 | 0 | 5 | 7 | 0 | 12 | 60 |
| Total | 6 | 33 | 15 | 0 | 54 | 8 | 8 | 8 | 0 | 24 | 3 | 54 | 0 | 0 | 57 | 0 | 10 | 14 | 0 | 24 | 159 |
| Grand Total | 14 | 65 | 26 | 0 | 105 | 31 | 19 | 20 | 0 | 70 | 10 | 70 | 1 | 0 | 81 | 0 | 15 | 28 | 0 | 43 | 299 |
| Approach % | 13.3 | 61.9 | 24.8 | 0.0 | | 44.3 | 27.1 | 28.6 | 0.0 | | 12.3 | 86.4 | 1.2 | 0.0 | | 0.0 | 34.9 | 65.1 | 0.0 | | |
| Total % | 4.7 | 21.7 | 8.7 | 0.0 | 35.1 | 10.4 | 6.4 | 6.7 | 0.0 | 23.4 | 3.3 | 23.4 | 0.3 | 0.0 | 27.1 | 0.0 | 5.0 | 9.4 | 0.0 | 14.4 | |
| Exiting Leg Total | | | | | 129 | | | | | 51 | | | | | 85 | | | | | 34 | 299 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 8:00 AM | Summer Street | | | | | Drydock Avenue | | | | | Summer Street | | | | | Pappas Way | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 8:00 AM | 2 | 9 | 2 | 0 | 13 | 4 | 3 | 4 | 0 | 11 | 1 | 3 | 0 | 0 | 4 | 0 | 2 | 2 | 0 | 4 | 32 |
| 8:15 AM | 2 | 9 | 3 | 0 | 14 | 1 | 2 | 0 | 0 | 3 | 0 | 7 | 0 | 0 | 7 | 0 | 3 | 5 | 0 | 8 | 32 |
| 8:30 AM | 0 | 5 | 5 | 0 | 10 | 2 | 0 | 2 | 0 | 4 | 2 | 19 | 0 | 0 | 21 | 0 | 0 | 0 | 0 | 0 | 35 |
| 8:45 AM | 2 | 10 | 5 | 0 | 17 | 1 | 3 | 2 | 0 | 6 | 0 | 25 | 0 | 0 | 25 | 0 | 5 | 7 | 0 | 12 | 60 |
| Total Volume | 6 | 33 | 15 | 0 | 54 | 8 | 8 | 8 | 0 | 24 | 3 | 54 | 0 | 0 | 57 | 0 | 10 | 14 | 0 | 24 | 159 |
| % Approach Total | 11.1 | 61.1 | 27.8 | 0.0 | | 33.3 | 33.3 | 33.3 | 0.0 | | 5.3 | 94.7 | 0.0 | 0.0 | | 0.0 | 41.7 | 58.3 | 0.0 | | |
| PHF | 0.750 | 0.825 | 0.750 | 0.000 | 0.794 | 0.500 | 0.667 | 0.500 | 0.000 | 0.545 | 0.375 | 0.540 | 0.000 | 0.000 | 0.570 | 0.000 | 0.500 | 0.500 | 0.000 | 0.500 | 0.663 |
| Entering Leg | 6 | 33 | 15 | 0 | 54 | 8 | 8 | 8 | 0 | 24 | 3 | 54 | 0 | 0 | 57 | 0 | 10 | 14 | 0 | 24 | 159 |
| Exiting Leg | | | | | 76 | | | | | 28 | | | | | 41 | | | | | 14 | 159 |
| Total | | | | | 130 | | | | | 52 | | | | | 98 | | | | | 38 | 318 |

PDI File #: **175708 A**
Location: **N: Summer Street S: Summer Street**
Location: **E: Drydock Avenue W: Pappas Way**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Buses

| | Summer Street | | | | | Drydock Avenue | | | | | Summer Street | | | | | Pappas Way | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 3 | 1 | 0 | 4 | 2 | 0 | 0 | 0 | 2 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 10 |
| 7:15 AM | 0 | 4 | 1 | 0 | 5 | 2 | 0 | 0 | 0 | 2 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 10 |
| 7:30 AM | 0 | 2 | 4 | 0 | 6 | 2 | 1 | 0 | 0 | 3 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 16 |
| 7:45 AM | 0 | 2 | 1 | 0 | 3 | 1 | 0 | 0 | 0 | 1 | 1 | 3 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 8 |
| Total | 0 | 11 | 7 | 0 | 18 | 7 | 1 | 0 | 0 | 8 | 1 | 17 | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 44 |
| 8:00 AM | 1 | 6 | 1 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 12 |
| 8:15 AM | 0 | 5 | 0 | 0 | 5 | 2 | 0 | 0 | 0 | 2 | 1 | 3 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 11 |
| 8:30 AM | 0 | 10 | 1 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 17 |
| 8:45 AM | 0 | 3 | 1 | 0 | 4 | 1 | 0 | 2 | 0 | 3 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 10 |
| Total | 1 | 24 | 3 | 0 | 28 | 3 | 0 | 2 | 0 | 5 | 3 | 14 | 0 | 0 | 17 | 0 | 0 | 0 | 0 | 0 | 50 |
| Grand Total | 1 | 35 | 10 | 0 | 46 | 10 | 1 | 2 | 0 | 13 | 4 | 31 | 0 | 0 | 35 | 0 | 0 | 0 | 0 | 0 | 94 |
| Approach % | 2.2 | 76.1 | 21.7 | 0.0 | | 76.9 | 7.7 | 15.4 | 0.0 | | 11.4 | 88.6 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total % | 1.1 | 37.2 | 10.6 | 0.0 | 48.9 | 10.6 | 1.1 | 2.1 | 0.0 | 13.8 | 4.3 | 33.0 | 0.0 | 0.0 | 37.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Exiting Leg Total | | | | | 41 | | | | | 14 | | | | | 37 | | | | | 2 | 94 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 8:00 AM | Summer Street | | | | | Drydock Avenue | | | | | Summer Street | | | | | Pappas Way | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 8:00 AM | 1 | 6 | 1 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 12 |
| 8:15 AM | 0 | 5 | 0 | 0 | 5 | 2 | 0 | 0 | 0 | 2 | 1 | 3 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 11 |
| 8:30 AM | 0 | 10 | 1 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 17 |
| 8:45 AM | 0 | 3 | 1 | 0 | 4 | 1 | 0 | 2 | 0 | 3 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 10 |
| Total Volume | 1 | 24 | 3 | 0 | 28 | 3 | 0 | 2 | 0 | 5 | 3 | 14 | 0 | 0 | 17 | 0 | 0 | 0 | 0 | 0 | 50 |
| % Approach Total | 3.6 | 85.7 | 10.7 | 0.0 | | 60.0 | 0.0 | 40.0 | 0.0 | | 17.6 | 82.4 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | |
| PHF | 0.250 | 0.600 | 0.750 | 0.000 | 0.636 | 0.375 | 0.000 | 0.250 | 0.000 | 0.417 | 0.375 | 0.875 | 0.000 | 0.000 | 0.708 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.735 |
| Entering Leg | 1 | 24 | 3 | 0 | 28 | 3 | 0 | 2 | 0 | 5 | 3 | 14 | 0 | 0 | 17 | 0 | 0 | 0 | 0 | 0 | 50 |
| Exiting Leg | | | | | 17 | | | | | 6 | | | | | 26 | | | | | 1 | 50 |
| Total | | | | | 45 | | | | | 11 | | | | | 43 | | | | | 1 | 100 |

PDI File #: **175708 A**
Location: **N: Summer Street S: Summer Street**
Location: **E: Drydock Avenue W: Pappas Way**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Bicycles (on Roadway and Crosswalks)

| | Summer Street | | | | | | | Drydock Avenue | | | | | | | Summer Street | | | | | | | Pappas Way | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | East | | | | | | | South | | | | | | | West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:00 AM | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 7:15 AM | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 5 |
| 7:30 AM | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 7 |
| 7:45 AM | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 3 | 3 | 0 | 0 | 0 | 0 | 6 | 0 | 2 | 1 | 0 | 0 | 0 | 3 | 13 |
| Total | 1 | 2 | 3 | 0 | 0 | 0 | 6 | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 3 | 15 | 0 | 0 | 0 | 0 | 18 | 0 | 2 | 3 | 0 | 0 | 0 | 5 | 31 |
| 8:00 AM | 0 | 2 | 3 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 3 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 8:15 AM | 0 | 1 | 4 | 0 | 0 | 0 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 4 | 0 | 0 | 0 | 1 | 7 | 0 | 3 | 1 | 0 | 0 | 0 | 4 | 18 |
| 8:30 AM | 0 | 4 | 5 | 0 | 0 | 0 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 2 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 16 |
| 8:45 AM | 0 | 5 | 4 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| Total | 0 | 12 | 16 | 0 | 0 | 0 | 28 | 3 | 0 | 0 | 0 | 0 | 0 | 3 | 6 | 7 | 0 | 0 | 3 | 3 | 19 | 0 | 4 | 1 | 0 | 0 | 0 | 5 | 55 |
| Grand Total | 1 | 14 | 19 | 0 | 0 | 0 | 34 | 4 | 0 | 0 | 0 | 1 | 0 | 5 | 9 | 22 | 0 | 0 | 3 | 3 | 37 | 0 | 6 | 4 | 0 | 0 | 0 | 10 | 86 |
| Approach % | 2.9 | 41.2 | 55.9 | 0.0 | 0.0 | 0.0 | | 80.0 | 0.0 | 0.0 | 0.0 | 20.0 | 0.0 | | 24.3 | 59.5 | 0.0 | 0.0 | 8.1 | 8.1 | | 0.0 | 60.0 | 40.0 | 0.0 | 0.0 | 0.0 | | |
| Total % | 1.2 | 16.3 | 22.1 | 0.0 | 0.0 | 0.0 | 39.5 | 4.7 | 0.0 | 0.0 | 0.0 | 1.2 | 0.0 | 5.8 | 10.5 | 25.6 | 0.0 | 0.0 | 3.5 | 3.5 | 43.0 | 0.0 | 7.0 | 4.7 | 0.0 | 0.0 | 0.0 | 11.6 | |
| Exiting Leg Total | | | | | | | 30 | | | | | | | 35 | | | | | | | 20 | | | | | | | 1 | 86 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:45 AM | Summer Street | | | | | | | Drydock Avenue | | | | | | | Summer Street | | | | | | | Pappas Way | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | East | | | | | | | South | | | | | | | West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:45 AM | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 3 | 3 | 0 | 0 | 0 | 0 | 6 | 0 | 2 | 1 | 0 | 0 | 0 | 3 | 13 |
| 8:00 AM | 0 | 2 | 3 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 3 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 8:15 AM | 0 | 1 | 4 | 0 | 0 | 0 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 4 | 0 | 0 | 0 | 1 | 7 | 0 | 3 | 1 | 0 | 0 | 0 | 4 | 18 |
| 8:30 AM | 0 | 4 | 5 | 0 | 0 | 0 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 2 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 16 |
| Total Volume | 0 | 7 | 14 | 0 | 0 | 0 | 21 | 4 | 0 | 0 | 0 | 1 | 0 | 5 | 7 | 9 | 0 | 0 | 3 | 3 | 22 | 0 | 6 | 2 | 0 | 0 | 0 | 8 | 56 |
| % Approach Total | 0.0 | 33.3 | 66.7 | 0.0 | 0.0 | 0.0 | | 80.0 | 0.0 | 0.0 | 0.0 | 20.0 | 0.0 | | 31.8 | 40.9 | 0.0 | 0.0 | 13.6 | 13.6 | | 0.0 | 75.0 | 25.0 | 0.0 | 0.0 | 0.0 | | |
| PHF | 0.000 | 0.438 | 0.700 | 0.000 | 0.000 | 0.000 | 0.583 | 0.500 | 0.000 | 0.000 | 0.000 | 0.250 | 0.000 | 0.625 | 0.583 | 0.563 | 0.000 | 0.000 | 0.250 | 0.375 | 0.786 | 0.000 | 0.500 | 0.500 | 0.000 | 0.000 | 0.000 | 0.500 | 0.778 |
| Entering Leg | 0 | 7 | 14 | 0 | 0 | 0 | 21 | 4 | 0 | 0 | 0 | 1 | 0 | 5 | 7 | 9 | 0 | 0 | 3 | 3 | 22 | 0 | 6 | 2 | 0 | 0 | 0 | 8 | 56 |
| Exiting Leg | | | | | | | 15 | | | | | | | 28 | | | | | | | 13 | | | | | | | 0 | 56 |
| Total | | | | | | | 36 | | | | | | | 33 | | | | | | | 35 | | | | | | | 8 | 112 |

PDI File #: **175708 A**
Location: **N: Summer Street S: Summer Street**
Location: **E: Drydock Avenue W: Pappas Way**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Pedestrians

| | Summer Street | | | | | | | Drydock Avenue | | | | | | | Summer Street | | | | | | | Pappas Way | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | East | | | | | | | South | | | | | | | West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:00 AM | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 3 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 7 | 0 | 7 | 14 |
| 7:15 AM | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 2 | 5 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 9 | 3 | 12 | 22 |
| 7:30 AM | 0 | 0 | 0 | 0 | 6 | 0 | 6 | 0 | 0 | 0 | 0 | 3 | 2 | 5 | 0 | 0 | 0 | 0 | 1 | 6 | 7 | 0 | 0 | 0 | 0 | 14 | 1 | 15 | 33 |
| 7:45 AM | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 3 | 6 | 9 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 21 | 1 | 22 | 34 |
| Total | 0 | 0 | 0 | 0 | 11 | 1 | 12 | 0 | 0 | 0 | 0 | 11 | 13 | 24 | 0 | 0 | 0 | 0 | 2 | 9 | 11 | 0 | 0 | 0 | 0 | 51 | 5 | 56 | 103 |
| 8:00 AM | 0 | 0 | 0 | 0 | 11 | 2 | 13 | 0 | 0 | 0 | 0 | 2 | 2 | 4 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 29 | 1 | 30 | 49 |
| 8:15 AM | 0 | 0 | 0 | 0 | 8 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 12 | 12 | 0 | 0 | 0 | 0 | 1 | 6 | 7 | 0 | 0 | 0 | 0 | 36 | 2 | 38 | 65 |
| 8:30 AM | 0 | 0 | 0 | 0 | 7 | 1 | 8 | 0 | 0 | 0 | 0 | 0 | 10 | 10 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 0 | 0 | 0 | 0 | 34 | 6 | 40 | 62 |
| 8:45 AM | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 1 | 9 | 10 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 0 | 0 | 0 | 0 | 16 | 3 | 19 | 36 |
| Total | 0 | 0 | 0 | 0 | 28 | 4 | 32 | 0 | 0 | 0 | 0 | 3 | 33 | 36 | 0 | 0 | 0 | 0 | 2 | 15 | 17 | 0 | 0 | 0 | 0 | 115 | 12 | 127 | 212 |
| Grand Total | 0 | 0 | 0 | 0 | 39 | 5 | 44 | 0 | 0 | 0 | 0 | 14 | 46 | 60 | 0 | 0 | 0 | 0 | 4 | 24 | 28 | 0 | 0 | 0 | 0 | 166 | 17 | 183 | 315 |
| Approach % | 0.0 | 0.0 | 0.0 | 0.0 | 88.6 | 11.4 | | 0.0 | 0.0 | 0.0 | 0.0 | 23.3 | 76.7 | | 0.0 | 0.0 | 0.0 | 0.0 | 14.3 | 85.7 | | 0.0 | 0.0 | 0.0 | 0.0 | 90.7 | 9.3 | | |
| Total % | 0.0 | 0.0 | 0.0 | 0.0 | 12.4 | 1.6 | 14.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.4 | 14.6 | 19.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.3 | 7.6 | 8.9 | 0.0 | 0.0 | 0.0 | 0.0 | 52.7 | 5.4 | 58.1 | |
| Exiting Leg Total | | | | | | | 44 | | | | | | | 60 | | | | | | | 28 | | | | | | | 183 | 315 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 8:00 AM | Summer Street | | | | | | | Drydock Avenue | | | | | | | Summer Street | | | | | | | Pappas Way | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | East | | | | | | | South | | | | | | | West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 8:00 AM | 0 | 0 | 0 | 0 | 11 | 2 | 13 | 0 | 0 | 0 | 0 | 2 | 2 | 4 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 29 | 1 | 30 | 49 |
| 8:15 AM | 0 | 0 | 0 | 0 | 8 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 12 | 12 | 0 | 0 | 0 | 0 | 1 | 6 | 7 | 0 | 0 | 0 | 0 | 36 | 2 | 38 | 65 |
| 8:30 AM | 0 | 0 | 0 | 0 | 7 | 1 | 8 | 0 | 0 | 0 | 0 | 0 | 10 | 10 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 0 | 0 | 0 | 0 | 34 | 6 | 40 | 62 |
| 8:45 AM | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 1 | 9 | 10 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 0 | 0 | 0 | 0 | 16 | 3 | 19 | 36 |
| Total Volume | 0 | 0 | 0 | 0 | 28 | 4 | 32 | 0 | 0 | 0 | 0 | 3 | 33 | 36 | 0 | 0 | 0 | 0 | 2 | 15 | 17 | 0 | 0 | 0 | 0 | 115 | 12 | 127 | 212 |
| % Approach Total | 0.0 | 0.0 | 0.0 | 0.0 | 87.5 | 12.5 | | 0.0 | 0.0 | 0.0 | 0.0 | 8.3 | 91.7 | | 0.0 | 0.0 | 0.0 | 0.0 | 11.8 | 88.2 | | 0.0 | 0.0 | 0.0 | 0.0 | 90.6 | 9.4 | | |
| PHF | 0.000 | 0.000 | 0.000 | 0.000 | 0.636 | 0.500 | 0.615 | 0.000 | 0.000 | 0.000 | 0.000 | 0.375 | 0.688 | 0.750 | 0.000 | 0.000 | 0.000 | 0.000 | 0.500 | 0.625 | 0.607 | 0.000 | 0.000 | 0.000 | 0.000 | 0.799 | 0.500 | 0.794 | 0.815 |
| Entering Leg | 0 | 0 | 0 | 0 | 28 | 4 | 32 | 0 | 0 | 0 | 0 | 3 | 33 | 36 | 0 | 0 | 0 | 0 | 2 | 15 | 17 | 0 | 0 | 0 | 0 | 115 | 12 | 127 | 212 |
| Exiting Leg | | | | | | | 32 | | | | | | | 36 | | | | | | | 17 | | | | | | | 127 | 212 |
| Total | | | | | | | 64 | | | | | | | 72 | | | | | | | 34 | | | | | | | 254 | 424 |

PDI File #: **175708 AA**
Location: **N: Summer Street S: Summer Street**
Location: **E: Drydock Avenue W: Pappas Way**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Cars, Heavy Vehicles, and Buses (Combined)

| | Summer Street | | | | | Drydock Avenue | | | | | Summer Street | | | | | Pappas Way | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 68 | 227 | 26 | 0 | 321 | 49 | 15 | 35 | 0 | 99 | 15 | 148 | 0 | 0 | 163 | 3 | 7 | 13 | 0 | 23 | 606 |
| 4:15 PM | 48 | 227 | 22 | 0 | 297 | 46 | 23 | 44 | 0 | 113 | 18 | 144 | 1 | 0 | 163 | 3 | 13 | 15 | 0 | 31 | 604 |
| 4:30 PM | 43 | 205 | 18 | 0 | 266 | 59 | 22 | 54 | 0 | 135 | 27 | 186 | 2 | 0 | 215 | 4 | 9 | 13 | 0 | 26 | 642 |
| 4:45 PM | 46 | 191 | 25 | 1 | 263 | 41 | 18 | 56 | 0 | 115 | 25 | 152 | 1 | 0 | 178 | 6 | 4 | 21 | 0 | 31 | 587 |
| Total | 205 | 850 | 91 | 1 | 1147 | 195 | 78 | 189 | 0 | 462 | 85 | 630 | 4 | 0 | 719 | 16 | 33 | 62 | 0 | 111 | 2439 |
| 5:00 PM | 57 | 192 | 18 | 1 | 268 | 75 | 17 | 61 | 0 | 153 | 27 | 175 | 2 | 0 | 204 | 1 | 7 | 17 | 0 | 25 | 650 |
| 5:15 PM | 50 | 218 | 9 | 1 | 278 | 62 | 25 | 61 | 0 | 148 | 35 | 137 | 3 | 0 | 175 | 6 | 10 | 12 | 0 | 28 | 629 |
| 5:30 PM | 53 | 247 | 18 | 1 | 319 | 48 | 21 | 46 | 0 | 115 | 25 | 152 | 2 | 0 | 179 | 1 | 6 | 19 | 0 | 26 | 639 |
| 5:45 PM | 60 | 248 | 9 | 1 | 318 | 61 | 29 | 49 | 0 | 139 | 35 | 141 | 2 | 0 | 178 | 5 | 10 | 18 | 0 | 33 | 668 |
| Total | 220 | 905 | 54 | 4 | 1183 | 246 | 92 | 217 | 0 | 555 | 122 | 605 | 9 | 0 | 736 | 13 | 33 | 66 | 0 | 112 | 2586 |
| Grand Total | 425 | 1755 | 145 | 5 | 2330 | 441 | 170 | 406 | 0 | 1017 | 207 | 1235 | 13 | 0 | 1455 | 29 | 66 | 128 | 0 | 223 | 5025 |
| Approach % | 18.2 | 75.3 | 6.2 | 0.2 | | 43.4 | 16.7 | 39.9 | 0.0 | | 14.2 | 84.9 | 0.9 | 0.0 | | 13.0 | 29.6 | 57.4 | 0.0 | | |
| Total % | 8.5 | 34.9 | 2.9 | 0.1 | 46.4 | 8.8 | 3.4 | 8.1 | 0.0 | 20.2 | 4.1 | 24.6 | 0.3 | 0.0 | 29.0 | 0.6 | 1.3 | 2.5 | 0.0 | 4.4 | |
| Exiting Leg Total | | | | | 1809 | | | | | 418 | | | | | 2190 | | | | | 608 | 5025 |
| Cars | 401 | 1693 | 126 | 5 | 2225 | 415 | 168 | 400 | 0 | 983 | 202 | 1154 | 13 | 0 | 1369 | 28 | 63 | 118 | 0 | 209 | 4786 |
| % Cars | 94.4 | 96.5 | 86.9 | 100.0 | 95.5 | 94.1 | 98.8 | 98.5 | 0.0 | 96.7 | 97.6 | 93.4 | 100.0 | 0.0 | 94.1 | 96.6 | 95.5 | 92.2 | 0.0 | 93.7 | 95.2 |
| Exiting Leg Total | | | | | 1692 | | | | | 391 | | | | | 2121 | | | | | 582 | 4786 |
| Heavy Vehicles | 18 | 37 | 11 | 0 | 66 | 19 | 2 | 6 | 0 | 27 | 5 | 56 | 0 | 0 | 61 | 1 | 2 | 8 | 0 | 11 | 165 |
| % Heavy Vehicles | 4.2 | 2.1 | 7.6 | 0.0 | 2.8 | 4.3 | 1.2 | 1.5 | 0.0 | 2.7 | 2.4 | 4.5 | 0.0 | 0.0 | 4.2 | 3.4 | 3.0 | 6.3 | 0.0 | 4.9 | 3.3 |
| Exiting Leg Total | | | | | 83 | | | | | 18 | | | | | 44 | | | | | 20 | 165 |
| Buses | 6 | 25 | 8 | 0 | 39 | 7 | 0 | 0 | 0 | 7 | 0 | 25 | 0 | 0 | 25 | 0 | 1 | 2 | 0 | 3 | 74 |
| % Buses | 1.4 | 1.4 | 5.5 | 0.0 | 1.7 | 1.6 | 0.0 | 0.0 | 0.0 | 0.7 | 0.0 | 2.0 | 0.0 | 0.0 | 1.7 | 0.0 | 1.5 | 1.6 | 0.0 | 1.3 | 1.5 |
| Exiting Leg Total | | | | | 34 | | | | | 9 | | | | | 25 | | | | | 6 | 74 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 5:00 PM | Summer Street | | | | | Drydock Avenue | | | | | Summer Street | | | | | Pappas Way | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 5:00 PM | 57 | 192 | 18 | 1 | 268 | 75 | 17 | 61 | 0 | 153 | 27 | 175 | 2 | 0 | 204 | 1 | 7 | 17 | 0 | 25 | 650 |
| 5:15 PM | 50 | 218 | 9 | 1 | 278 | 62 | 25 | 61 | 0 | 148 | 35 | 137 | 3 | 0 | 175 | 6 | 10 | 12 | 0 | 28 | 629 |
| 5:30 PM | 53 | 247 | 18 | 1 | 319 | 48 | 21 | 46 | 0 | 115 | 25 | 152 | 2 | 0 | 179 | 1 | 6 | 19 | 0 | 26 | 639 |
| 5:45 PM | 60 | 248 | 9 | 1 | 318 | 61 | 29 | 49 | 0 | 139 | 35 | 141 | 2 | 0 | 178 | 5 | 10 | 18 | 0 | 33 | 668 |
| Total Volume | 220 | 905 | 54 | 4 | 1183 | 246 | 92 | 217 | 0 | 555 | 122 | 605 | 9 | 0 | 736 | 13 | 33 | 66 | 0 | 112 | 2586 |
| % Approach Total | 18.6 | 76.5 | 4.6 | 0.3 | | 44.3 | 16.6 | 39.1 | 0.0 | | 16.6 | 82.2 | 1.2 | 0.0 | | 11.6 | 29.5 | 58.9 | 0.0 | | |
| PHF | 0.917 | 0.912 | 0.750 | 1.000 | 0.927 | 0.820 | 0.793 | 0.889 | 0.000 | 0.907 | 0.871 | 0.864 | 0.750 | 0.000 | 0.902 | 0.542 | 0.825 | 0.868 | 0.000 | 0.848 | 0.968 |
| Cars | 212 | 879 | 50 | 4 | 1145 | 233 | 91 | 216 | 0 | 540 | 120 | 585 | 9 | 0 | 714 | 12 | 32 | 62 | 0 | 106 | 2505 |
| Cars % | 96.4 | 97.1 | 92.6 | 100.0 | 96.8 | 94.7 | 98.9 | 99.5 | 0.0 | 97.3 | 98.4 | 96.7 | 100.0 | 0.0 | 97.0 | 92.3 | 97.0 | 93.9 | 0.0 | 94.6 | 96.9 |
| Heavy Vehicles | 5 | 14 | 1 | 0 | 20 | 8 | 1 | 1 | 0 | 10 | 2 | 5 | 0 | 0 | 7 | 1 | 1 | 3 | 0 | 5 | 42 |
| Heavy Vehicles % | 2.3 | 1.5 | 1.9 | 0.0 | 1.7 | 3.3 | 1.1 | 0.5 | 0.0 | 1.8 | 1.6 | 0.8 | 0.0 | 0.0 | 1.0 | 7.7 | 3.0 | 4.5 | 0.0 | 4.5 | 1.6 |
| Buses | 3 | 12 | 3 | 0 | 18 | 5 | 0 | 0 | 0 | 5 | 0 | 15 | 0 | 0 | 15 | 0 | 0 | 1 | 0 | 1 | 39 |
| Buses % | 1.4 | 1.3 | 5.6 | 0.0 | 1.5 | 2.0 | 0.0 | 0.0 | 0.0 | 0.9 | 0.0 | 2.5 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 1.5 | 0.0 | 0.9 | 1.5 |
| Cars Enter Leg | 212 | 879 | 50 | 4 | 1145 | 233 | 91 | 216 | 0 | 540 | 120 | 585 | 9 | 0 | 714 | 12 | 32 | 62 | 0 | 106 | 2505 |
| Heavy Enter Leg | 5 | 14 | 1 | 0 | 20 | 8 | 1 | 1 | 0 | 10 | 2 | 5 | 0 | 0 | 7 | 1 | 1 | 3 | 0 | 5 | 42 |
| Bus Enter Leg | 3 | 12 | 3 | 0 | 18 | 5 | 0 | 0 | 0 | 5 | 0 | 15 | 0 | 0 | 15 | 0 | 0 | 1 | 0 | 1 | 39 |
| Total Entering Leg | 220 | 905 | 54 | 4 | 1183 | 246 | 92 | 217 | 0 | 555 | 122 | 605 | 9 | 0 | 736 | 13 | 33 | 66 | 0 | 112 | 2586 |
| Cars Exiting Leg | | | | | 884 | | | | | 202 | | | | | 1107 | | | | | 312 | 2505 |
| Heavy Exiting Leg | | | | | 16 | | | | | 4 | | | | | 16 | | | | | 6 | 42 |
| Buses Exiting Leg | | | | | 21 | | | | | 3 | | | | | 12 | | | | | 3 | 39 |
| Total Exiting Leg | | | | | 921 | | | | | 209 | | | | | 1135 | | | | | 321 | 2586 |

PDI File #: **175708 AA**
Location: **N: Summer Street S: Summer Street**
Location: **E: Drydock Avenue W: Pappas Way**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Cars

| | Summer Street | | | | | Drydock Avenue | | | | | Summer Street | | | | | Pappas Way | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 61 | 212 | 23 | 0 | 296 | 47 | 15 | 32 | 0 | 94 | 15 | 132 | 0 | 0 | 147 | 3 | 7 | 13 | 0 | 23 | 560 |
| 4:15 PM | 42 | 218 | 20 | 0 | 280 | 43 | 22 | 43 | 0 | 108 | 18 | 123 | 1 | 0 | 142 | 3 | 13 | 14 | 0 | 30 | 560 |
| 4:30 PM | 41 | 199 | 12 | 0 | 252 | 54 | 22 | 53 | 0 | 129 | 26 | 172 | 2 | 0 | 200 | 4 | 7 | 12 | 0 | 23 | 604 |
| 4:45 PM | 45 | 185 | 21 | 1 | 252 | 38 | 18 | 56 | 0 | 112 | 23 | 142 | 1 | 0 | 166 | 6 | 4 | 17 | 0 | 27 | 557 |
| Total | 189 | 814 | 76 | 1 | 1080 | 182 | 77 | 184 | 0 | 443 | 82 | 569 | 4 | 0 | 655 | 16 | 31 | 56 | 0 | 103 | 2281 |
| 5:00 PM | 56 | 188 | 16 | 1 | 261 | 71 | 16 | 60 | 0 | 147 | 27 | 170 | 2 | 0 | 199 | 1 | 7 | 16 | 0 | 24 | 631 |
| 5:15 PM | 49 | 212 | 9 | 1 | 271 | 58 | 25 | 61 | 0 | 144 | 35 | 132 | 3 | 0 | 170 | 6 | 10 | 12 | 0 | 28 | 613 |
| 5:30 PM | 50 | 238 | 17 | 1 | 306 | 45 | 21 | 46 | 0 | 112 | 25 | 147 | 2 | 0 | 174 | 1 | 5 | 18 | 0 | 24 | 616 |
| 5:45 PM | 57 | 241 | 8 | 1 | 307 | 59 | 29 | 49 | 0 | 137 | 33 | 136 | 2 | 0 | 171 | 4 | 10 | 16 | 0 | 30 | 645 |
| Total | 212 | 879 | 50 | 4 | 1145 | 233 | 91 | 216 | 0 | 540 | 120 | 585 | 9 | 0 | 714 | 12 | 32 | 62 | 0 | 106 | 2505 |
| Grand Total | 401 | 1693 | 126 | 5 | 2225 | 415 | 168 | 400 | 0 | 983 | 202 | 1154 | 13 | 0 | 1369 | 28 | 63 | 118 | 0 | 209 | 4786 |
| Approach % | 18.0 | 76.1 | 5.7 | 0.2 | | 42.2 | 17.1 | 40.7 | 0.0 | | 14.8 | 84.3 | 0.9 | 0.0 | | 13.4 | 30.1 | 56.5 | 0.0 | | |
| Total % | 8.4 | 35.4 | 2.6 | 0.1 | 46.5 | 8.7 | 3.5 | 8.4 | 0.0 | 20.5 | 4.2 | 24.1 | 0.3 | 0.0 | 28.6 | 0.6 | 1.3 | 2.5 | 0.0 | 4.4 | |
| Exiting Leg Total | | | | | 1692 | | | | | 391 | | | | | 2121 | | | | | 582 | 4786 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 5:00 PM | Summer Street | | | | | Drydock Avenue | | | | | Summer Street | | | | | Pappas Way | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 5:00 PM | 56 | 188 | 16 | 1 | 261 | 71 | 16 | 60 | 0 | 147 | 27 | 170 | 2 | 0 | 199 | 1 | 7 | 16 | 0 | 24 | 631 |
| 5:15 PM | 49 | 212 | 9 | 1 | 271 | 58 | 25 | 61 | 0 | 144 | 35 | 132 | 3 | 0 | 170 | 6 | 10 | 12 | 0 | 28 | 613 |
| 5:30 PM | 50 | 238 | 17 | 1 | 306 | 45 | 21 | 46 | 0 | 112 | 25 | 147 | 2 | 0 | 174 | 1 | 5 | 18 | 0 | 24 | 616 |
| 5:45 PM | 57 | 241 | 8 | 1 | 307 | 59 | 29 | 49 | 0 | 137 | 33 | 136 | 2 | 0 | 171 | 4 | 10 | 16 | 0 | 30 | 645 |
| Total Volume | 212 | 879 | 50 | 4 | 1145 | 233 | 91 | 216 | 0 | 540 | 120 | 585 | 9 | 0 | 714 | 12 | 32 | 62 | 0 | 106 | 2505 |
| % Approach Total | 18.5 | 76.8 | 4.4 | 0.3 | | 43.1 | 16.9 | 40.0 | 0.0 | | 16.8 | 81.9 | 1.3 | 0.0 | | 11.3 | 30.2 | 58.5 | 0.0 | | |
| PHF | 0.930 | 0.912 | 0.735 | 1.000 | 0.932 | 0.820 | 0.784 | 0.885 | 0.000 | 0.918 | 0.857 | 0.860 | 0.750 | 0.000 | 0.897 | 0.500 | 0.800 | 0.861 | 0.000 | 0.883 | 0.971 |
| Entering Leg | 212 | 879 | 50 | 4 | 1145 | 233 | 91 | 216 | 0 | 540 | 120 | 585 | 9 | 0 | 714 | 12 | 32 | 62 | 0 | 106 | 2505 |
| Exiting Leg | | | | | 884 | | | | | 202 | | | | | 1107 | | | | | 312 | 2505 |
| Total | | | | | 2029 | | | | | 742 | | | | | 1821 | | | | | 418 | 5010 |

PDI File #: **175708 AA**
Location: **N: Summer Street S: Summer Street**
Location: **E: Drydock Avenue W: Pappas Way**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Heavy Vehicles

| | Summer Street (North) | | | | | Drydock Avenue (East) | | | | | Summer Street (South) | | | | | Pappas Way (West) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 5 | 11 | 3 | 0 | 19 | 2 | 0 | 3 | 0 | 5 | 0 | 14 | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 38 |
| 4:15 PM | 5 | 6 | 1 | 0 | 12 | 2 | 1 | 1 | 0 | 4 | 0 | 20 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 36 |
| 4:30 PM | 2 | 3 | 4 | 0 | 9 | 5 | 0 | 1 | 0 | 6 | 1 | 13 | 0 | 0 | 14 | 0 | 1 | 1 | 0 | 2 | 31 |
| 4:45 PM | 1 | 3 | 2 | 0 | 6 | 2 | 0 | 0 | 0 | 2 | 2 | 4 | 0 | 0 | 6 | 0 | 0 | 4 | 0 | 4 | 18 |
| Total | 13 | 23 | 10 | 0 | 46 | 11 | 1 | 5 | 0 | 17 | 3 | 51 | 0 | 0 | 54 | 0 | 1 | 5 | 0 | 6 | 123 |
| 5:00 PM | 1 | 2 | 1 | 0 | 4 | 4 | 1 | 1 | 0 | 6 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 11 |
| 5:15 PM | 1 | 3 | 0 | 0 | 4 | 2 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 7 |
| 5:30 PM | 2 | 4 | 0 | 0 | 6 | 1 | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 3 | 0 | 1 | 1 | 0 | 2 | 12 |
| 5:45 PM | 1 | 5 | 0 | 0 | 6 | 1 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 2 | 1 | 0 | 2 | 0 | 3 | 12 |
| Total | 5 | 14 | 1 | 0 | 20 | 8 | 1 | 1 | 0 | 10 | 2 | 5 | 0 | 0 | 7 | 1 | 1 | 3 | 0 | 5 | 42 |
| Grand Total | 18 | 37 | 11 | 0 | 66 | 19 | 2 | 6 | 0 | 27 | 5 | 56 | 0 | 0 | 61 | 1 | 2 | 8 | 0 | 11 | 165 |
| Approach % | 27.3 | 56.1 | 16.7 | 0.0 | | 70.4 | 7.4 | 22.2 | 0.0 | | 8.2 | 91.8 | 0.0 | 0.0 | | 9.1 | 18.2 | 72.7 | 0.0 | | |
| Total % | 10.9 | 22.4 | 6.7 | 0.0 | 40.0 | 11.5 | 1.2 | 3.6 | 0.0 | 16.4 | 3.0 | 33.9 | 0.0 | 0.0 | 37.0 | 0.6 | 1.2 | 4.8 | 0.0 | 6.7 | |
| Exiting Leg Total | | | | | 83 | | | | | 18 | | | | | 44 | | | | | 20 | 165 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:00 PM | Summer Street (North) | | | | | Drydock Avenue (East) | | | | | Summer Street (South) | | | | | Pappas Way (West) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 5 | 11 | 3 | 0 | 19 | 2 | 0 | 3 | 0 | 5 | 0 | 14 | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 38 |
| 4:15 PM | 5 | 6 | 1 | 0 | 12 | 2 | 1 | 1 | 0 | 4 | 0 | 20 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 36 |
| 4:30 PM | 2 | 3 | 4 | 0 | 9 | 5 | 0 | 1 | 0 | 6 | 1 | 13 | 0 | 0 | 14 | 0 | 1 | 1 | 0 | 2 | 31 |
| 4:45 PM | 1 | 3 | 2 | 0 | 6 | 2 | 0 | 0 | 0 | 2 | 2 | 4 | 0 | 0 | 6 | 0 | 0 | 4 | 0 | 4 | 18 |
| Total Volume | 13 | 23 | 10 | 0 | 46 | 11 | 1 | 5 | 0 | 17 | 3 | 51 | 0 | 0 | 54 | 0 | 1 | 5 | 0 | 6 | 123 |
| % Approach Total | 28.3 | 50.0 | 21.7 | 0.0 | | 64.7 | 5.9 | 29.4 | 0.0 | | 5.6 | 94.4 | 0.0 | 0.0 | | 0.0 | 16.7 | 83.3 | 0.0 | | |
| PHF | 0.650 | 0.523 | 0.625 | 0.000 | 0.605 | 0.550 | 0.250 | 0.417 | 0.000 | 0.708 | 0.375 | 0.638 | 0.000 | 0.000 | 0.675 | 0.000 | 0.250 | 0.313 | 0.000 | 0.375 | 0.809 |
| Entering Leg | 13 | 23 | 10 | 0 | 46 | 11 | 1 | 5 | 0 | 17 | 3 | 51 | 0 | 0 | 54 | 0 | 1 | 5 | 0 | 6 | 123 |
| Exiting Leg | | | | | 67 | | | | | 14 | | | | | 28 | | | | | 14 | 123 |
| Total | | | | | 113 | | | | | 31 | | | | | 82 | | | | | 20 | 246 |

PDI File #: **175708 AA**
Location: **N: Summer Street S: Summer Street**
Location: **E: Drydock Avenue W: Pappas Way**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Buses

| | Summer Street (North) | | | | | Drydock Avenue (East) | | | | | Summer Street (South) | | | | | Pappas Way (West) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 2 | 4 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 8 |
| 4:15 PM | 1 | 3 | 1 | 0 | 5 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 8 |
| 4:30 PM | 0 | 3 | 2 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 7 |
| 4:45 PM | 0 | 3 | 2 | 0 | 5 | 1 | 0 | 0 | 0 | 1 | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 12 |
| Total | 3 | 13 | 5 | 0 | 21 | 2 | 0 | 0 | 0 | 2 | 0 | 10 | 0 | 0 | 10 | 0 | 1 | 1 | 0 | 2 | 35 |
| 5:00 PM | 0 | 2 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 1 | 0 | 1 | 8 |
| 5:15 PM | 0 | 3 | 0 | 0 | 3 | 2 | 0 | 0 | 0 | 2 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 9 |
| 5:30 PM | 1 | 5 | 1 | 0 | 7 | 2 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 11 |
| 5:45 PM | 2 | 2 | 1 | 0 | 5 | 1 | 0 | 0 | 0 | 1 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 11 |
| Total | 3 | 12 | 3 | 0 | 18 | 5 | 0 | 0 | 0 | 5 | 0 | 15 | 0 | 0 | 15 | 0 | 0 | 1 | 0 | 1 | 39 |
| Grand Total | 6 | 25 | 8 | 0 | 39 | 7 | 0 | 0 | 0 | 7 | 0 | 25 | 0 | 0 | 25 | 0 | 1 | 2 | 0 | 3 | 74 |
| Approach % | 15.4 | 64.1 | 20.5 | 0.0 | | 100.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 33.3 | 66.7 | 0.0 | | |
| Total % | 8.1 | 33.8 | 10.8 | 0.0 | 52.7 | 9.5 | 0.0 | 0.0 | 0.0 | 9.5 | 0.0 | 33.8 | 0.0 | 0.0 | 33.8 | 0.0 | 1.4 | 2.7 | 0.0 | 4.1 | |
| Exiting Leg Total | | | | | 34 | | | | | 9 | | | | | 25 | | | | | 6 | 74 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:45 PM | Summer Street (North) | | | | | Drydock Avenue (East) | | | | | Summer Street (South) | | | | | Pappas Way (West) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:45 PM | 0 | 3 | 2 | 0 | 5 | 1 | 0 | 0 | 0 | 1 | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 12 |
| 5:00 PM | 0 | 2 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 1 | 0 | 1 | 8 |
| 5:15 PM | 0 | 3 | 0 | 0 | 3 | 2 | 0 | 0 | 0 | 2 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 9 |
| 5:30 PM | 1 | 5 | 1 | 0 | 7 | 2 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 11 |
| Total Volume | 1 | 13 | 4 | 0 | 18 | 5 | 0 | 0 | 0 | 5 | 0 | 16 | 0 | 0 | 16 | 0 | 0 | 1 | 0 | 1 | 40 |
| % Approach Total | 5.6 | 72.2 | 22.2 | 0.0 | | 100.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 100.0 | 0.0 | | |
| PHF | 0.250 | 0.650 | 0.500 | 0.000 | 0.643 | 0.625 | 0.000 | 0.000 | 0.000 | 0.625 | 0.000 | 0.667 | 0.000 | 0.000 | 0.667 | 0.000 | 0.000 | 0.250 | 0.000 | 0.250 | 0.833 |
| Entering Leg | 1 | 13 | 4 | 0 | 18 | 5 | 0 | 0 | 0 | 5 | 0 | 16 | 0 | 0 | 16 | 0 | 0 | 1 | 0 | 1 | 40 |
| Exiting Leg | | | | | 22 | | | | | 4 | | | | | 13 | | | | | 1 | 40 |
| Total | | | | | 40 | | | | | 9 | | | | | 29 | | | | | 2 | 80 |

PDI File #: **175708 AA**
Location: **N: Summer Street S: Summer Street**
Location: **E: Drydock Avenue W: Pappas Way**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Bicycles (on Roadway and Crosswalks)

| | Summer Street | | | | | | | Drydock Avenue | | | | | | | Summer Street | | | | | | | Pappas Way | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | East | | | | | | | South | | | | | | | West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 4:00 PM | 0 | 1 | 1 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 2 | 6 |
| 4:15 PM | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 6 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 5 |
| 4:45 PM | 1 | 5 | 1 | 0 | 0 | 0 | 7 | 3 | 0 | 1 | 0 | 0 | 0 | 4 | 0 | 3 | 0 | 0 | 2 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| Total | 1 | 9 | 2 | 0 | 0 | 0 | 12 | 5 | 0 | 2 | 0 | 0 | 0 | 7 | 0 | 8 | 0 | 0 | 2 | 0 | 10 | 1 | 0 | 0 | 0 | 0 | 3 | 4 | 33 |
| 5:00 PM | 2 | 5 | 0 | 0 | 0 | 0 | 7 | 2 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 11 |
| 5:15 PM | 2 | 5 | 0 | 0 | 0 | 1 | 8 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 5:30 PM | 0 | 9 | 0 | 0 | 0 | 0 | 9 | 4 | 0 | 6 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| 5:45 PM | 2 | 6 | 0 | 0 | 0 | 0 | 8 | 3 | 0 | 2 | 0 | 0 | 0 | 5 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| Total | 6 | 25 | 0 | 0 | 0 | 1 | 32 | 9 | 0 | 13 | 0 | 0 | 0 | 22 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 57 |
| Grand Total | 7 | 34 | 2 | 0 | 0 | 1 | 44 | 14 | 0 | 15 | 0 | 0 | 0 | 29 | 0 | 10 | 0 | 0 | 2 | 0 | 12 | 1 | 1 | 0 | 0 | 0 | 3 | 5 | 90 |
| Approach % | 15.9 | 77.3 | 4.5 | 0.0 | 0.0 | 2.3 | | 48.3 | 0.0 | 51.7 | 0.0 | 0.0 | 0.0 | | 0.0 | 83.3 | 0.0 | 0.0 | 16.7 | 0.0 | | 20.0 | 20.0 | 0.0 | 0.0 | 0.0 | 60.0 | | |
| Total % | 7.8 | 37.8 | 2.2 | 0.0 | 0.0 | 1.1 | 48.9 | 15.6 | 0.0 | 16.7 | 0.0 | 0.0 | 0.0 | 32.2 | 0.0 | 11.1 | 0.0 | 0.0 | 2.2 | 0.0 | 13.3 | 1.1 | 1.1 | 0.0 | 0.0 | 0.0 | 3.3 | 5.6 | |
| Exiting Leg Total | | | | | | | 25 | | | | | | | 3 | | | | | | | 52 | | | | | | | 10 | 90 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:45 PM | Summer Street | | | | | | | Drydock Avenue | | | | | | | Summer Street | | | | | | | Pappas Way | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | East | | | | | | | South | | | | | | | West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 4:45 PM | 1 | 5 | 1 | 0 | 0 | 0 | 7 | 3 | 0 | 1 | 0 | 0 | 0 | 4 | 0 | 3 | 0 | 0 | 2 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| 5:00 PM | 2 | 5 | 0 | 0 | 0 | 0 | 7 | 2 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 11 |
| 5:15 PM | 2 | 5 | 0 | 0 | 0 | 1 | 8 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 5:30 PM | 0 | 9 | 0 | 0 | 0 | 0 | 9 | 4 | 0 | 6 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| Total Volume | 5 | 24 | 1 | 0 | 0 | 1 | 31 | 9 | 0 | 12 | 0 | 0 | 0 | 21 | 0 | 3 | 0 | 0 | 2 | 0 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 58 |
| % Approach Total | 16.1 | 77.4 | 3.2 | 0.0 | 0.0 | 3.2 | | 42.9 | 0.0 | 57.1 | 0.0 | 0.0 | 0.0 | | 0.0 | 60.0 | 0.0 | 0.0 | 40.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| PHF | 0.625 | 0.667 | 0.250 | 0.000 | 0.000 | 0.250 | 0.861 | 0.563 | 0.000 | 0.500 | 0.000 | 0.000 | 0.000 | 0.525 | 0.000 | 0.250 | 0.000 | 0.000 | 0.250 | 0.000 | 0.250 | 0.000 | 0.250 | 0.000 | 0.000 | 0.000 | 0.000 | 0.250 | 0.763 |
| Entering Leg | 5 | 24 | 1 | 0 | 0 | 1 | 31 | 9 | 0 | 12 | 0 | 0 | 0 | 21 | 0 | 3 | 0 | 0 | 2 | 0 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 58 |
| Exiting Leg | | | | | | | 13 | | | | | | | 2 | | | | | | | 38 | | | | | | | 5 | 58 |
| Total | | | | | | | 44 | | | | | | | 23 | | | | | | | 43 | | | | | | | 6 | 116 |

PDI File #: **175708 AA**
Location: **N: Summer Street S: Summer Street**
Location: **E: Drydock Avenue W: Pappas Way**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Pedestrians

| | Summer Street | | | | | | | Drydock Avenue | | | | | | | Summer Street | | | | | | | Pappas Way | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | East | | | | | | | South | | | | | | | West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 3 | 10 | 15 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 5 | 10 |
| 4:30 PM | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 3 | 2 | 5 | 0 | 0 | 0 | 0 | 4 | 5 | 9 | 0 | 0 | 0 | 0 | 5 | 6 | 11 | 28 |
| 4:45 PM | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 7 | 2 | 9 | 0 | 0 | 0 | 0 | 1 | 16 | 17 | 30 |
| Total | 0 | 0 | 0 | 0 | 5 | 6 | 11 | 0 | 0 | 0 | 0 | 6 | 5 | 11 | 0 | 0 | 0 | 0 | 11 | 7 | 18 | 0 | 0 | 0 | 0 | 13 | 30 | 43 | 83 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 5 | 2 | 7 | 0 | 0 | 0 | 0 | 4 | 1 | 5 | 0 | 0 | 0 | 0 | 8 | 17 | 25 | 39 |
| 5:15 PM | 0 | 0 | 0 | 0 | 6 | 5 | 11 | 0 | 0 | 0 | 0 | 8 | 3 | 11 | 0 | 0 | 0 | 0 | 5 | 3 | 8 | 0 | 0 | 0 | 0 | 6 | 30 | 36 | 66 |
| 5:30 PM | 0 | 0 | 0 | 0 | 2 | 4 | 6 | 0 | 0 | 0 | 0 | 8 | 4 | 12 | 0 | 0 | 0 | 0 | 6 | 5 | 11 | 0 | 0 | 0 | 0 | 10 | 35 | 45 | 74 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 2 | 2 | 4 | 0 | 0 | 0 | 0 | 8 | 1 | 9 | 0 | 0 | 0 | 0 | 3 | 29 | 32 | 47 |
| Total | 0 | 0 | 0 | 0 | 8 | 13 | 21 | 0 | 0 | 0 | 0 | 23 | 11 | 34 | 0 | 0 | 0 | 0 | 23 | 10 | 33 | 0 | 0 | 0 | 0 | 27 | 111 | 138 | 226 |
| Grand Total | 0 | 0 | 0 | 0 | 13 | 19 | 32 | 0 | 0 | 0 | 0 | 29 | 16 | 45 | 0 | 0 | 0 | 0 | 34 | 17 | 51 | 0 | 0 | 0 | 0 | 40 | 141 | 181 | 309 |
| Approach % | 0.0 | 0.0 | 0.0 | 0.0 | 40.6 | 59.4 | | 0.0 | 0.0 | 0.0 | 0.0 | 64.4 | 35.6 | | 0.0 | 0.0 | 0.0 | 0.0 | 66.7 | 33.3 | | 0.0 | 0.0 | 0.0 | 0.0 | 22.1 | 77.9 | | |
| Total % | 0.0 | 0.0 | 0.0 | 0.0 | 4.2 | 6.1 | 10.4 | 0.0 | 0.0 | 0.0 | 0.0 | 9.4 | 5.2 | 14.6 | 0.0 | 0.0 | 0.0 | 0.0 | 11.0 | 5.5 | 16.5 | 0.0 | 0.0 | 0.0 | 0.0 | 12.9 | 45.6 | 58.6 | |
| Exiting Leg Total | | | | | | | 32 | | | | | | | 45 | | | | | | | 51 | | | | | | | 181 | 309 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 5:00 PM | Summer Street | | | | | | | Drydock Avenue | | | | | | | Summer Street | | | | | | | Pappas Way | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | East | | | | | | | South | | | | | | | West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 5 | 2 | 7 | 0 | 0 | 0 | 0 | 4 | 1 | 5 | 0 | 0 | 0 | 0 | 8 | 17 | 25 | 39 |
| 5:15 PM | 0 | 0 | 0 | 0 | 6 | 5 | 11 | 0 | 0 | 0 | 0 | 8 | 3 | 11 | 0 | 0 | 0 | 0 | 5 | 3 | 8 | 0 | 0 | 0 | 0 | 6 | 30 | 36 | 66 |
| 5:30 PM | 0 | 0 | 0 | 0 | 2 | 4 | 6 | 0 | 0 | 0 | 0 | 8 | 4 | 12 | 0 | 0 | 0 | 0 | 6 | 5 | 11 | 0 | 0 | 0 | 0 | 10 | 35 | 45 | 74 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 2 | 2 | 4 | 0 | 0 | 0 | 0 | 8 | 1 | 9 | 0 | 0 | 0 | 0 | 3 | 29 | 32 | 47 |
| Total Volume | 0 | 0 | 0 | 0 | 8 | 13 | 21 | 0 | 0 | 0 | 0 | 23 | 11 | 34 | 0 | 0 | 0 | 0 | 23 | 10 | 33 | 0 | 0 | 0 | 0 | 27 | 111 | 138 | 226 |
| % Approach Total | 0.0 | 0.0 | 0.0 | 0.0 | 38.1 | 61.9 | | 0.0 | 0.0 | 0.0 | 0.0 | 67.6 | 32.4 | | 0.0 | 0.0 | 0.0 | 0.0 | 69.7 | 30.3 | | 0.0 | 0.0 | 0.0 | 0.0 | 19.6 | 80.4 | | |
| PHF | 0.000 | 0.000 | 0.000 | 0.000 | 0.333 | 0.650 | 0.477 | 0.000 | 0.000 | 0.000 | 0.000 | 0.719 | 0.688 | 0.708 | 0.000 | 0.000 | 0.000 | 0.000 | 0.719 | 0.500 | 0.750 | 0.000 | 0.000 | 0.000 | 0.000 | 0.675 | 0.793 | 0.767 | 0.764 |
| Entering Leg | 0 | 0 | 0 | 0 | 8 | 13 | 21 | 0 | 0 | 0 | 0 | 23 | 11 | 34 | 0 | 0 | 0 | 0 | 23 | 10 | 33 | 0 | 0 | 0 | 0 | 27 | 111 | 138 | 226 |
| Exiting Leg | | | | | | | 21 | | | | | | | 34 | | | | | | | 33 | | | | | | | 138 | 226 |
| Total | | | | | | | 42 | | | | | | | 68 | | | | | | | 66 | | | | | | | 276 | 452 |

PDI File #: **175708 B**
Location: **N: Summer Street S: Summer Street**
Location: **W: Elkins Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Cars, Heavy Vehicles, and Buses (Combined)

| | Summer Street | | | | Summer Street | | | | Elkins Street | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | South | | | | West | | | | |
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Total |
| 7:00 AM | 10 | 124 | 0 | 134 | 305 | 2 | 0 | 307 | 3 | 1 | 0 | 4 | 445 |
| 7:15 AM | 10 | 96 | 0 | 106 | 309 | 6 | 0 | 315 | 8 | 3 | 1 | 12 | 433 |
| 7:30 AM | 6 | 119 | 0 | 125 | 285 | 8 | 1 | 294 | 5 | 1 | 0 | 6 | 425 |
| 7:45 AM | 6 | 106 | 0 | 112 | 263 | 9 | 0 | 272 | 5 | 0 | 0 | 5 | 389 |
| Total | 32 | 445 | 0 | 477 | 1162 | 25 | 1 | 1188 | 21 | 5 | 1 | 27 | 1692 |
| 8:00 AM | 3 | 165 | 0 | 168 | 256 | 15 | 0 | 271 | 3 | 2 | 0 | 5 | 444 |
| 8:15 AM | 7 | 140 | 0 | 147 | 274 | 5 | 0 | 279 | 1 | 2 | 0 | 3 | 429 |
| 8:30 AM | 9 | 133 | 0 | 142 | 274 | 4 | 0 | 278 | 4 | 5 | 0 | 9 | 429 |
| 8:45 AM | 4 | 136 | 0 | 140 | 254 | 5 | 0 | 259 | 2 | 4 | 0 | 6 | 405 |
| Total | 23 | 574 | 0 | 597 | 1058 | 29 | 0 | 1087 | 10 | 13 | 0 | 23 | 1707 |
| Grand Total | 55 | 1019 | 0 | 1074 | 2220 | 54 | 1 | 2275 | 31 | 18 | 1 | 50 | 3399 |
| Approach % | 5.1 | 94.9 | 0.0 | | 97.6 | 2.4 | 0.0 | | 62.0 | 36.0 | 2.0 | | |
| Total % | 1.6 | 30.0 | 0.0 | 31.6 | 65.3 | 1.6 | 0.0 | 66.9 | 0.9 | 0.5 | 0.0 | 1.5 | |
| Exiting Leg Total | | | | 2238 | | | | 1051 | | | | 110 | 3399 |
| Cars | 54 | 902 | 0 | 956 | 2117 | 53 | 1 | 2171 | 27 | 16 | 1 | 44 | 3171 |
| % Cars | 98.2 | 88.5 | 0.0 | 89.0 | 95.4 | 98.1 | 100.0 | 95.4 | 87.1 | 88.9 | 100.0 | 88.0 | 93.3 |
| Exiting Leg Total | | | | 2133 | | | | 930 | | | | 108 | 3171 |
| Heavy Vehicles | 0 | 85 | 0 | 85 | 67 | 1 | 0 | 68 | 4 | 2 | 0 | 6 | 159 |
| % Heavy Vehicles | 0.0 | 8.3 | 0.0 | 7.9 | 3.0 | 1.9 | 0.0 | 3.0 | 12.9 | 11.1 | 0.0 | 12.0 | 4.7 |
| Exiting Leg Total | | | | 69 | | | | 89 | | | | 1 | 159 |
| Buses | 1 | 32 | 0 | 33 | 36 | 0 | 0 | 36 | 0 | 0 | 0 | 0 | 69 |
| % Buses | 1.8 | 3.1 | 0.0 | 3.1 | 1.6 | 0.0 | 0.0 | 1.6 | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 |
| Exiting Leg Total | | | | 36 | | | | 32 | | | | 1 | 69 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 8:00 AM | Summer Street | | | | Summer Street | | | | Elkins Street | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | South | | | | West | | | | |
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Total |
| 8:00 AM | 3 | 165 | 0 | 168 | 256 | 15 | 0 | 271 | 3 | 2 | 0 | 5 | 444 |
| 8:15 AM | 7 | 140 | 0 | 147 | 274 | 5 | 0 | 279 | 1 | 2 | 0 | 3 | 429 |
| 8:30 AM | 9 | 133 | 0 | 142 | 274 | 4 | 0 | 278 | 4 | 5 | 0 | 9 | 429 |
| 8:45 AM | 4 | 136 | 0 | 140 | 254 | 5 | 0 | 259 | 2 | 4 | 0 | 6 | 405 |
| Total Volume | 23 | 574 | 0 | 597 | 1058 | 29 | 0 | 1087 | 10 | 13 | 0 | 23 | 1707 |
| % Approach Total | 3.9 | 96.1 | 0.0 | | 97.3 | 2.7 | 0.0 | | 43.5 | 56.5 | 0.0 | | |
| PHF | 0.639 | 0.870 | 0.000 | 0.888 | 0.965 | 0.483 | 0.000 | 0.974 | 0.625 | 0.650 | 0.000 | 0.639 | 0.961 |
| Cars | 23 | 509 | 0 | 532 | 999 | 28 | 0 | 1027 | 7 | 12 | 0 | 19 | 1578 |
| Cars % | 100.0 | 88.7 | 0.0 | 89.1 | 94.4 | 96.6 | 0.0 | 94.5 | 70.0 | 92.3 | 0.0 | 82.6 | 92.4 |
| Heavy Vehicles | 0 | 41 | 0 | 41 | 44 | 1 | 0 | 45 | 3 | 1 | 0 | 4 | 90 |
| Heavy Vehicles % | 0.0 | 7.1 | 0.0 | 6.9 | 4.2 | 3.4 | 0.0 | 4.1 | 30.0 | 7.7 | 0.0 | 17.4 | 5.3 |
| Buses | 0 | 24 | 0 | 24 | 15 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 39 |
| Buses % | 0.0 | 4.2 | 0.0 | 4.0 | 1.4 | 0.0 | 0.0 | 1.4 | 0.0 | 0.0 | 0.0 | 0.0 | 2.3 |
| Cars Enter Leg | 23 | 509 | 0 | 532 | 999 | 28 | 0 | 1027 | 7 | 12 | 0 | 19 | 1578 |
| Heavy Enter Leg | 0 | 41 | 0 | 41 | 44 | 1 | 0 | 45 | 3 | 1 | 0 | 4 | 90 |
| Bus Enter Leg | 0 | 24 | 0 | 24 | 15 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 39 |
| Total Entering Leg | 23 | 574 | 0 | 597 | 1058 | 29 | 0 | 1087 | 10 | 13 | 0 | 23 | 1707 |
| Cars Exiting Leg | | | | 1011 | | | | 516 | | | | 51 | 1578 |
| Heavy Exiting Leg | | | | 45 | | | | 44 | | | | 1 | 90 |
| Buses Exiting Leg | | | | 15 | | | | 24 | | | | 0 | 39 |
| Total Exiting Leg | | | | 1071 | | | | 584 | | | | 52 | 1707 |

PDI File #: **175708 B**
Location: **N: Summer Street S: Summer Street**
Location: **W: Elkins Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Class: **Cars**

| | Summer Street | | | | Summer Street | | | | Elkins Street | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | South | | | | West | | | | |
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Total |
| 7:00 AM | 10 | 113 | 0 | 123 | 291 | 2 | 0 | 293 | 3 | 1 | 0 | 4 | 420 |
| 7:15 AM | 9 | 85 | 0 | 94 | 299 | 6 | 0 | 305 | 8 | 2 | 1 | 11 | 410 |
| 7:30 AM | 6 | 104 | 0 | 110 | 274 | 8 | 1 | 283 | 4 | 1 | 0 | 5 | 398 |
| 7:45 AM | 6 | 91 | 0 | 97 | 254 | 9 | 0 | 263 | 5 | 0 | 0 | 5 | 365 |
| Total | 31 | 393 | 0 | 424 | 1118 | 25 | 1 | 1144 | 20 | 4 | 1 | 25 | 1593 |
| 8:00 AM | 3 | 150 | 0 | 153 | 251 | 15 | 0 | 266 | 3 | 2 | 0 | 5 | 424 |
| 8:15 AM | 7 | 125 | 0 | 132 | 261 | 4 | 0 | 265 | 0 | 2 | 0 | 2 | 399 |
| 8:30 AM | 9 | 118 | 0 | 127 | 252 | 4 | 0 | 256 | 3 | 4 | 0 | 7 | 390 |
| 8:45 AM | 4 | 116 | 0 | 120 | 235 | 5 | 0 | 240 | 1 | 4 | 0 | 5 | 365 |
| Total | 23 | 509 | 0 | 532 | 999 | 28 | 0 | 1027 | 7 | 12 | 0 | 19 | 1578 |
| Grand Total | 54 | 902 | 0 | 956 | 2117 | 53 | 1 | 2171 | 27 | 16 | 1 | 44 | 3171 |
| Approach % | 5.6 | 94.4 | 0.0 | | 97.5 | 2.4 | 0.0 | | 61.4 | 36.4 | 2.3 | | |
| Total % | 1.7 | 28.4 | 0.0 | 30.1 | 66.8 | 1.7 | 0.0 | 68.5 | 0.9 | 0.5 | 0.0 | 1.4 | |
| Exiting Leg Total | | | | 2133 | | | | 930 | | | | 108 | 3171 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:15 AM | Summer Street | | | | Summer Street | | | | Elkins Street | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | South | | | | West | | | | |
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Total |
| 7:15 AM | 9 | 85 | 0 | 94 | 299 | 6 | 0 | 305 | 8 | 2 | 1 | 11 | 410 |
| 7:30 AM | 6 | 104 | 0 | 110 | 274 | 8 | 1 | 283 | 4 | 1 | 0 | 5 | 398 |
| 7:45 AM | 6 | 91 | 0 | 97 | 254 | 9 | 0 | 263 | 5 | 0 | 0 | 5 | 365 |
| 8:00 AM | 3 | 150 | 0 | 153 | 251 | 15 | 0 | 266 | 3 | 2 | 0 | 5 | 424 |
| Total Volume | 24 | 430 | 0 | 454 | 1078 | 38 | 1 | 1117 | 20 | 5 | 1 | 26 | 1597 |
| % Approach Total | 5.3 | 94.7 | 0.0 | | 96.5 | 3.4 | 0.1 | | 76.9 | 19.2 | 3.8 | | |
| PHF | 0.667 | 0.717 | 0.000 | 0.742 | 0.901 | 0.633 | 0.250 | 0.916 | 0.625 | 0.625 | 0.250 | 0.591 | 0.942 |
| Entering Leg | 24 | 430 | 0 | 454 | 1078 | 38 | 1 | 1117 | 20 | 5 | 1 | 26 | 1597 |
| Exiting Leg | | | | 1083 | | | | 451 | | | | 63 | 1597 |
| Total | | | | 1537 | | | | 1568 | | | | 89 | 3194 |

PDI File #: **175708 B**
Location: **N: Summer Street S: Summer Street**
Location: **W: Elkins Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Heavy Vehicles

| | Summer Street | | | | Summer Street | | | | Elkins Street | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | South | | | | West | | | | |
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 9 | 0 | 9 | 10 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 19 |
| 7:15 AM | 0 | 9 | 0 | 9 | 3 | 0 | 0 | 3 | 0 | 1 | 0 | 1 | 13 |
| 7:30 AM | 0 | 12 | 0 | 12 | 5 | 0 | 0 | 5 | 1 | 0 | 0 | 1 | 18 |
| 7:45 AM | 0 | 14 | 0 | 14 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 19 |
| Total | 0 | 44 | 0 | 44 | 23 | 0 | 0 | 23 | 1 | 1 | 0 | 2 | 69 |
| 8:00 AM | 0 | 12 | 0 | 12 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 13 |
| 8:15 AM | 0 | 8 | 0 | 8 | 11 | 1 | 0 | 12 | 1 | 0 | 0 | 1 | 21 |
| 8:30 AM | 0 | 8 | 0 | 8 | 14 | 0 | 0 | 14 | 1 | 1 | 0 | 2 | 24 |
| 8:45 AM | 0 | 13 | 0 | 13 | 18 | 0 | 0 | 18 | 1 | 0 | 0 | 1 | 32 |
| Total | 0 | 41 | 0 | 41 | 44 | 1 | 0 | 45 | 3 | 1 | 0 | 4 | 90 |
| Grand Total | 0 | 85 | 0 | 85 | 67 | 1 | 0 | 68 | 4 | 2 | 0 | 6 | 159 |
| Approach % | 0.0 | 100.0 | 0.0 | | 98.5 | 1.5 | 0.0 | | 66.7 | 33.3 | 0.0 | | |
| Total % | 0.0 | 53.5 | 0.0 | 53.5 | 42.1 | 0.6 | 0.0 | 42.8 | 2.5 | 1.3 | 0.0 | 3.8 | |
| Exiting Leg Total | | | | 69 | | | | 89 | | | | 1 | 159 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 8:00 AM | Summer Street | | | | Summer Street | | | | Elkins Street | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | South | | | | West | | | | |
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Total |
| 8:00 AM | 0 | 12 | 0 | 12 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 13 |
| 8:15 AM | 0 | 8 | 0 | 8 | 11 | 1 | 0 | 12 | 1 | 0 | 0 | 1 | 21 |
| 8:30 AM | 0 | 8 | 0 | 8 | 14 | 0 | 0 | 14 | 1 | 1 | 0 | 2 | 24 |
| 8:45 AM | 0 | 13 | 0 | 13 | 18 | 0 | 0 | 18 | 1 | 0 | 0 | 1 | 32 |
| Total Volume | 0 | 41 | 0 | 41 | 44 | 1 | 0 | 45 | 3 | 1 | 0 | 4 | 90 |
| % Approach Total | 0.0 | 100.0 | 0.0 | | 97.8 | 2.2 | 0.0 | | 75.0 | 25.0 | 0.0 | | |
| PHF | 0.000 | 0.788 | 0.000 | 0.788 | 0.611 | 0.250 | 0.000 | 0.625 | 0.750 | 0.250 | 0.000 | 0.500 | 0.703 |
| Entering Leg | 0 | 41 | 0 | 41 | 44 | 1 | 0 | 45 | 3 | 1 | 0 | 4 | 90 |
| Exiting Leg | | | | 45 | | | | 44 | | | | 1 | 90 |
| Total | | | | 86 | | | | 89 | | | | 5 | 180 |

PDI File #: **175708 B**
Location: **N: Summer Street S: Summer Street**
Location: **W: Elkins Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Class: **Buses**

| | Summer Street | | | | Summer Street | | | | Elkins Street | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | South | | | | West | | | | |
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 2 | 0 | 2 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 6 |
| 7:15 AM | 1 | 2 | 0 | 3 | 7 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 10 |
| 7:30 AM | 0 | 3 | 0 | 3 | 6 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 9 |
| 7:45 AM | 0 | 1 | 0 | 1 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 5 |
| Total | 1 | 8 | 0 | 9 | 21 | 0 | 0 | 21 | 0 | 0 | 0 | 0 | 30 |
| 8:00 AM | 0 | 3 | 0 | 3 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 7 |
| 8:15 AM | 0 | 7 | 0 | 7 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 9 |
| 8:30 AM | 0 | 7 | 0 | 7 | 8 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 15 |
| 8:45 AM | 0 | 7 | 0 | 7 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 8 |
| Total | 0 | 24 | 0 | 24 | 15 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 39 |
| Grand Total | 1 | 32 | 0 | 33 | 36 | 0 | 0 | 36 | 0 | 0 | 0 | 0 | 69 |
| Approach % | 3.0 | 97.0 | 0.0 | | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | |
| Total % | 1.4 | 46.4 | 0.0 | 47.8 | 52.2 | 0.0 | 0.0 | 52.2 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Exiting Leg Total | | | | 36 | | | | 32 | | | | 1 | 69 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 8:00 AM | Summer Street | | | | Summer Street | | | | Elkins Street | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | South | | | | West | | | | |
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Total |
| 8:00 AM | 0 | 3 | 0 | 3 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 7 |
| 8:15 AM | 0 | 7 | 0 | 7 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 9 |
| 8:30 AM | 0 | 7 | 0 | 7 | 8 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 15 |
| 8:45 AM | 0 | 7 | 0 | 7 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 8 |
| Total Volume | 0 | 24 | 0 | 24 | 15 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 39 |
| % Approach Total | 0.0 | 100.0 | 0.0 | | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | |
| PHF | 0.000 | 0.857 | 0.000 | 0.857 | 0.469 | 0.000 | 0.000 | 0.469 | 0.000 | 0.000 | 0.000 | 0.000 | 0.650 |
| Entering Leg | 0 | 24 | 0 | 24 | 15 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 39 |
| Exiting Leg | | | | 15 | | | | 24 | | | | 0 | 39 |
| Total | | | | 39 | | | | 39 | | | | 0 | 78 |

PDI File #: **175708 B**
Location: **N: Summer Street S: Summer Street**
Location: **W: Elkins Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Bicycles (on Roadway and Crosswalks)

| | Summer Street | | | | | | Summer Street | | | | | | Elkins Street | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | South | | | | | | West | | | | | | |
| | Right | Thru | U-Turn | CW-EB | CW-WB | Total | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 7:15 AM | 1 | 0 | 0 | 0 | 0 | 1 | 6 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 7:30 AM | 0 | 1 | 0 | 0 | 0 | 1 | 8 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| Total | 1 | 1 | 0 | 0 | 0 | 2 | 30 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 32 |
| 8:00 AM | 1 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 8:15 AM | 0 | 1 | 0 | 0 | 0 | 1 | 12 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| 8:30 AM | 1 | 0 | 0 | 0 | 0 | 1 | 7 | 1 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 8:45 AM | 0 | 3 | 0 | 0 | 0 | 3 | 4 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| Total | 2 | 4 | 0 | 0 | 0 | 6 | 25 | 1 | 0 | 0 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 32 |
| Grand Total | 3 | 5 | 0 | 0 | 0 | 8 | 55 | 1 | 0 | 0 | 0 | 56 | 0 | 0 | 0 | 0 | 0 | 0 | 64 |
| Approach % | 37.5 | 62.5 | 0.0 | 0.0 | 0.0 | | 98.2 | 1.8 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total % | 4.7 | 7.8 | 0.0 | 0.0 | 0.0 | 12.5 | 85.9 | 1.6 | 0.0 | 0.0 | 0.0 | 87.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Exiting Leg Total | | | | | | 55 | | | | | | 5 | | | | | | 4 | 64 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:30 AM | Summer Street | | | | | | Summer Street | | | | | | Elkins Street | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | South | | | | | | West | | | | | | |
| | Right | Thru | U-Turn | CW-EB | CW-WB | Total | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:30 AM | 0 | 1 | 0 | 0 | 0 | 1 | 8 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 8:00 AM | 1 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 8:15 AM | 0 | 1 | 0 | 0 | 0 | 1 | 12 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| Total Volume | 1 | 2 | 0 | 0 | 0 | 3 | 33 | 0 | 0 | 0 | 0 | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 36 |
| % Approach Total | 33.3 | 66.7 | 0.0 | 0.0 | 0.0 | | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| PHF | 0.250 | 0.500 | 0.000 | 0.000 | 0.000 | 0.750 | 0.688 | 0.000 | 0.000 | 0.000 | 0.000 | 0.688 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.692 |
| Entering Leg | 1 | 2 | 0 | 0 | 0 | 3 | 33 | 0 | 0 | 0 | 0 | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 36 |
| Exiting Leg | | | | | | 33 | | | | | | 2 | | | | | | 1 | 36 |
| Total | | | | | | 36 | | | | | | 35 | | | | | | 1 | 72 |

PDI File #: **175708 B**
Location: **N: Summer Street S: Summer Street**
Location: **W: Elkins Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Pedestrians

| | Summer Street | | | | | | Summer Street | | | | | | Elkins Street | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | South | | | | | | West | | | | | | |
| | Right | Thru | U-Turn | CW-EB | CW-WB | Total | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | 0 | 22 | 22 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 18 | 1 | 19 | 21 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | 4 | 26 | 26 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | 3 | 32 | 32 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 91 | 8 | 99 | 101 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | 0 | 36 | 36 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 | 1 | 42 | 42 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | 0 | 32 | 32 |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 16 | 16 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 125 | 1 | 126 | 126 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 216 | 9 | 225 | 227 |
| Approach % | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | | 0.0 | 0.0 | 0.0 | 96.0 | 4.0 | | |
| Total % | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.9 | 0.9 | 0.0 | 0.0 | 0.0 | 95.2 | 4.0 | 99.1 | |
| Exiting Leg Total | | | | | | 0 | | | | | | 2 | | | | | | 225 | 227 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:45 AM | Summer Street | | | | | | Summer Street | | | | | | Elkins Street | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | South | | | | | | West | | | | | | |
| | Right | Thru | U-Turn | CW-EB | CW-WB | Total | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | 3 | 32 | 32 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | 0 | 36 | 36 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 | 1 | 42 | 42 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | 0 | 32 | 32 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 138 | 4 | 142 | 142 |
| % Approach Total | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 97.2 | 2.8 | | |
| PHF | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.841 | 0.333 | 0.845 | 0.845 |
| Entering Leg | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 138 | 4 | 142 | 142 |
| Exiting Leg | | | | | | 0 | | | | | | 0 | | | | | | 142 | 142 |
| Total | | | | | | 0 | | | | | | 0 | | | | | | 284 | 284 |

PDI File #: **175708 BB**
Location: **N: Summer Street S: Summer Street**
Location: **W: Elkins Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Cars, Heavy Vehicles, and Buses (Combined)

| | Summer Street | | | | Summer Street | | | | Elkins Street | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | South | | | | West | | | | |
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Total |
| 4:00 PM | 1 | 244 | 0 | 245 | 159 | 3 | 0 | 162 | 3 | 6 | 0 | 9 | 416 |
| 4:15 PM | 3 | 272 | 0 | 275 | 157 | 2 | 0 | 159 | 3 | 4 | 0 | 7 | 441 |
| 4:30 PM | 2 | 256 | 0 | 258 | 192 | 2 | 0 | 194 | 0 | 4 | 0 | 4 | 456 |
| 4:45 PM | 0 | 245 | 0 | 245 | 176 | 0 | 0 | 176 | 3 | 5 | 0 | 8 | 429 |
| Total | 6 | 1017 | 0 | 1023 | 684 | 7 | 0 | 691 | 9 | 19 | 0 | 28 | 1742 |
| 5:00 PM | 1 | 254 | 0 | 255 | 203 | 0 | 0 | 203 | 4 | 5 | 0 | 9 | 467 |
| 5:15 PM | 3 | 281 | 0 | 284 | 153 | 1 | 0 | 154 | 3 | 3 | 0 | 6 | 444 |
| 5:30 PM | 4 | 281 | 0 | 285 | 171 | 0 | 0 | 171 | 0 | 1 | 0 | 1 | 457 |
| 5:45 PM | 3 | 287 | 0 | 290 | 164 | 1 | 0 | 165 | 3 | 7 | 0 | 10 | 465 |
| Total | 11 | 1103 | 0 | 1114 | 691 | 2 | 0 | 693 | 10 | 16 | 0 | 26 | 1833 |
| Grand Total | 17 | 2120 | 0 | 2137 | 1375 | 9 | 0 | 1384 | 19 | 35 | 0 | 54 | 3575 |
| Approach % | 0.8 | 99.2 | 0.0 | | 99.3 | 0.7 | 0.0 | | 35.2 | 64.8 | 0.0 | | |
| Total % | 0.5 | 59.3 | 0.0 | 59.8 | 38.5 | 0.3 | 0.0 | 38.7 | 0.5 | 1.0 | 0.0 | 1.5 | |
| Exiting Leg Total | | | | 1410 | | | | 2139 | | | | 26 | 3575 |
| Cars | 16 | 2068 | 0 | 2084 | 1298 | 7 | 0 | 1305 | 18 | 34 | 0 | 52 | 3441 |
| % Cars | 94.1 | 97.5 | 0.0 | 97.5 | 94.4 | 77.8 | 0.0 | 94.3 | 94.7 | 97.1 | 0.0 | 96.3 | 96.3 |
| Exiting Leg Total | | | | 1332 | | | | 2086 | | | | 23 | 3441 |
| Heavy Vehicles | 1 | 26 | 0 | 27 | 49 | 2 | 0 | 51 | 0 | 1 | 0 | 1 | 79 |
| % Heavy Vehicles | 5.9 | 1.2 | 0.0 | 1.3 | 3.6 | 22.2 | 0.0 | 3.7 | 0.0 | 2.9 | 0.0 | 1.9 | 2.2 |
| Exiting Leg Total | | | | 50 | | | | 26 | | | | 3 | 79 |
| Buses | 0 | 26 | 0 | 26 | 28 | 0 | 0 | 28 | 1 | 0 | 0 | 1 | 55 |
| % Buses | 0.0 | 1.2 | 0.0 | 1.2 | 2.0 | 0.0 | 0.0 | 2.0 | 5.3 | 0.0 | 0.0 | 1.9 | 1.5 |
| Exiting Leg Total | | | | 28 | | | | 27 | | | | 0 | 55 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 5:00 PM | Summer Street | | | | Summer Street | | | | Elkins Street | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | South | | | | West | | | | |
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Total |
| 5:00 PM | 1 | 254 | 0 | 255 | 203 | 0 | 0 | 203 | 4 | 5 | 0 | 9 | 467 |
| 5:15 PM | 3 | 281 | 0 | 284 | 153 | 1 | 0 | 154 | 3 | 3 | 0 | 6 | 444 |
| 5:30 PM | 4 | 281 | 0 | 285 | 171 | 0 | 0 | 171 | 0 | 1 | 0 | 1 | 457 |
| 5:45 PM | 3 | 287 | 0 | 290 | 164 | 1 | 0 | 165 | 3 | 7 | 0 | 10 | 465 |
| Total Volume | 11 | 1103 | 0 | 1114 | 691 | 2 | 0 | 693 | 10 | 16 | 0 | 26 | 1833 |
| % Approach Total | 1.0 | 99.0 | 0.0 | | 99.7 | 0.3 | 0.0 | | 38.5 | 61.5 | 0.0 | | |
| PHF | 0.688 | 0.961 | 0.000 | 0.960 | 0.851 | 0.500 | 0.000 | 0.853 | 0.625 | 0.571 | 0.000 | 0.650 | 0.981 |
| Cars | 11 | 1079 | 0 | 1090 | 674 | 2 | 0 | 676 | 10 | 15 | 0 | 25 | 1791 |
| Cars % | 100.0 | 97.8 | 0.0 | 97.8 | 97.5 | 100.0 | 0.0 | 97.5 | 100.0 | 93.8 | 0.0 | 96.2 | 97.7 |
| Heavy Vehicles | 0 | 10 | 0 | 10 | 3 | 0 | 0 | 3 | 0 | 1 | 0 | 1 | 14 |
| Heavy Vehicles % | 0.0 | 0.9 | 0.0 | 0.9 | 0.4 | 0.0 | 0.0 | 0.4 | 0.0 | 6.3 | 0.0 | 3.8 | 0.8 |
| Buses | 0 | 14 | 0 | 14 | 14 | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 28 |
| Buses % | 0.0 | 1.3 | 0.0 | 1.3 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.5 |
| Cars Enter Leg | 11 | 1079 | 0 | 1090 | 674 | 2 | 0 | 676 | 10 | 15 | 0 | 25 | 1791 |
| Heavy Enter Leg | 0 | 10 | 0 | 10 | 3 | 0 | 0 | 3 | 0 | 1 | 0 | 1 | 14 |
| Bus Enter Leg | 0 | 14 | 0 | 14 | 14 | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 28 |
| Total Entering Leg | 11 | 1103 | 0 | 1114 | 691 | 2 | 0 | 693 | 10 | 16 | 0 | 26 | 1833 |
| Cars Exiting Leg | | | | 689 | | | | 1089 | | | | 13 | 1791 |
| Heavy Exiting Leg | | | | 4 | | | | 10 | | | | 0 | 14 |
| Buses Exiting Leg | | | | 14 | | | | 14 | | | | 0 | 28 |
| Total Exiting Leg | | | | 707 | | | | 1113 | | | | 13 | 1833 |

PDI File #: **175708 BB**
Location: **N: Summer Street S: Summer Street**
Location: **W: Elkins Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Class: **Cars**

| | Summer Street | | | | Summer Street | | | | Elkins Street | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | South | | | | West | | | | |
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Total |
| 4:00 PM | 1 | 230 | 0 | 231 | 142 | 3 | 0 | 145 | 3 | 6 | 0 | 9 | 385 |
| 4:15 PM | 2 | 267 | 0 | 269 | 135 | 0 | 0 | 135 | 3 | 4 | 0 | 7 | 411 |
| 4:30 PM | 2 | 253 | 0 | 255 | 182 | 2 | 0 | 184 | 0 | 4 | 0 | 4 | 443 |
| 4:45 PM | 0 | 239 | 0 | 239 | 165 | 0 | 0 | 165 | 2 | 5 | 0 | 7 | 411 |
| Total | 5 | 989 | 0 | 994 | 624 | 5 | 0 | 629 | 8 | 19 | 0 | 27 | 1650 |
| 5:00 PM | 1 | 249 | 0 | 250 | 200 | 0 | 0 | 200 | 4 | 5 | 0 | 9 | 459 |
| 5:15 PM | 3 | 275 | 0 | 278 | 148 | 1 | 0 | 149 | 3 | 3 | 0 | 6 | 433 |
| 5:30 PM | 4 | 274 | 0 | 278 | 167 | 0 | 0 | 167 | 0 | 1 | 0 | 1 | 446 |
| 5:45 PM | 3 | 281 | 0 | 284 | 159 | 1 | 0 | 160 | 3 | 6 | 0 | 9 | 453 |
| Total | 11 | 1079 | 0 | 1090 | 674 | 2 | 0 | 676 | 10 | 15 | 0 | 25 | 1791 |
| Grand Total | 16 | 2068 | 0 | 2084 | 1298 | 7 | 0 | 1305 | 18 | 34 | 0 | 52 | 3441 |
| Approach % | 0.8 | 99.2 | 0.0 | | 99.5 | 0.5 | 0.0 | | 34.6 | 65.4 | 0.0 | | |
| Total % | 0.5 | 60.1 | 0.0 | 60.6 | 37.7 | 0.2 | 0.0 | 37.9 | 0.5 | 1.0 | 0.0 | 1.5 | |
| Exiting Leg Total | | | | 1332 | | | | 2086 | | | | 23 | 3441 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 5:00 PM | Summer Street | | | | Summer Street | | | | Elkins Street | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | South | | | | West | | | | |
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Total |
| 5:00 PM | 1 | 249 | 0 | 250 | 200 | 0 | 0 | 200 | 4 | 5 | 0 | 9 | 459 |
| 5:15 PM | 3 | 275 | 0 | 278 | 148 | 1 | 0 | 149 | 3 | 3 | 0 | 6 | 433 |
| 5:30 PM | 4 | 274 | 0 | 278 | 167 | 0 | 0 | 167 | 0 | 1 | 0 | 1 | 446 |
| 5:45 PM | 3 | 281 | 0 | 284 | 159 | 1 | 0 | 160 | 3 | 6 | 0 | 9 | 453 |
| Total Volume | 11 | 1079 | 0 | 1090 | 674 | 2 | 0 | 676 | 10 | 15 | 0 | 25 | 1791 |
| % Approach Total | 1.0 | 99.0 | 0.0 | | 99.7 | 0.3 | 0.0 | | 40.0 | 60.0 | 0.0 | | |
| PHF | 0.688 | 0.960 | 0.000 | 0.960 | 0.843 | 0.500 | 0.000 | 0.845 | 0.625 | 0.625 | 0.000 | 0.694 | 0.975 |
| Entering Leg | 11 | 1079 | 0 | 1090 | 674 | 2 | 0 | 676 | 10 | 15 | 0 | 25 | 1791 |
| Exiting Leg | | | | 689 | | | | 1089 | | | | 13 | 1791 |
| Total | | | | 1779 | | | | 1765 | | | | 38 | 3582 |

PDI File #: **175708 BB**
Location: **N: Summer Street S: Summer Street**
Location: **W: Elkins Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Heavy Vehicles

| | Summer Street | | | | Summer Street | | | | Elkins Street | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | South | | | | West | | | | |
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Total |
| 4:00 PM | 0 | 12 | 0 | 12 | 13 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 25 |
| 4:15 PM | 1 | 1 | 0 | 2 | 20 | 2 | 0 | 22 | 0 | 0 | 0 | 0 | 24 |
| 4:30 PM | 0 | 1 | 0 | 1 | 9 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 10 |
| 4:45 PM | 0 | 2 | 0 | 2 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 6 |
| Total | 1 | 16 | 0 | 17 | 46 | 2 | 0 | 48 | 0 | 0 | 0 | 0 | 65 |
| 5:00 PM | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 5:15 PM | 0 | 2 | 0 | 2 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 3 |
| 5:30 PM | 0 | 2 | 0 | 2 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 4 |
| 5:45 PM | 0 | 4 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 5 |
| Total | 0 | 10 | 0 | 10 | 3 | 0 | 0 | 3 | 0 | 1 | 0 | 1 | 14 |
| Grand Total | 1 | 26 | 0 | 27 | 49 | 2 | 0 | 51 | 0 | 1 | 0 | 1 | 79 |
| Approach % | 3.7 | 96.3 | 0.0 | | 96.1 | 3.9 | 0.0 | | 0.0 | 100.0 | 0.0 | | |
| Total % | 1.3 | 32.9 | 0.0 | 34.2 | 62.0 | 2.5 | 0.0 | 64.6 | 0.0 | 1.3 | 0.0 | 1.3 | |
| Exiting Leg Total | | | | 50 | | | | 26 | | | | 3 | 79 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:00 PM | Summer Street | | | | Summer Street | | | | Elkins Street | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | South | | | | West | | | | |
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Total |
| 4:00 PM | 0 | 12 | 0 | 12 | 13 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 25 |
| 4:15 PM | 1 | 1 | 0 | 2 | 20 | 2 | 0 | 22 | 0 | 0 | 0 | 0 | 24 |
| 4:30 PM | 0 | 1 | 0 | 1 | 9 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 10 |
| 4:45 PM | 0 | 2 | 0 | 2 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 6 |
| Total Volume | 1 | 16 | 0 | 17 | 46 | 2 | 0 | 48 | 0 | 0 | 0 | 0 | 65 |
| % Approach Total | 5.9 | 94.1 | 0.0 | | 95.8 | 4.2 | 0.0 | | 0.0 | 0.0 | 0.0 | | |
| PHF | 0.250 | 0.333 | 0.000 | 0.354 | 0.575 | 0.250 | 0.000 | 0.545 | 0.000 | 0.000 | 0.000 | 0.000 | 0.650 |
| Entering Leg | 1 | 16 | 0 | 17 | 46 | 2 | 0 | 48 | 0 | 0 | 0 | 0 | 65 |
| Exiting Leg | | | | 46 | | | | 16 | | | | 3 | 65 |
| Total | | | | 63 | | | | 64 | | | | 3 | 130 |

PDI File #: **175708 BB**
Location: **N: Summer Street S: Summer Street**
Location: **W: Elkins Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Class: **Buses**

| | Summer Street | | | | Summer Street | | | | Elkins Street | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | South | | | | West | | | | |
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Total |
| 4:00 PM | 0 | 2 | 0 | 2 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 6 |
| 4:15 PM | 0 | 4 | 0 | 4 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 6 |
| 4:30 PM | 0 | 2 | 0 | 2 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 3 |
| 4:45 PM | 0 | 4 | 0 | 4 | 7 | 0 | 0 | 7 | 1 | 0 | 0 | 1 | 12 |
| Total | 0 | 12 | 0 | 12 | 14 | 0 | 0 | 14 | 1 | 0 | 0 | 1 | 27 |
| 5:00 PM | 0 | 3 | 0 | 3 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 6 |
| 5:15 PM | 0 | 4 | 0 | 4 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 8 |
| 5:30 PM | 0 | 5 | 0 | 5 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 7 |
| 5:45 PM | 0 | 2 | 0 | 2 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 7 |
| Total | 0 | 14 | 0 | 14 | 14 | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 28 |
| Grand Total | 0 | 26 | 0 | 26 | 28 | 0 | 0 | 28 | 1 | 0 | 0 | 1 | 55 |
| Approach % | 0.0 | 100.0 | 0.0 | | 100.0 | 0.0 | 0.0 | | 100.0 | 0.0 | 0.0 | | |
| Total % | 0.0 | 47.3 | 0.0 | 47.3 | 50.9 | 0.0 | 0.0 | 50.9 | 1.8 | 0.0 | 0.0 | 1.8 | |
| Exiting Leg Total | | | | 28 | | | | 27 | | | | 0 | 55 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:45 PM | Summer Street | | | | Summer Street | | | | Elkins Street | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | South | | | | West | | | | |
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Total |
| 4:45 PM | 0 | 4 | 0 | 4 | 7 | 0 | 0 | 7 | 1 | 0 | 0 | 1 | 12 |
| 5:00 PM | 0 | 3 | 0 | 3 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 6 |
| 5:15 PM | 0 | 4 | 0 | 4 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 8 |
| 5:30 PM | 0 | 5 | 0 | 5 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 7 |
| Total Volume | 0 | 16 | 0 | 16 | 16 | 0 | 0 | 16 | 1 | 0 | 0 | 1 | 33 |
| % Approach Total | 0.0 | 100.0 | 0.0 | | 100.0 | 0.0 | 0.0 | | 100.0 | 0.0 | 0.0 | | |
| PHF | 0.000 | 0.800 | 0.000 | 0.800 | 0.571 | 0.000 | 0.000 | 0.571 | 0.250 | 0.000 | 0.000 | 0.250 | 0.688 |
| Entering Leg | 0 | 16 | 0 | 16 | 16 | 0 | 0 | 16 | 1 | 0 | 0 | 1 | 33 |
| Exiting Leg | | | | 16 | | | | 17 | | | | 0 | 33 |
| Total | | | | 32 | | | | 33 | | | | 1 | 66 |

PDI File #: **175708 BB**
Location: **N: Summer Street S: Summer Street**
Location: **W: Elkins Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Class: **Bicycles (on Roadway and Crosswalks)**

| | Summer Street | | | | | | Summer Street | | | | | | Elkins Street | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | South | | | | | | West | | | | | | |
| | Right | Thru | U-Turn | CW-EB | CW-WB | Total | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 4:00 PM | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 4:15 PM | 0 | 5 | 0 | 0 | 0 | 5 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 4:30 PM | 0 | 2 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 4 |
| 4:45 PM | 0 | 8 | 0 | 0 | 0 | 8 | 1 | 0 | 0 | 0 | 1 | 2 | 0 | 1 | 0 | 0 | 1 | 2 | 12 |
| Total | 0 | 16 | 0 | 0 | 0 | 16 | 4 | 0 | 0 | 0 | 1 | 5 | 0 | 1 | 0 | 0 | 2 | 3 | 24 |
| 5:00 PM | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 5:15 PM | 0 | 8 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 5:30 PM | 0 | 14 | 0 | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| 5:45 PM | 0 | 8 | 0 | 0 | 0 | 8 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| Total | 0 | 34 | 0 | 0 | 0 | 34 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 37 |
| Grand Total | 0 | 50 | 0 | 0 | 0 | 50 | 7 | 0 | 0 | 0 | 1 | 8 | 0 | 1 | 0 | 0 | 2 | 3 | 61 |
| Approach % | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | | 87.5 | 0.0 | 0.0 | 0.0 | 12.5 | | 0.0 | 33.3 | 0.0 | 0.0 | 66.7 | | |
| Total % | 0.0 | 82.0 | 0.0 | 0.0 | 0.0 | 82.0 | 11.5 | 0.0 | 0.0 | 0.0 | 1.6 | 13.1 | 0.0 | 1.6 | 0.0 | 0.0 | 3.3 | 4.9 | |
| Exiting Leg Total | | | | | | 8 | | | | | | 51 | | | | | | 2 | 61 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:45 PM | Summer Street | | | | | | Summer Street | | | | | | Elkins Street | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | South | | | | | | West | | | | | | |
| | Right | Thru | U-Turn | CW-EB | CW-WB | Total | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 4:45 PM | 0 | 8 | 0 | 0 | 0 | 8 | 1 | 0 | 0 | 0 | 1 | 2 | 0 | 1 | 0 | 0 | 1 | 2 | 12 |
| 5:00 PM | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 5:15 PM | 0 | 8 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 5:30 PM | 0 | 14 | 0 | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| Total Volume | 0 | 34 | 0 | 0 | 0 | 34 | 1 | 0 | 0 | 0 | 1 | 2 | 0 | 1 | 0 | 0 | 1 | 2 | 38 |
| % Approach Total | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | | 50.0 | 0.0 | 0.0 | 0.0 | 50.0 | | 0.0 | 50.0 | 0.0 | 0.0 | 50.0 | | |
| PHF | 0.000 | 0.607 | 0.000 | 0.000 | 0.000 | 0.607 | 0.250 | 0.000 | 0.000 | 0.000 | 0.250 | 0.250 | 0.000 | 0.250 | 0.000 | 0.000 | 0.250 | 0.250 | 0.679 |
| Entering Leg | 0 | 34 | 0 | 0 | 0 | 34 | 1 | 0 | 0 | 0 | 1 | 2 | 0 | 1 | 0 | 0 | 1 | 2 | 38 |
| Exiting Leg | | | | | | 2 | | | | | | 35 | | | | | | 1 | 38 |
| Total | | | | | | 36 | | | | | | 37 | | | | | | 3 | 76 |

PDI File #: **175708 BB**
Location: **N: Summer Street S: Summer Street**
Location: **W: Elkins Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Pedestrians

| | Summer Street | | | | | | Summer Street | | | | | | Elkins Street | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | South | | | | | | West | | | | | | |
| | Right | Thru | U-Turn | CW-EB | CW-WB | Total | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 7 | 7 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 8 | 11 | 11 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 12 | 15 | 15 |
| 4:45 PM | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 25 | 40 | 41 |
| Total | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | 51 | 73 | 74 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 6 | 23 | 29 | 32 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 31 | 45 | 45 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 5 | 37 | 42 | 44 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 34 | 37 | 37 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 5 | 0 | 0 | 0 | 28 | 125 | 153 | 158 |
| Grand Total | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 5 | 5 | 0 | 0 | 0 | 50 | 176 | 226 | 232 |
| Approach % | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | | 0.0 | 0.0 | 0.0 | 22.1 | 77.9 | | |
| Total % | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 2.2 | 2.2 | 0.0 | 0.0 | 0.0 | 21.6 | 75.9 | 97.4 | |
| Exiting Leg Total | | | | | | 1 | | | | | | 5 | | | | | | 226 | 232 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:45 PM | Summer Street | | | | | | Summer Street | | | | | | Elkins Street | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | South | | | | | | West | | | | | | |
| | Right | Thru | U-Turn | CW-EB | CW-WB | Total | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 4:45 PM | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 25 | 40 | 41 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 6 | 23 | 29 | 32 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 31 | 45 | 45 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 5 | 37 | 42 | 44 |
| Total Volume | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 5 | 5 | 0 | 0 | 0 | 40 | 116 | 156 | 162 |
| % Approach Total | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | | 0.0 | 0.0 | 0.0 | 25.6 | 74.4 | | |
| PHF | 0.000 | 0.000 | 0.000 | 0.000 | 0.250 | 0.250 | 0.000 | 0.000 | 0.000 | 0.000 | 0.417 | 0.417 | 0.000 | 0.000 | 0.000 | 0.667 | 0.784 | 0.867 | 0.900 |
| Entering Leg | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 5 | 5 | 0 | 0 | 0 | 40 | 116 | 156 | 162 |
| Exiting Leg | | | | | | 1 | | | | | | 5 | | | | | | 156 | 162 |
| Total | | | | | | 2 | | | | | | 10 | | | | | | 312 | 324 |

PDI File #: **175708 C**
Location: **N: Summer Street S: L Street**
Location: **E: East 1st Street W: East 1st Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Cars, Heavy Vehicles, and Buses (Combined)

| | Summer Street | | | | | East 1st Street | | | | | L Street | | | | | East 1st Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 5 | 84 | 33 | 0 | 122 | 78 | 6 | 5 | 0 | 89 | 4 | 202 | 7 | 0 | 213 | 14 | 16 | 13 | 0 | 43 | 467 |
| 7:15 AM | 13 | 63 | 32 | 0 | 108 | 95 | 22 | 8 | 0 | 125 | 6 | 204 | 13 | 0 | 223 | 13 | 16 | 21 | 0 | 50 | 506 |
| 7:30 AM | 21 | 71 | 33 | 0 | 125 | 87 | 28 | 1 | 0 | 116 | 2 | 182 | 13 | 0 | 197 | 14 | 18 | 14 | 0 | 46 | 484 |
| 7:45 AM | 13 | 63 | 34 | 0 | 110 | 95 | 32 | 7 | 0 | 134 | 5 | 169 | 14 | 0 | 188 | 8 | 21 | 9 | 0 | 38 | 470 |
| Total | 52 | 281 | 132 | 0 | 465 | 355 | 88 | 21 | 0 | 464 | 17 | 757 | 47 | 0 | 821 | 49 | 71 | 57 | 0 | 177 | 1927 |
| 8:00 AM | 23 | 93 | 45 | 0 | 161 | 93 | 34 | 6 | 0 | 133 | 4 | 157 | 19 | 0 | 180 | 9 | 17 | 14 | 0 | 40 | 514 |
| 8:15 AM | 21 | 87 | 38 | 0 | 146 | 100 | 29 | 1 | 0 | 130 | 3 | 171 | 9 | 0 | 183 | 8 | 22 | 11 | 0 | 41 | 500 |
| 8:30 AM | 14 | 80 | 34 | 0 | 128 | 71 | 18 | 2 | 0 | 91 | 3 | 186 | 9 | 0 | 198 | 13 | 6 | 7 | 0 | 26 | 443 |
| 8:45 AM | 16 | 97 | 38 | 0 | 151 | 71 | 13 | 3 | 0 | 87 | 6 | 175 | 5 | 0 | 186 | 12 | 8 | 10 | 0 | 30 | 454 |
| Total | 74 | 357 | 155 | 0 | 586 | 335 | 94 | 12 | 0 | 441 | 16 | 689 | 42 | 0 | 747 | 42 | 53 | 42 | 0 | 137 | 1911 |
| Grand Total | 126 | 638 | 287 | 0 | 1051 | 690 | 182 | 33 | 0 | 905 | 33 | 1446 | 89 | 0 | 1568 | 91 | 124 | 99 | 0 | 314 | 3838 |
| Approach % | 12.0 | 60.7 | 27.3 | 0.0 | | 76.2 | 20.1 | 3.6 | 0.0 | | 2.1 | 92.2 | 5.7 | 0.0 | | 29.0 | 39.5 | 31.5 | 0.0 | | |
| Total % | 3.3 | 16.6 | 7.5 | 0.0 | 27.4 | 18.0 | 4.7 | 0.9 | 0.0 | 23.6 | 0.9 | 37.7 | 2.3 | 0.0 | 40.9 | 2.4 | 3.2 | 2.6 | 0.0 | 8.2 | |
| Exiting Leg Total | | | | | 2235 | | | | | 444 | | | | | 762 | | | | | 397 | 3838 |
| Cars | 118 | 620 | 191 | 0 | 929 | 646 | 167 | 28 | 0 | 841 | 18 | 1405 | 88 | 0 | 1511 | 84 | 100 | 84 | 0 | 268 | 3549 |
| % Cars | 93.7 | 97.2 | 66.6 | 0.0 | 88.4 | 93.6 | 91.8 | 84.8 | 0.0 | 92.9 | 54.5 | 97.2 | 98.9 | 0.0 | 96.4 | 92.3 | 80.6 | 84.8 | 0.0 | 85.4 | 92.5 |
| Exiting Leg Total | | | | | 2135 | | | | | 309 | | | | | 732 | | | | | 373 | 3549 |
| Heavy Vehicles | 7 | 11 | 71 | 0 | 89 | 42 | 14 | 3 | 0 | 59 | 1 | 8 | 0 | 0 | 9 | 6 | 9 | 13 | 0 | 28 | 185 |
| % Heavy Vehicles | 5.6 | 1.7 | 24.7 | 0.0 | 8.5 | 6.1 | 7.7 | 9.1 | 0.0 | 6.5 | 3.0 | 0.6 | 0.0 | 0.0 | 0.6 | 6.6 | 7.3 | 13.1 | 0.0 | 8.9 | 4.8 |
| Exiting Leg Total | | | | | 63 | | | | | 81 | | | | | 20 | | | | | 21 | 185 |
| Buses | 1 | 7 | 25 | 0 | 33 | 2 | 1 | 2 | 0 | 5 | 14 | 33 | 1 | 0 | 48 | 1 | 15 | 2 | 0 | 18 | 104 |
| % Buses | 0.8 | 1.1 | 8.7 | 0.0 | 3.1 | 0.3 | 0.5 | 6.1 | 0.0 | 0.6 | 42.4 | 2.3 | 1.1 | 0.0 | 3.1 | 1.1 | 12.1 | 2.0 | 0.0 | 5.7 | 2.7 |
| Exiting Leg Total | | | | | 37 | | | | | 54 | | | | | 10 | | | | | 3 | 104 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:15 AM | Summer Street | | | | | East 1st Street | | | | | L Street | | | | | East 1st Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:15 AM | 13 | 63 | 32 | 0 | 108 | 95 | 22 | 8 | 0 | 125 | 6 | 204 | 13 | 0 | 223 | 13 | 16 | 21 | 0 | 50 | 506 |
| 7:30 AM | 21 | 71 | 33 | 0 | 125 | 87 | 28 | 1 | 0 | 116 | 2 | 182 | 13 | 0 | 197 | 14 | 18 | 14 | 0 | 46 | 484 |
| 7:45 AM | 13 | 63 | 34 | 0 | 110 | 95 | 32 | 7 | 0 | 134 | 5 | 169 | 14 | 0 | 188 | 8 | 21 | 9 | 0 | 38 | 470 |
| 8:00 AM | 23 | 93 | 45 | 0 | 161 | 93 | 34 | 6 | 0 | 133 | 4 | 157 | 19 | 0 | 180 | 9 | 17 | 14 | 0 | 40 | 514 |
| Total Volume | 70 | 290 | 144 | 0 | 504 | 370 | 116 | 22 | 0 | 508 | 17 | 712 | 59 | 0 | 788 | 44 | 72 | 58 | 0 | 174 | 1974 |
| % Approach Total | 13.9 | 57.5 | 28.6 | 0.0 | | 72.8 | 22.8 | 4.3 | 0.0 | | 2.2 | 90.4 | 7.5 | 0.0 | | 25.3 | 41.4 | 33.3 | 0.0 | | |
| PHF | 0.761 | 0.780 | 0.800 | 0.000 | 0.783 | 0.974 | 0.853 | 0.688 | 0.000 | 0.948 | 0.708 | 0.873 | 0.776 | 0.000 | 0.883 | 0.786 | 0.857 | 0.690 | 0.000 | 0.870 | 0.960 |
| Cars | 68 | 283 | 95 | 0 | 446 | 365 | 104 | 18 | 0 | 487 | 8 | 688 | 59 | 0 | 755 | 41 | 57 | 51 | 0 | 149 | 1837 |
| Cars % | 97.1 | 97.6 | 66.0 | 0.0 | 88.5 | 98.6 | 89.7 | 81.8 | 0.0 | 95.9 | 47.1 | 96.6 | 100.0 | 0.0 | 95.8 | 93.2 | 79.2 | 87.9 | 0.0 | 85.6 | 93.1 |
| Heavy Vehicles | 1 | 6 | 40 | 0 | 47 | 3 | 11 | 3 | 0 | 17 | 1 | 6 | 0 | 0 | 7 | 2 | 5 | 5 | 0 | 12 | 83 |
| Heavy Vehicles % | 1.4 | 2.1 | 27.8 | 0.0 | 9.3 | 0.8 | 9.5 | 13.6 | 0.0 | 3.3 | 5.9 | 0.8 | 0.0 | 0.0 | 0.9 | 4.5 | 6.9 | 8.6 | 0.0 | 6.9 | 4.2 |
| Buses | 1 | 1 | 9 | 0 | 11 | 2 | 1 | 1 | 0 | 4 | 8 | 18 | 0 | 0 | 26 | 1 | 10 | 2 | 0 | 13 | 54 |
| Buses % | 1.4 | 0.3 | 6.3 | 0.0 | 2.2 | 0.5 | 0.9 | 4.5 | 0.0 | 0.8 | 47.1 | 2.5 | 0.0 | 0.0 | 3.3 | 2.3 | 13.9 | 3.4 | 0.0 | 7.5 | 2.7 |
| Cars Enter Leg | 68 | 283 | 95 | 0 | 446 | 365 | 104 | 18 | 0 | 487 | 8 | 688 | 59 | 0 | 755 | 41 | 57 | 51 | 0 | 149 | 1837 |
| Heavy Enter Leg | 1 | 6 | 40 | 0 | 47 | 3 | 11 | 3 | 0 | 17 | 1 | 6 | 0 | 0 | 7 | 2 | 5 | 5 | 0 | 12 | 83 |
| Bus Enter Leg | 1 | 1 | 9 | 0 | 11 | 2 | 1 | 1 | 0 | 4 | 8 | 18 | 0 | 0 | 26 | 1 | 10 | 2 | 0 | 13 | 54 |
| Total Entering Leg | 70 | 290 | 144 | 0 | 504 | 370 | 116 | 22 | 0 | 508 | 17 | 712 | 59 | 0 | 788 | 44 | 72 | 58 | 0 | 174 | 1974 |
| Cars Exiting Leg | | | | | 1104 | | | | | 160 | | | | | 342 | | | | | 231 | 1837 |
| Heavy Exiting Leg | | | | | 14 | | | | | 46 | | | | | 11 | | | | | 12 | 83 |
| Buses Exiting Leg | | | | | 22 | | | | | 27 | | | | | 3 | | | | | 2 | 54 |
| Total Exiting Leg | | | | | 1140 | | | | | 233 | | | | | 356 | | | | | 245 | 1974 |

PDI File #: **175708 C**
Location: **N: Summer Street S: L Street**
Location: **E: East 1st Street W: East 1st Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Cars

| | Summer Street | | | | | East 1st Street | | | | | L Street | | | | | East 1st Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 4 | 83 | 27 | 0 | 114 | 74 | 6 | 5 | 0 | 85 | 3 | 197 | 7 | 0 | 207 | 13 | 11 | 9 | 0 | 33 | 439 |
| 7:15 AM | 13 | 59 | 22 | 0 | 94 | 94 | 19 | 6 | 0 | 119 | 3 | 196 | 13 | 0 | 212 | 12 | 10 | 19 | 0 | 41 | 466 |
| 7:30 AM | 20 | 71 | 20 | 0 | 111 | 86 | 22 | 1 | 0 | 109 | 1 | 175 | 13 | 0 | 189 | 14 | 13 | 12 | 0 | 39 | 448 |
| 7:45 AM | 13 | 61 | 25 | 0 | 99 | 92 | 30 | 6 | 0 | 128 | 1 | 164 | 14 | 0 | 179 | 6 | 19 | 7 | 0 | 32 | 438 |
| Total | 50 | 274 | 94 | 0 | 418 | 346 | 77 | 18 | 0 | 441 | 8 | 732 | 47 | 0 | 787 | 45 | 53 | 47 | 0 | 145 | 1791 |
| 8:00 AM | 22 | 92 | 28 | 0 | 142 | 93 | 33 | 5 | 0 | 131 | 3 | 153 | 19 | 0 | 175 | 9 | 15 | 13 | 0 | 37 | 485 |
| 8:15 AM | 19 | 84 | 25 | 0 | 128 | 93 | 27 | 1 | 0 | 121 | 2 | 168 | 9 | 0 | 179 | 7 | 20 | 9 | 0 | 36 | 464 |
| 8:30 AM | 13 | 79 | 21 | 0 | 113 | 58 | 17 | 1 | 0 | 76 | 2 | 179 | 9 | 0 | 190 | 12 | 4 | 7 | 0 | 23 | 402 |
| 8:45 AM | 14 | 91 | 23 | 0 | 128 | 56 | 13 | 3 | 0 | 72 | 3 | 173 | 4 | 0 | 180 | 11 | 8 | 8 | 0 | 27 | 407 |
| Total | 68 | 346 | 97 | 0 | 511 | 300 | 90 | 10 | 0 | 400 | 10 | 673 | 41 | 0 | 724 | 39 | 47 | 37 | 0 | 123 | 1758 |
| Grand Total | 118 | 620 | 191 | 0 | 929 | 646 | 167 | 28 | 0 | 841 | 18 | 1405 | 88 | 0 | 1511 | 84 | 100 | 84 | 0 | 268 | 3549 |
| Approach % | 12.7 | 66.7 | 20.6 | 0.0 | | 76.8 | 19.9 | 3.3 | 0.0 | | 1.2 | 93.0 | 5.8 | 0.0 | | 31.3 | 37.3 | 31.3 | 0.0 | | |
| Total % | 3.3 | 17.5 | 5.4 | 0.0 | 26.2 | 18.2 | 4.7 | 0.8 | 0.0 | 23.7 | 0.5 | 39.6 | 2.5 | 0.0 | 42.6 | 2.4 | 2.8 | 2.4 | 0.0 | 7.6 | |
| Exiting Leg Total | | | | | 2135 | | | | | 309 | | | | | 732 | | | | | 373 | 3549 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:15 AM | Summer Street | | | | | East 1st Street | | | | | L Street | | | | | East 1st Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:15 AM | 13 | 59 | 22 | 0 | 94 | 94 | 19 | 6 | 0 | 119 | 3 | 196 | 13 | 0 | 212 | 12 | 10 | 19 | 0 | 41 | 466 |
| 7:30 AM | 20 | 71 | 20 | 0 | 111 | 86 | 22 | 1 | 0 | 109 | 1 | 175 | 13 | 0 | 189 | 14 | 13 | 12 | 0 | 39 | 448 |
| 7:45 AM | 13 | 61 | 25 | 0 | 99 | 92 | 30 | 6 | 0 | 128 | 1 | 164 | 14 | 0 | 179 | 6 | 19 | 7 | 0 | 32 | 438 |
| 8:00 AM | 22 | 92 | 28 | 0 | 142 | 93 | 33 | 5 | 0 | 131 | 3 | 153 | 19 | 0 | 175 | 9 | 15 | 13 | 0 | 37 | 485 |
| Total Volume | 68 | 283 | 95 | 0 | 446 | 365 | 104 | 18 | 0 | 487 | 8 | 688 | 59 | 0 | 755 | 41 | 57 | 51 | 0 | 149 | 1837 |
| % Approach Total | 15.2 | 63.5 | 21.3 | 0.0 | | 74.9 | 21.4 | 3.7 | 0.0 | | 1.1 | 91.1 | 7.8 | 0.0 | | 27.5 | 38.3 | 34.2 | 0.0 | | |
| PHF | 0.773 | 0.769 | 0.848 | 0.000 | 0.785 | 0.971 | 0.788 | 0.750 | 0.000 | 0.929 | 0.667 | 0.878 | 0.776 | 0.000 | 0.890 | 0.732 | 0.750 | 0.671 | 0.000 | 0.909 | 0.947 |
| Entering Leg | 68 | 283 | 95 | 0 | 446 | 365 | 104 | 18 | 0 | 487 | 8 | 688 | 59 | 0 | 755 | 41 | 57 | 51 | 0 | 149 | 1837 |
| Exiting Leg | | | | | 1104 | | | | | 160 | | | | | 342 | | | | | 231 | 1837 |
| Total | | | | | 1550 | | | | | 647 | | | | | 1097 | | | | | 380 | 3674 |

PDI File #: **175708 C**
Location: **N: Summer Street S: L Street**
Location: **E: East 1st Street W: East 1st Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
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Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Heavy Vehicles

| | Summer Street | | | | | East 1st Street | | | | | L Street | | | | | East 1st Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 1 | 1 | 4 | 0 | 6 | 4 | 0 | 0 | 0 | 4 | 0 | 2 | 0 | 0 | 2 | 1 | 1 | 4 | 0 | 6 | 18 |
| 7:15 AM | 0 | 4 | 8 | 0 | 12 | 1 | 3 | 2 | 0 | 6 | 1 | 1 | 0 | 0 | 2 | 1 | 3 | 1 | 0 | 5 | 25 |
| 7:30 AM | 1 | 0 | 10 | 0 | 11 | 0 | 6 | 0 | 0 | 6 | 0 | 2 | 0 | 0 | 2 | 0 | 2 | 2 | 0 | 4 | 23 |
| 7:45 AM | 0 | 2 | 8 | 0 | 10 | 2 | 1 | 1 | 0 | 4 | 0 | 2 | 0 | 0 | 2 | 1 | 0 | 2 | 0 | 3 | 19 |
| Total | 2 | 7 | 30 | 0 | 39 | 7 | 10 | 3 | 0 | 20 | 1 | 7 | 0 | 0 | 8 | 3 | 6 | 9 | 0 | 18 | 85 |
| 8:00 AM | 0 | 0 | 14 | 0 | 14 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 16 |
| 8:15 AM | 2 | 2 | 7 | 0 | 11 | 7 | 2 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 4 | 24 |
| 8:30 AM | 1 | 0 | 8 | 0 | 9 | 13 | 1 | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 3 | 26 |
| 8:45 AM | 2 | 2 | 12 | 0 | 16 | 15 | 0 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 3 | 34 |
| Total | 5 | 4 | 41 | 0 | 50 | 35 | 4 | 0 | 0 | 39 | 0 | 1 | 0 | 0 | 1 | 3 | 3 | 4 | 0 | 10 | 100 |
| Grand Total | 7 | 11 | 71 | 0 | 89 | 42 | 14 | 3 | 0 | 59 | 1 | 8 | 0 | 0 | 9 | 6 | 9 | 13 | 0 | 28 | 185 |
| Approach % | 7.9 | 12.4 | 79.8 | 0.0 | | 71.2 | 23.7 | 5.1 | 0.0 | | 11.1 | 88.9 | 0.0 | 0.0 | | 21.4 | 32.1 | 46.4 | 0.0 | | |
| Total % | 3.8 | 5.9 | 38.4 | 0.0 | 48.1 | 22.7 | 7.6 | 1.6 | 0.0 | 31.9 | 0.5 | 4.3 | 0.0 | 0.0 | 4.9 | 3.2 | 4.9 | 7.0 | 0.0 | 15.1 | |
| Exiting Leg Total | | | | | 63 | | | | | 81 | | | | | 20 | | | | | 21 | 185 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 8:00 AM | Summer Street | | | | | East 1st Street | | | | | L Street | | | | | East 1st Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 8:00 AM | 0 | 0 | 14 | 0 | 14 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 16 |
| 8:15 AM | 2 | 2 | 7 | 0 | 11 | 7 | 2 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 4 | 24 |
| 8:30 AM | 1 | 0 | 8 | 0 | 9 | 13 | 1 | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 3 | 26 |
| 8:45 AM | 2 | 2 | 12 | 0 | 16 | 15 | 0 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 3 | 34 |
| Total Volume | 5 | 4 | 41 | 0 | 50 | 35 | 4 | 0 | 0 | 39 | 0 | 1 | 0 | 0 | 1 | 3 | 3 | 4 | 0 | 10 | 100 |
| % Approach Total | 10.0 | 8.0 | 82.0 | 0.0 | | 89.7 | 10.3 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 30.0 | 30.0 | 40.0 | 0.0 | | |
| PHF | 0.625 | 0.500 | 0.732 | 0.000 | 0.781 | 0.583 | 0.500 | 0.000 | 0.000 | 0.650 | 0.000 | 0.250 | 0.000 | 0.000 | 0.250 | 0.750 | 0.375 | 0.500 | 0.000 | 0.625 | 0.735 |
| Entering Leg | 5 | 4 | 41 | 0 | 50 | 35 | 4 | 0 | 0 | 39 | 0 | 1 | 0 | 0 | 1 | 3 | 3 | 4 | 0 | 10 | 100 |
| Exiting Leg | | | | | 40 | | | | | 44 | | | | | 7 | | | | | 9 | 100 |
| Total | | | | | 90 | | | | | 83 | | | | | 8 | | | | | 19 | 200 |

PDI File #: **175708 C**
Location: **N: Summer Street S: L Street**
Location: **E: East 1st Street W: East 1st Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Buses

| | Summer Street | | | | | East 1st Street | | | | | L Street | | | | | East 1st Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 4 | 0 | 4 | 0 | 0 | 4 | 10 |
| 7:15 AM | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 7 | 0 | 0 | 9 | 0 | 3 | 1 | 0 | 4 | 15 |
| 7:30 AM | 0 | 0 | 3 | 0 | 3 | 1 | 0 | 0 | 0 | 1 | 1 | 5 | 0 | 0 | 6 | 0 | 3 | 0 | 0 | 3 | 13 |
| 7:45 AM | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 2 | 4 | 3 | 0 | 0 | 7 | 1 | 2 | 0 | 0 | 3 | 13 |
| Total | 0 | 0 | 8 | 0 | 8 | 2 | 1 | 0 | 0 | 3 | 8 | 18 | 0 | 0 | 26 | 1 | 12 | 1 | 0 | 14 | 51 |
| 8:00 AM | 1 | 1 | 3 | 0 | 5 | 0 | 0 | 1 | 0 | 1 | 1 | 3 | 0 | 0 | 4 | 0 | 2 | 1 | 0 | 3 | 13 |
| 8:15 AM | 0 | 1 | 6 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 4 | 0 | 1 | 0 | 0 | 1 | 12 |
| 8:30 AM | 0 | 1 | 5 | 0 | 6 | 0 | 0 | 1 | 0 | 1 | 1 | 7 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 15 |
| 8:45 AM | 0 | 4 | 3 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 1 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 13 |
| Total | 1 | 7 | 17 | 0 | 25 | 0 | 0 | 2 | 0 | 2 | 6 | 15 | 1 | 0 | 22 | 0 | 3 | 1 | 0 | 4 | 53 |
| Grand Total | 1 | 7 | 25 | 0 | 33 | 2 | 1 | 2 | 0 | 5 | 14 | 33 | 1 | 0 | 48 | 1 | 15 | 2 | 0 | 18 | 104 |
| Approach % | 3.0 | 21.2 | 75.8 | 0.0 | | 40.0 | 20.0 | 40.0 | 0.0 | | 29.2 | 68.8 | 2.1 | 0.0 | | 5.6 | 83.3 | 11.1 | 0.0 | | |
| Total % | 1.0 | 6.7 | 24.0 | 0.0 | 31.7 | 1.9 | 1.0 | 1.9 | 0.0 | 4.8 | 13.5 | 31.7 | 1.0 | 0.0 | 46.2 | 1.0 | 14.4 | 1.9 | 0.0 | 17.3 | |
| Exiting Leg Total | | | | | 37 | | | | | 54 | | | | | 10 | | | | | 3 | 104 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:15 AM | Summer Street | | | | | East 1st Street | | | | | L Street | | | | | East 1st Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:15 AM | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 7 | 0 | 0 | 9 | 0 | 3 | 1 | 0 | 4 | 15 |
| 7:30 AM | 0 | 0 | 3 | 0 | 3 | 1 | 0 | 0 | 0 | 1 | 1 | 5 | 0 | 0 | 6 | 0 | 3 | 0 | 0 | 3 | 13 |
| 7:45 AM | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 2 | 4 | 3 | 0 | 0 | 7 | 1 | 2 | 0 | 0 | 3 | 13 |
| 8:00 AM | 1 | 1 | 3 | 0 | 5 | 0 | 0 | 1 | 0 | 1 | 1 | 3 | 0 | 0 | 4 | 0 | 2 | 1 | 0 | 3 | 13 |
| Total Volume | 1 | 1 | 9 | 0 | 11 | 2 | 1 | 1 | 0 | 4 | 8 | 18 | 0 | 0 | 26 | 1 | 10 | 2 | 0 | 13 | 54 |
| % Approach Total | 9.1 | 9.1 | 81.8 | 0.0 | | 50.0 | 25.0 | 25.0 | 0.0 | | 30.8 | 69.2 | 0.0 | 0.0 | | 7.7 | 76.9 | 15.4 | 0.0 | | |
| PHF | 0.250 | 0.250 | 0.750 | 0.000 | 0.550 | 0.500 | 0.250 | 0.250 | 0.000 | 0.500 | 0.500 | 0.643 | 0.000 | 0.000 | 0.722 | 0.250 | 0.833 | 0.500 | 0.000 | 0.813 | 0.900 |
| Entering Leg | 1 | 1 | 9 | 0 | 11 | 2 | 1 | 1 | 0 | 4 | 8 | 18 | 0 | 0 | 26 | 1 | 10 | 2 | 0 | 13 | 54 |
| Exiting Leg | | | | | 22 | | | | | 27 | | | | | 3 | | | | | 2 | 54 |
| Total | | | | | 33 | | | | | 31 | | | | | 29 | | | | | 15 | 108 |

PDI File #: **175708 C**
Location: **N: Summer Street S: L Street**
Location: **E: East 1st Street W: East 1st Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Class:

## Bicycles (on Roadway and Crosswalks)

| | Summer Street | | | | | | | East 1st Street | | | | | | | L Street | | | | | | | East 1st Street | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | East | | | | | | | South | | | | | | | West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:00 AM | 0 | 0 | 1 | 0 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 7:30 AM | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 1 | 0 | 0 | 0 | 2 | 6 |
| 7:45 AM | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 4 |
| Total | 0 | 0 | 2 | 0 | 3 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 9 | 1 | 1 | 1 | 0 | 0 | 0 | 3 | 17 |
| 8:00 AM | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 4 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 10 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 4 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 6 |
| 8:45 AM | 0 | 1 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| Total | 1 | 1 | 1 | 0 | 1 | 0 | 4 | 5 | 2 | 0 | 0 | 0 | 0 | 7 | 0 | 11 | 0 | 0 | 0 | 1 | 12 | 0 | 0 | 1 | 0 | 0 | 1 | 2 | 25 |
| Grand Total | 1 | 1 | 3 | 0 | 4 | 0 | 9 | 5 | 2 | 0 | 0 | 0 | 0 | 7 | 0 | 20 | 0 | 0 | 0 | 1 | 21 | 1 | 1 | 2 | 0 | 0 | 1 | 5 | 42 |
| Approach % | 11.1 | 11.1 | 33.3 | 0.0 | 44.4 | 0.0 | | 71.4 | 28.6 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 95.2 | 0.0 | 0.0 | 0.0 | 4.8 | | 20.0 | 20.0 | 40.0 | 0.0 | 0.0 | 20.0 | | |
| Total % | 2.4 | 2.4 | 7.1 | 0.0 | 9.5 | 0.0 | 21.4 | 11.9 | 4.8 | 0.0 | 0.0 | 0.0 | 0.0 | 16.7 | 0.0 | 47.6 | 0.0 | 0.0 | 0.0 | 2.4 | 50.0 | 2.4 | 2.4 | 4.8 | 0.0 | 0.0 | 2.4 | 11.9 | |
| Exiting Leg Total | | | | | | | 31 | | | | | | | 4 | | | | | | | 3 | | | | | | | 4 | 42 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 8:00 AM | Summer Street | | | | | | | East 1st Street | | | | | | | L Street | | | | | | | East 1st Street | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | East | | | | | | | South | | | | | | | West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 8:00 AM | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 4 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 10 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 4 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 6 |
| 8:45 AM | 0 | 1 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| Total Volume | 1 | 1 | 1 | 0 | 1 | 0 | 4 | 5 | 2 | 0 | 0 | 0 | 0 | 7 | 0 | 11 | 0 | 0 | 0 | 1 | 12 | 0 | 0 | 1 | 0 | 0 | 1 | 2 | 25 |
| % Approach Total | 25.0 | 25.0 | 25.0 | 0.0 | 25.0 | 0.0 | | 71.4 | 28.6 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 91.7 | 0.0 | 0.0 | 0.0 | 8.3 | | 0.0 | 0.0 | 50.0 | 0.0 | 0.0 | 50.0 | | |
| PHF | 0.250 | 0.250 | 0.250 | 0.000 | 0.250 | 0.000 | 0.500 | 0.250 | 0.500 | 0.000 | 0.000 | 0.000 | 0.000 | 0.350 | 0.000 | 0.688 | 0.000 | 0.000 | 0.000 | 0.250 | 0.750 | 0.000 | 0.000 | 0.250 | 0.000 | 0.000 | 0.250 | 0.500 | 0.625 |
| Entering Leg | 1 | 1 | 1 | 0 | 1 | 0 | 4 | 5 | 2 | 0 | 0 | 0 | 0 | 7 | 0 | 11 | 0 | 0 | 0 | 1 | 12 | 0 | 0 | 1 | 0 | 0 | 1 | 2 | 25 |
| Exiting Leg | | | | | | | 18 | | | | | | | 1 | | | | | | | 2 | | | | | | | 4 | 25 |
| Total | | | | | | | 22 | | | | | | | 8 | | | | | | | 14 | | | | | | | 6 | 50 |

PDI File #: **175708 C**
Location: **N: Summer Street S: L Street**
Location: **E: East 1st Street W: East 1st Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Pedestrians

| | Summer Street | | | | | | | East 1st Street | | | | | | | L Street | | | | | | | East 1st Street | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | East | | | | | | | South | | | | | | | West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:00 AM | 0 | 0 | 0 | 0 | 5 | 2 | 7 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 11 | 2 | 13 | 24 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 5 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 9 | 5 | 14 | 21 |
| 7:30 AM | 0 | 0 | 0 | 0 | 2 | 2 | 4 | 0 | 0 | 0 | 0 | 1 | 4 | 5 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 14 | 4 | 18 | 30 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 0 | 0 | 0 | 0 | 4 | 2 | 6 | 0 | 0 | 0 | 0 | 19 | 6 | 25 | 36 |
| Total | 0 | 0 | 0 | 0 | 7 | 5 | 12 | 0 | 0 | 0 | 0 | 1 | 16 | 17 | 0 | 0 | 0 | 0 | 7 | 5 | 12 | 0 | 0 | 0 | 0 | 53 | 17 | 70 | 111 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 11 | 11 | 0 | 0 | 0 | 0 | 4 | 5 | 9 | 0 | 0 | 0 | 0 | 23 | 3 | 26 | 50 |
| 8:15 AM | 0 | 0 | 0 | 0 | 4 | 2 | 6 | 0 | 0 | 0 | 0 | 2 | 10 | 12 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 30 | 4 | 34 | 55 |
| 8:30 AM | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 8 | 8 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 23 | 4 | 27 | 38 |
| 8:45 AM | 0 | 0 | 0 | 0 | 4 | 1 | 5 | 0 | 0 | 0 | 0 | 1 | 12 | 13 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 14 | 3 | 17 | 38 |
| Total | 0 | 0 | 0 | 0 | 9 | 7 | 16 | 0 | 0 | 0 | 0 | 3 | 41 | 44 | 0 | 0 | 0 | 0 | 7 | 10 | 17 | 0 | 0 | 0 | 0 | 90 | 14 | 104 | 181 |
| Grand Total | 0 | 0 | 0 | 0 | 16 | 12 | 28 | 0 | 0 | 0 | 0 | 4 | 57 | 61 | 0 | 0 | 0 | 0 | 14 | 15 | 29 | 0 | 0 | 0 | 0 | 143 | 31 | 174 | 292 |
| Approach % | 0.0 | 0.0 | 0.0 | 0.0 | 57.1 | 42.9 | | 0.0 | 0.0 | 0.0 | 0.0 | 6.6 | 93.4 | | 0.0 | 0.0 | 0.0 | 0.0 | 48.3 | 51.7 | | 0.0 | 0.0 | 0.0 | 0.0 | 82.2 | 17.8 | | |
| Total % | 0.0 | 0.0 | 0.0 | 0.0 | 5.5 | 4.1 | 9.6 | 0.0 | 0.0 | 0.0 | 0.0 | 1.4 | 19.5 | 20.9 | 0.0 | 0.0 | 0.0 | 0.0 | 4.8 | 5.1 | 9.9 | 0.0 | 0.0 | 0.0 | 0.0 | 49.0 | 10.6 | 59.6 | |
| Exiting Leg Total | | | | | | | 28 | | | | | | | 61 | | | | | | | 29 | | | | | | | 174 | 292 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 8:00 AM | Summer Street | | | | | | | East 1st Street | | | | | | | L Street | | | | | | | East 1st Street | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | East | | | | | | | South | | | | | | | West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 11 | 11 | 0 | 0 | 0 | 0 | 4 | 5 | 9 | 0 | 0 | 0 | 0 | 23 | 3 | 26 | 50 |
| 8:15 AM | 0 | 0 | 0 | 0 | 4 | 2 | 6 | 0 | 0 | 0 | 0 | 2 | 10 | 12 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 30 | 4 | 34 | 55 |
| 8:30 AM | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 8 | 8 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 23 | 4 | 27 | 38 |
| 8:45 AM | 0 | 0 | 0 | 0 | 4 | 1 | 5 | 0 | 0 | 0 | 0 | 1 | 12 | 13 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 14 | 3 | 17 | 38 |
| Total Volume | 0 | 0 | 0 | 0 | 9 | 7 | 16 | 0 | 0 | 0 | 0 | 3 | 41 | 44 | 0 | 0 | 0 | 0 | 7 | 10 | 17 | 0 | 0 | 0 | 0 | 90 | 14 | 104 | 181 |
| % Approach Total | 0.0 | 0.0 | 0.0 | 0.0 | 56.3 | 43.8 | | 0.0 | 0.0 | 0.0 | 0.0 | 6.8 | 93.2 | | 0.0 | 0.0 | 0.0 | 0.0 | 41.2 | 58.8 | | 0.0 | 0.0 | 0.0 | 0.0 | 86.5 | 13.5 | | |
| PHF | 0.000 | 0.000 | 0.000 | 0.000 | 0.563 | 0.438 | 0.667 | 0.000 | 0.000 | 0.000 | 0.000 | 0.375 | 0.854 | 0.846 | 0.000 | 0.000 | 0.000 | 0.000 | 0.438 | 0.500 | 0.472 | 0.000 | 0.000 | 0.000 | 0.000 | 0.750 | 0.875 | 0.765 | 0.823 |
| Entering Leg | 0 | 0 | 0 | 0 | 9 | 7 | 16 | 0 | 0 | 0 | 0 | 3 | 41 | 44 | 0 | 0 | 0 | 0 | 7 | 10 | 17 | 0 | 0 | 0 | 0 | 90 | 14 | 104 | 181 |
| Exiting Leg | | | | | | | 16 | | | | | | | 44 | | | | | | | 17 | | | | | | | 104 | 181 |
| Total | | | | | | | 32 | | | | | | | 88 | | | | | | | 34 | | | | | | | 208 | 362 |

PDI File #: **175708 CC**
Location: **N: Summer Street S: L Street**
Location: **E: East 1st Street W: East 1st Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Cars, Heavy Vehicles, and Buses (Combined)

| | Summer Street | | | | | East 1st Street | | | | | L Street | | | | | East 1st Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 20 | 167 | 57 | 0 | 244 | 46 | 9 | 6 | 0 | 61 | 4 | 107 | 5 | 0 | 116 | 15 | 19 | 6 | 0 | 40 | 461 |
| 4:15 PM | 30 | 181 | 65 | 0 | 276 | 51 | 16 | 2 | 0 | 69 | 7 | 97 | 7 | 0 | 111 | 10 | 25 | 10 | 0 | 45 | 501 |
| 4:30 PM | 26 | 156 | 56 | 0 | 238 | 42 | 16 | 2 | 0 | 60 | 5 | 142 | 8 | 0 | 155 | 17 | 35 | 7 | 0 | 59 | 512 |
| 4:45 PM | 26 | 180 | 65 | 0 | 271 | 54 | 13 | 2 | 0 | 69 | 0 | 113 | 4 | 0 | 117 | 9 | 16 | 8 | 0 | 33 | 490 |
| Total | 102 | 684 | 243 | 0 | 1029 | 193 | 54 | 12 | 0 | 259 | 16 | 459 | 24 | 0 | 499 | 51 | 95 | 31 | 0 | 177 | 1964 |
| 5:00 PM | 19 | 127 | 65 | 0 | 211 | 48 | 9 | 6 | 0 | 63 | 4 | 144 | 6 | 0 | 154 | 14 | 24 | 10 | 0 | 48 | 476 |
| 5:15 PM | 32 | 180 | 65 | 0 | 277 | 32 | 11 | 5 | 0 | 48 | 4 | 111 | 7 | 0 | 122 | 12 | 31 | 6 | 0 | 49 | 496 |
| 5:30 PM | 28 | 145 | 75 | 0 | 248 | 44 | 12 | 5 | 0 | 61 | 4 | 116 | 8 | 0 | 128 | 10 | 22 | 8 | 0 | 40 | 477 |
| 5:45 PM | 33 | 186 | 64 | 0 | 283 | 30 | 10 | 3 | 0 | 43 | 8 | 127 | 5 | 0 | 140 | 24 | 25 | 7 | 0 | 56 | 522 |
| Total | 112 | 638 | 269 | 0 | 1019 | 154 | 42 | 19 | 0 | 215 | 20 | 498 | 26 | 0 | 544 | 60 | 102 | 31 | 0 | 193 | 1971 |
| Grand Total | 214 | 1322 | 512 | 0 | 2048 | 347 | 96 | 31 | 0 | 474 | 36 | 957 | 50 | 0 | 1043 | 111 | 197 | 62 | 0 | 370 | 3935 |
| Approach % | 10.4 | 64.6 | 25.0 | 0.0 | | 73.2 | 20.3 | 6.5 | 0.0 | | 3.5 | 91.8 | 4.8 | 0.0 | | 30.0 | 53.2 | 16.8 | 0.0 | | |
| Total % | 5.4 | 33.6 | 13.0 | 0.0 | 52.0 | 8.8 | 2.4 | 0.8 | 0.0 | 12.0 | 0.9 | 24.3 | 1.3 | 0.0 | 26.5 | 2.8 | 5.0 | 1.6 | 0.0 | 9.4 | |
| Exiting Leg Total | | | | | 1366 | | | | | 745 | | | | | 1464 | | | | | 360 | 3935 |
| Cars | 205 | 1301 | 495 | 0 | 2001 | 289 | 92 | 31 | 0 | 412 | 35 | 948 | 48 | 0 | 1031 | 110 | 191 | 54 | 0 | 355 | 3799 |
| % Cars | 95.8 | 98.4 | 96.7 | 0.0 | 97.7 | 83.3 | 95.8 | 100.0 | 0.0 | 86.9 | 97.2 | 99.1 | 96.0 | 0.0 | 98.8 | 99.1 | 97.0 | 87.1 | 0.0 | 95.9 | 96.5 |
| Exiting Leg Total | | | | | 1291 | | | | | 721 | | | | | 1442 | | | | | 345 | 3799 |
| Heavy Vehicles | 6 | 4 | 12 | 0 | 22 | 41 | 2 | 0 | 0 | 43 | 1 | 3 | 1 | 0 | 5 | 1 | 4 | 3 | 0 | 8 | 78 |
| % Heavy Vehicles | 2.8 | 0.3 | 2.3 | 0.0 | 1.1 | 11.8 | 2.1 | 0.0 | 0.0 | 9.1 | 2.8 | 0.3 | 2.0 | 0.0 | 0.5 | 0.9 | 2.0 | 4.8 | 0.0 | 2.2 | 2.0 |
| Exiting Leg Total | | | | | 47 | | | | | 17 | | | | | 5 | | | | | 9 | 78 |
| Buses | 3 | 17 | 5 | 0 | 25 | 17 | 2 | 0 | 0 | 19 | 0 | 6 | 1 | 0 | 7 | 0 | 2 | 5 | 0 | 7 | 58 |
| % Buses | 1.4 | 1.3 | 1.0 | 0.0 | 1.2 | 4.9 | 2.1 | 0.0 | 0.0 | 4.0 | 0.0 | 0.6 | 2.0 | 0.0 | 0.7 | 0.0 | 1.0 | 8.1 | 0.0 | 1.9 | 1.5 |
| Exiting Leg Total | | | | | 28 | | | | | 7 | | | | | 17 | | | | | 6 | 58 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:15 PM | Summer Street | | | | | East 1st Street | | | | | L Street | | | | | East 1st Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:15 PM | 30 | 181 | 65 | 0 | 276 | 51 | 16 | 2 | 0 | 69 | 7 | 97 | 7 | 0 | 111 | 10 | 25 | 10 | 0 | 45 | 501 |
| 4:30 PM | 26 | 156 | 56 | 0 | 238 | 42 | 16 | 2 | 0 | 60 | 5 | 142 | 8 | 0 | 155 | 17 | 35 | 7 | 0 | 59 | 512 |
| 4:45 PM | 26 | 180 | 65 | 0 | 271 | 54 | 13 | 2 | 0 | 69 | 0 | 113 | 4 | 0 | 117 | 9 | 16 | 8 | 0 | 33 | 490 |
| 5:00 PM | 19 | 127 | 65 | 0 | 211 | 48 | 9 | 6 | 0 | 63 | 4 | 144 | 6 | 0 | 154 | 14 | 24 | 10 | 0 | 48 | 476 |
| Total Volume | 101 | 644 | 251 | 0 | 996 | 195 | 54 | 12 | 0 | 261 | 16 | 496 | 25 | 0 | 537 | 50 | 100 | 35 | 0 | 185 | 1979 |
| % Approach Total | 10.1 | 64.7 | 25.2 | 0.0 | | 74.7 | 20.7 | 4.6 | 0.0 | | 3.0 | 92.4 | 4.7 | 0.0 | | 27.0 | 54.1 | 18.9 | 0.0 | | |
| PHF | 0.842 | 0.890 | 0.965 | 0.000 | 0.902 | 0.903 | 0.844 | 0.500 | 0.000 | 0.946 | 0.571 | 0.861 | 0.781 | 0.000 | 0.866 | 0.735 | 0.714 | 0.875 | 0.000 | 0.784 | 0.966 |
| Cars | 97 | 633 | 247 | 0 | 977 | 157 | 53 | 12 | 0 | 222 | 16 | 491 | 24 | 0 | 531 | 49 | 96 | 33 | 0 | 178 | 1908 |
| Cars % | 96.0 | 98.3 | 98.4 | 0.0 | 98.1 | 80.5 | 98.1 | 100.0 | 0.0 | 85.1 | 100.0 | 99.0 | 96.0 | 0.0 | 98.9 | 98.0 | 96.0 | 94.3 | 0.0 | 96.2 | 96.4 |
| Heavy Vehicles | 2 | 1 | 2 | 0 | 5 | 28 | 1 | 0 | 0 | 29 | 0 | 3 | 0 | 0 | 3 | 1 | 2 | 1 | 0 | 4 | 41 |
| Heavy Vehicles % | 2.0 | 0.2 | 0.8 | 0.0 | 0.5 | 14.4 | 1.9 | 0.0 | 0.0 | 11.1 | 0.0 | 0.6 | 0.0 | 0.0 | 0.6 | 2.0 | 2.0 | 2.9 | 0.0 | 2.2 | 2.1 |
| Buses | 2 | 10 | 2 | 0 | 14 | 10 | 0 | 0 | 0 | 10 | 0 | 2 | 1 | 0 | 3 | 0 | 2 | 1 | 0 | 3 | 30 |
| Buses % | 2.0 | 1.6 | 0.8 | 0.0 | 1.4 | 5.1 | 0.0 | 0.0 | 0.0 | 3.8 | 0.0 | 0.4 | 4.0 | 0.0 | 0.6 | 0.0 | 2.0 | 2.9 | 0.0 | 1.6 | 1.5 |
| Cars Enter Leg | 97 | 633 | 247 | 0 | 977 | 157 | 53 | 12 | 0 | 222 | 16 | 491 | 24 | 0 | 531 | 49 | 96 | 33 | 0 | 178 | 1908 |
| Heavy Enter Leg | 2 | 1 | 2 | 0 | 5 | 28 | 1 | 0 | 0 | 29 | 0 | 3 | 0 | 0 | 3 | 1 | 2 | 1 | 0 | 4 | 41 |
| Bus Enter Leg | 2 | 10 | 2 | 0 | 14 | 10 | 0 | 0 | 0 | 10 | 0 | 2 | 1 | 0 | 3 | 0 | 2 | 1 | 0 | 3 | 30 |
| Total Entering Leg | 101 | 644 | 251 | 0 | 996 | 195 | 54 | 12 | 0 | 261 | 16 | 496 | 25 | 0 | 537 | 50 | 100 | 35 | 0 | 185 | 1979 |
| Cars Exiting Leg | | | | | 681 | | | | | 359 | | | | | 694 | | | | | 174 | 1908 |
| Heavy Exiting Leg | | | | | 32 | | | | | 4 | | | | | 2 | | | | | 3 | 41 |
| Buses Exiting Leg | | | | | 13 | | | | | 4 | | | | | 10 | | | | | 3 | 30 |
| Total Exiting Leg | | | | | 726 | | | | | 367 | | | | | 706 | | | | | 180 | 1979 |

PDI File #: **175708 CC**
Location: **N: Summer Street S: L Street**
Location: **E: East 1st Street W: East 1st Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Cars

| | Summer Street | | | | | East 1st Street | | | | | L Street | | | | | East 1st Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 18 | 166 | 48 | 0 | 232 | 35 | 9 | 6 | 0 | 50 | 4 | 104 | 4 | 0 | 112 | 15 | 17 | 4 | 0 | 36 | 430 |
| 4:15 PM | 29 | 179 | 63 | 0 | 271 | 30 | 15 | 2 | 0 | 47 | 7 | 95 | 7 | 0 | 109 | 10 | 24 | 10 | 0 | 44 | 471 |
| 4:30 PM | 25 | 155 | 55 | 0 | 235 | 35 | 16 | 2 | 0 | 53 | 5 | 141 | 8 | 0 | 154 | 17 | 33 | 5 | 0 | 55 | 497 |
| 4:45 PM | 25 | 173 | 65 | 0 | 263 | 46 | 13 | 2 | 0 | 61 | 0 | 112 | 3 | 0 | 115 | 9 | 16 | 8 | 0 | 33 | 472 |
| Total | 97 | 673 | 231 | 0 | 1001 | 146 | 53 | 12 | 0 | 211 | 16 | 452 | 22 | 0 | 490 | 51 | 90 | 27 | 0 | 168 | 1870 |
| 5:00 PM | 18 | 126 | 64 | 0 | 208 | 46 | 9 | 6 | 0 | 61 | 4 | 143 | 6 | 0 | 153 | 13 | 23 | 10 | 0 | 46 | 468 |
| 5:15 PM | 31 | 178 | 63 | 0 | 272 | 30 | 10 | 5 | 0 | 45 | 4 | 110 | 7 | 0 | 121 | 12 | 31 | 4 | 0 | 47 | 485 |
| 5:30 PM | 28 | 142 | 73 | 0 | 243 | 40 | 11 | 5 | 0 | 56 | 4 | 116 | 8 | 0 | 128 | 10 | 22 | 8 | 0 | 40 | 467 |
| 5:45 PM | 31 | 182 | 64 | 0 | 277 | 27 | 9 | 3 | 0 | 39 | 7 | 127 | 5 | 0 | 139 | 24 | 25 | 5 | 0 | 54 | 509 |
| Total | 108 | 628 | 264 | 0 | 1000 | 143 | 39 | 19 | 0 | 201 | 19 | 496 | 26 | 0 | 541 | 59 | 101 | 27 | 0 | 187 | 1929 |
| Grand Total | 205 | 1301 | 495 | 0 | 2001 | 289 | 92 | 31 | 0 | 412 | 35 | 948 | 48 | 0 | 1031 | 110 | 191 | 54 | 0 | 355 | 3799 |
| Approach % | 10.2 | 65.0 | 24.7 | 0.0 | | 70.1 | 22.3 | 7.5 | 0.0 | | 3.4 | 91.9 | 4.7 | 0.0 | | 31.0 | 53.8 | 15.2 | 0.0 | | |
| Total % | 5.4 | 34.2 | 13.0 | 0.0 | 52.7 | 7.6 | 2.4 | 0.8 | 0.0 | 10.8 | 0.9 | 25.0 | 1.3 | 0.0 | 27.1 | 2.9 | 5.0 | 1.4 | 0.0 | 9.3 | |
| Exiting Leg Total | | | | | 1291 | | | | | 721 | | | | | 1442 | | | | | 345 | 3799 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 5:00 PM | Summer Street | | | | | East 1st Street | | | | | L Street | | | | | East 1st Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 5:00 PM | 18 | 126 | 64 | 0 | 208 | 46 | 9 | 6 | 0 | 61 | 4 | 143 | 6 | 0 | 153 | 13 | 23 | 10 | 0 | 46 | 468 |
| 5:15 PM | 31 | 178 | 63 | 0 | 272 | 30 | 10 | 5 | 0 | 45 | 4 | 110 | 7 | 0 | 121 | 12 | 31 | 4 | 0 | 47 | 485 |
| 5:30 PM | 28 | 142 | 73 | 0 | 243 | 40 | 11 | 5 | 0 | 56 | 4 | 116 | 8 | 0 | 128 | 10 | 22 | 8 | 0 | 40 | 467 |
| 5:45 PM | 31 | 182 | 64 | 0 | 277 | 27 | 9 | 3 | 0 | 39 | 7 | 127 | 5 | 0 | 139 | 24 | 25 | 5 | 0 | 54 | 509 |
| Total Volume | 108 | 628 | 264 | 0 | 1000 | 143 | 39 | 19 | 0 | 201 | 19 | 496 | 26 | 0 | 541 | 59 | 101 | 27 | 0 | 187 | 1929 |
| % Approach Total | 10.8 | 62.8 | 26.4 | 0.0 | | 71.1 | 19.4 | 9.5 | 0.0 | | 3.5 | 91.7 | 4.8 | 0.0 | | 31.6 | 54.0 | 14.4 | 0.0 | | |
| PHF | 0.871 | 0.863 | 0.904 | 0.000 | 0.903 | 0.777 | 0.886 | 0.792 | 0.000 | 0.824 | 0.679 | 0.867 | 0.813 | 0.000 | 0.884 | 0.615 | 0.815 | 0.675 | 0.000 | 0.866 | 0.947 |
| Entering Leg | 108 | 628 | 264 | 0 | 1000 | 143 | 39 | 19 | 0 | 201 | 19 | 496 | 26 | 0 | 541 | 59 | 101 | 27 | 0 | 187 | 1929 |
| Exiting Leg | | | | | 666 | | | | | 384 | | | | | 706 | | | | | 173 | 1929 |
| Total | | | | | 1666 | | | | | 585 | | | | | 1247 | | | | | 360 | 3858 |

PDI File #: **175708 CC**
Location: **N: Summer Street S: L Street**
Location: **E: East 1st Street W: East 1st Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Class: **Heavy Vehicles**

| | Summer Street (North) | | | | | East 1st Street (East) | | | | | L Street (South) | | | | | East 1st Street (West) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 2 | 1 | 8 | 0 | 11 | 11 | 0 | 0 | 0 | 11 | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 1 | 0 | 3 | 26 |
| 4:15 PM | 1 | 0 | 0 | 0 | 1 | 19 | 1 | 0 | 0 | 20 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 23 |
| 4:30 PM | 0 | 0 | 1 | 0 | 1 | 7 | 0 | 0 | 0 | 7 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 2 | 11 |
| 4:45 PM | 1 | 1 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| Total | 4 | 2 | 9 | 0 | 15 | 39 | 1 | 0 | 0 | 40 | 0 | 3 | 1 | 0 | 4 | 0 | 3 | 2 | 0 | 5 | 64 |
| 5:00 PM | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 2 | 3 |
| 5:15 PM | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 3 |
| 5:30 PM | 0 | 1 | 1 | 0 | 2 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 5:45 PM | 2 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 4 |
| Total | 2 | 2 | 3 | 0 | 7 | 2 | 1 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 3 | 14 |
| Grand Total | 6 | 4 | 12 | 0 | 22 | 41 | 2 | 0 | 0 | 43 | 1 | 3 | 1 | 0 | 5 | 1 | 4 | 3 | 0 | 8 | 78 |
| Approach % | 27.3 | 18.2 | 54.5 | 0.0 | | 95.3 | 4.7 | 0.0 | 0.0 | | 20.0 | 60.0 | 20.0 | 0.0 | | 12.5 | 50.0 | 37.5 | 0.0 | | |
| Total % | 7.7 | 5.1 | 15.4 | 0.0 | 28.2 | 52.6 | 2.6 | 0.0 | 0.0 | 55.1 | 1.3 | 3.8 | 1.3 | 0.0 | 6.4 | 1.3 | 5.1 | 3.8 | 0.0 | 10.3 | |
| Exiting Leg Total | | | | | 47 | | | | | 17 | | | | | 5 | | | | | 9 | 78 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:00 PM | Summer Street (North) | | | | | East 1st Street (East) | | | | | L Street (South) | | | | | East 1st Street (West) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 2 | 1 | 8 | 0 | 11 | 11 | 0 | 0 | 0 | 11 | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 1 | 0 | 3 | 26 |
| 4:15 PM | 1 | 0 | 0 | 0 | 1 | 19 | 1 | 0 | 0 | 20 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 23 |
| 4:30 PM | 0 | 0 | 1 | 0 | 1 | 7 | 0 | 0 | 0 | 7 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 2 | 11 |
| 4:45 PM | 1 | 1 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| Total Volume | 4 | 2 | 9 | 0 | 15 | 39 | 1 | 0 | 0 | 40 | 0 | 3 | 1 | 0 | 4 | 0 | 3 | 2 | 0 | 5 | 64 |
| % Approach Total | 26.7 | 13.3 | 60.0 | 0.0 | | 97.5 | 2.5 | 0.0 | 0.0 | | 0.0 | 75.0 | 25.0 | 0.0 | | 0.0 | 60.0 | 40.0 | 0.0 | | |
| PHF | 0.500 | 0.500 | 0.281 | 0.000 | 0.341 | 0.513 | 0.250 | 0.000 | 0.000 | 0.500 | 0.000 | 0.375 | 0.250 | 0.000 | 0.500 | 0.000 | 0.375 | 0.500 | 0.000 | 0.417 | 0.615 |
| Entering Leg | 4 | 2 | 9 | 0 | 15 | 39 | 1 | 0 | 0 | 40 | 0 | 3 | 1 | 0 | 4 | 0 | 3 | 2 | 0 | 5 | 64 |
| Exiting Leg | | | | | 44 | | | | | 12 | | | | | 2 | | | | | 6 | 64 |
| Total | | | | | 59 | | | | | 52 | | | | | 6 | | | | | 11 | 128 |

PDI File #: **175708 CC**
Location: **N: Summer Street S: L Street**
Location: **E: East 1st Street W: East 1st Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Buses

| | Summer Street | | | | | East 1st Street | | | | | L Street | | | | | East 1st Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 1 | 5 |
| 4:15 PM | 0 | 2 | 2 | 0 | 4 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 7 |
| 4:30 PM | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 4 |
| 4:45 PM | 0 | 6 | 0 | 0 | 6 | 6 | 0 | 0 | 0 | 6 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 14 |
| Total | 1 | 9 | 3 | 0 | 13 | 8 | 0 | 0 | 0 | 8 | 0 | 4 | 1 | 0 | 5 | 0 | 2 | 2 | 0 | 4 | 30 |
| 5:00 PM | 1 | 1 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 5 |
| 5:15 PM | 1 | 2 | 1 | 0 | 4 | 2 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 8 |
| 5:30 PM | 0 | 2 | 1 | 0 | 3 | 2 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 5:45 PM | 0 | 3 | 0 | 0 | 3 | 3 | 1 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 9 |
| Total | 2 | 8 | 2 | 0 | 12 | 9 | 2 | 0 | 0 | 11 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 3 | 0 | 3 | 28 |
| Grand Total | 3 | 17 | 5 | 0 | 25 | 17 | 2 | 0 | 0 | 19 | 0 | 6 | 1 | 0 | 7 | 0 | 2 | 5 | 0 | 7 | 58 |
| Approach % | 12.0 | 68.0 | 20.0 | 0.0 | | 89.5 | 10.5 | 0.0 | 0.0 | | 0.0 | 85.7 | 14.3 | 0.0 | | 0.0 | 28.6 | 71.4 | 0.0 | | |
| Total % | 5.2 | 29.3 | 8.6 | 0.0 | 43.1 | 29.3 | 3.4 | 0.0 | 0.0 | 32.8 | 0.0 | 10.3 | 1.7 | 0.0 | 12.1 | 0.0 | 3.4 | 8.6 | 0.0 | 12.1 | |
| Exiting Leg Total | | | | | 28 | | | | | 7 | | | | | 17 | | | | | 6 | 58 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:45 PM | Summer Street | | | | | East 1st Street | | | | | L Street | | | | | East 1st Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:45 PM | 0 | 6 | 0 | 0 | 6 | 6 | 0 | 0 | 0 | 6 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 14 |
| 5:00 PM | 1 | 1 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 5 |
| 5:15 PM | 1 | 2 | 1 | 0 | 4 | 2 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 8 |
| 5:30 PM | 0 | 2 | 1 | 0 | 3 | 2 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| Total Volume | 2 | 11 | 2 | 0 | 15 | 12 | 1 | 0 | 0 | 13 | 0 | 3 | 1 | 0 | 4 | 0 | 0 | 1 | 0 | 1 | 33 |
| % Approach Total | 13.3 | 73.3 | 13.3 | 0.0 | | 92.3 | 7.7 | 0.0 | 0.0 | | 0.0 | 75.0 | 25.0 | 0.0 | | 0.0 | 0.0 | 100.0 | 0.0 | | |
| PHF | 0.500 | 0.458 | 0.500 | 0.000 | 0.625 | 0.500 | 0.250 | 0.000 | 0.000 | 0.542 | 0.000 | 0.750 | 0.250 | 0.000 | 0.500 | 0.000 | 0.000 | 0.250 | 0.000 | 0.250 | 0.589 |
| Entering Leg | 2 | 11 | 2 | 0 | 15 | 12 | 1 | 0 | 0 | 13 | 0 | 3 | 1 | 0 | 4 | 0 | 0 | 1 | 0 | 1 | 33 |
| Exiting Leg | | | | | 16 | | | | | 2 | | | | | 11 | | | | | 4 | 33 |
| Total | | | | | 31 | | | | | 15 | | | | | 15 | | | | | 5 | 66 |

PDI File #: **175708 CC**
Location: **N: Summer Street S: L Street**
Location: **E: East 1st Street W: East 1st Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Class:

## Bicycles (on Roadway and Crosswalks)

| | Summer Street | | | | | | | East 1st Street | | | | | | | L Street | | | | | | | East 1st Street | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | East | | | | | | | South | | | | | | | West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 4:15 PM | 0 | 4 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 4:30 PM | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 4:45 PM | 0 | 6 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| Total | 0 | 12 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 2 | 2 |
| 5:15 PM | 0 | 2 | 2 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 2 | 6 |
| 5:30 PM | 1 | 3 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 0 | 3 | 0 | 0 | 0 | 4 | 7 | 15 |
| 5:45 PM | 1 | 7 | 0 | 0 | 0 | 0 | 8 | 3 | 1 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 1 | 4 | 16 |
| Total | 2 | 12 | 2 | 0 | 0 | 0 | 16 | 3 | 1 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 0 | 8 | 0 | 0 | 0 | 7 | 15 | 39 |
| Grand Total | 2 | 24 | 2 | 0 | 0 | 0 | 28 | 3 | 1 | 0 | 0 | 0 | 0 | 4 | 0 | 1 | 0 | 0 | 0 | 5 | 6 | 0 | 8 | 0 | 0 | 0 | 7 | 15 | 53 |
| Approach % | 7.1 | 85.7 | 7.1 | 0.0 | 0.0 | 0.0 | | 75.0 | 25.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 16.7 | 0.0 | 0.0 | 0.0 | 83.3 | | 0.0 | 53.3 | 0.0 | 0.0 | 0.0 | 46.7 | | |
| Total % | 3.8 | 45.3 | 3.8 | 0.0 | 0.0 | 0.0 | 52.8 | 5.7 | 1.9 | 0.0 | 0.0 | 0.0 | 0.0 | 7.5 | 0.0 | 1.9 | 0.0 | 0.0 | 0.0 | 9.4 | 11.3 | 0.0 | 15.1 | 0.0 | 0.0 | 0.0 | 13.2 | 28.3 | |
| Exiting Leg Total | | | | | | | 4 | | | | | | | 10 | | | | | | | 29 | | | | | | | 10 | 53 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 5:00 PM | Summer Street | | | | | | | East 1st Street | | | | | | | L Street | | | | | | | East 1st Street | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | East | | | | | | | South | | | | | | | West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 2 | 2 |
| 5:15 PM | 0 | 2 | 2 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 2 | 6 |
| 5:30 PM | 1 | 3 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 0 | 3 | 0 | 0 | 0 | 4 | 7 | 15 |
| 5:45 PM | 1 | 7 | 0 | 0 | 0 | 0 | 8 | 3 | 1 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 1 | 4 | 16 |
| Total Volume | 2 | 12 | 2 | 0 | 0 | 0 | 16 | 3 | 1 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 0 | 8 | 0 | 0 | 0 | 7 | 15 | 39 |
| % Approach Total | 12.5 | 75.0 | 12.5 | 0.0 | 0.0 | 0.0 | | 75.0 | 25.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | | 0.0 | 53.3 | 0.0 | 0.0 | 0.0 | 46.7 | | |
| PHF | 0.500 | 0.429 | 0.250 | 0.000 | 0.000 | 0.000 | 0.500 | 0.250 | 0.250 | 0.000 | 0.000 | 0.000 | 0.000 | 0.250 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.250 | 0.250 | 0.000 | 0.667 | 0.000 | 0.000 | 0.000 | 0.438 | 0.536 | 0.609 |
| Entering Leg | 2 | 12 | 2 | 0 | 0 | 0 | 16 | 3 | 1 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 0 | 8 | 0 | 0 | 0 | 7 | 15 | 39 |
| Exiting Leg | | | | | | | 3 | | | | | | | 10 | | | | | | | 16 | | | | | | | 10 | 39 |
| Total | | | | | | | 19 | | | | | | | 14 | | | | | | | 20 | | | | | | | 25 | 78 |

PDI File #: **175708 CC**
Location: **N: Summer Street S: L Street**
Location: **E: East 1st Street W: East 1st Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Pedestrians

| | Summer Street | | | | | | | East 1st Street | | | | | | | L Street | | | | | | | East 1st Street | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | East | | | | | | | South | | | | | | | West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 4 | 0 | 4 | 0 | 0 | 0 | 0 | 1 | 3 | 4 | 0 | 0 | 0 | 0 | 5 | 2 | 7 | 0 | 0 | 0 | 0 | 1 | 4 | 5 | 20 |
| 4:15 PM | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 2 | 3 | 5 | 0 | 0 | 0 | 0 | 4 | 7 | 11 | 21 |
| 4:30 PM | 0 | 0 | 0 | 0 | 4 | 0 | 4 | 0 | 0 | 0 | 0 | 3 | 4 | 7 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 2 | 10 | 12 | 26 |
| 4:45 PM | 0 | 0 | 0 | 0 | 10 | 0 | 10 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 3 | 5 | 8 | 0 | 0 | 0 | 0 | 8 | 15 | 23 | 44 |
| Total | 0 | 0 | 0 | 0 | 20 | 0 | 20 | 0 | 0 | 0 | 0 | 6 | 11 | 17 | 0 | 0 | 0 | 0 | 11 | 12 | 23 | 0 | 0 | 0 | 0 | 15 | 36 | 51 | 111 |
| 5:00 PM | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 4 | 7 | 0 | 0 | 0 | 0 | 1 | 7 | 8 | 0 | 0 | 0 | 0 | 4 | 13 | 17 | 35 |
| 5:15 PM | 0 | 0 | 0 | 0 | 6 | 0 | 6 | 0 | 0 | 0 | 0 | 6 | 8 | 14 | 0 | 0 | 0 | 0 | 3 | 5 | 8 | 0 | 0 | 0 | 0 | 10 | 32 | 42 | 70 |
| 5:30 PM | 0 | 0 | 0 | 0 | 10 | 0 | 10 | 0 | 0 | 0 | 0 | 12 | 6 | 18 | 0 | 0 | 0 | 0 | 5 | 4 | 9 | 0 | 0 | 0 | 0 | 5 | 34 | 39 | 76 |
| 5:45 PM | 0 | 0 | 0 | 0 | 9 | 1 | 10 | 0 | 0 | 0 | 0 | 3 | 9 | 12 | 0 | 0 | 0 | 0 | 2 | 9 | 11 | 0 | 0 | 0 | 0 | 5 | 31 | 36 | 69 |
| Total | 0 | 0 | 0 | 0 | 28 | 1 | 29 | 0 | 0 | 0 | 0 | 24 | 27 | 51 | 0 | 0 | 0 | 0 | 11 | 25 | 36 | 0 | 0 | 0 | 0 | 24 | 110 | 134 | 250 |
| Grand Total | 0 | 0 | 0 | 0 | 48 | 1 | 49 | 0 | 0 | 0 | 0 | 30 | 38 | 68 | 0 | 0 | 0 | 0 | 22 | 37 | 59 | 0 | 0 | 0 | 0 | 39 | 146 | 185 | 361 |
| Approach % | 0.0 | 0.0 | 0.0 | 0.0 | 98.0 | 2.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 44.1 | 55.9 | | 0.0 | 0.0 | 0.0 | 0.0 | 37.3 | 62.7 | | 0.0 | 0.0 | 0.0 | 0.0 | 21.1 | 78.9 | | |
| Total % | 0.0 | 0.0 | 0.0 | 0.0 | 13.3 | 0.3 | 13.6 | 0.0 | 0.0 | 0.0 | 0.0 | 8.3 | 10.5 | 18.8 | 0.0 | 0.0 | 0.0 | 0.0 | 6.1 | 10.2 | 16.3 | 0.0 | 0.0 | 0.0 | 0.0 | 10.8 | 40.4 | 51.2 | |
| Exiting Leg Total | | | | | | | 49 | | | | | | | 68 | | | | | | | 59 | | | | | | | 185 | 361 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 5:00 PM | Summer Street | | | | | | | East 1st Street | | | | | | | L Street | | | | | | | East 1st Street | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | East | | | | | | | South | | | | | | | West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 5:00 PM | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 4 | 7 | 0 | 0 | 0 | 0 | 1 | 7 | 8 | 0 | 0 | 0 | 0 | 4 | 13 | 17 | 35 |
| 5:15 PM | 0 | 0 | 0 | 0 | 6 | 0 | 6 | 0 | 0 | 0 | 0 | 6 | 8 | 14 | 0 | 0 | 0 | 0 | 3 | 5 | 8 | 0 | 0 | 0 | 0 | 10 | 32 | 42 | 70 |
| 5:30 PM | 0 | 0 | 0 | 0 | 10 | 0 | 10 | 0 | 0 | 0 | 0 | 12 | 6 | 18 | 0 | 0 | 0 | 0 | 5 | 4 | 9 | 0 | 0 | 0 | 0 | 5 | 34 | 39 | 76 |
| 5:45 PM | 0 | 0 | 0 | 0 | 9 | 1 | 10 | 0 | 0 | 0 | 0 | 3 | 9 | 12 | 0 | 0 | 0 | 0 | 2 | 9 | 11 | 0 | 0 | 0 | 0 | 5 | 31 | 36 | 69 |
| Total Volume | 0 | 0 | 0 | 0 | 28 | 1 | 29 | 0 | 0 | 0 | 0 | 24 | 27 | 51 | 0 | 0 | 0 | 0 | 11 | 25 | 36 | 0 | 0 | 0 | 0 | 24 | 110 | 134 | 250 |
| % Approach Total | 0.0 | 0.0 | 0.0 | 0.0 | 96.6 | 3.4 | | 0.0 | 0.0 | 0.0 | 0.0 | 47.1 | 52.9 | | 0.0 | 0.0 | 0.0 | 0.0 | 30.6 | 69.4 | | 0.0 | 0.0 | 0.0 | 0.0 | 17.9 | 82.1 | | |
| PHF | 0.000 | 0.000 | 0.000 | 0.000 | 0.700 | 0.250 | 0.725 | 0.000 | 0.000 | 0.000 | 0.000 | 0.500 | 0.750 | 0.708 | 0.000 | 0.000 | 0.000 | 0.000 | 0.550 | 0.694 | 0.818 | 0.000 | 0.000 | 0.000 | 0.000 | 0.600 | 0.809 | 0.798 | 0.822 |
| Entering Leg | 0 | 0 | 0 | 0 | 28 | 1 | 29 | 0 | 0 | 0 | 0 | 24 | 27 | 51 | 0 | 0 | 0 | 0 | 11 | 25 | 36 | 0 | 0 | 0 | 0 | 24 | 110 | 134 | 250 |
| Exiting Leg | | | | | | | 29 | | | | | | | 51 | | | | | | | 36 | | | | | | | 134 | 250 |
| Total | | | | | | | 58 | | | | | | | 102 | | | | | | | 72 | | | | | | | 268 | 500 |

PDI File #: **175708 D**
Location: **N: L Street S: L Street**
Location: **E: East 2nd Street W: East 2nd Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Cars, Heavy Vehicles, and Buses (Combined)

| | L Street | | | | | East 2nd Street | | | | | L Street | | | | | East 2nd Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 4 | 99 | 1 | 0 | 104 | 7 | 2 | 5 | 0 | 14 | 0 | 208 | 1 | 1 | 210 | 4 | 0 | 5 | 0 | 9 | 337 |
| 7:15 AM | 9 | 70 | 1 | 0 | 80 | 15 | 0 | 1 | 0 | 16 | 0 | 194 | 2 | 0 | 196 | 1 | 2 | 7 | 0 | 10 | 302 |
| 7:30 AM | 3 | 75 | 1 | 0 | 79 | 9 | 1 | 3 | 0 | 13 | 1 | 192 | 5 | 0 | 198 | 2 | 1 | 5 | 0 | 8 | 298 |
| 7:45 AM | 5 | 79 | 1 | 0 | 85 | 4 | 0 | 0 | 0 | 4 | 1 | 175 | 5 | 0 | 181 | 3 | 0 | 2 | 0 | 5 | 275 |
| Total | 21 | 323 | 4 | 0 | 348 | 35 | 3 | 9 | 0 | 47 | 2 | 769 | 13 | 1 | 785 | 10 | 3 | 19 | 0 | 32 | 1212 |
| 8:00 AM | 8 | 97 | 2 | 0 | 107 | 11 | 2 | 4 | 0 | 17 | 2 | 168 | 18 | 1 | 189 | 7 | 2 | 6 | 0 | 15 | 328 |
| 8:15 AM | 5 | 93 | 1 | 0 | 99 | 15 | 3 | 1 | 0 | 19 | 0 | 163 | 11 | 0 | 174 | 1 | 1 | 1 | 0 | 3 | 295 |
| 8:30 AM | 3 | 92 | 2 | 0 | 97 | 14 | 5 | 3 | 0 | 22 | 1 | 192 | 2 | 0 | 195 | 4 | 0 | 3 | 0 | 7 | 321 |
| 8:45 AM | 3 | 99 | 5 | 0 | 107 | 17 | 4 | 2 | 0 | 23 | 1 | 164 | 8 | 0 | 173 | 6 | 0 | 3 | 0 | 9 | 312 |
| Total | 19 | 381 | 10 | 0 | 410 | 57 | 14 | 10 | 0 | 81 | 4 | 687 | 39 | 1 | 731 | 18 | 3 | 13 | 0 | 34 | 1256 |
| Grand Total | 40 | 704 | 14 | 0 | 758 | 92 | 17 | 19 | 0 | 128 | 6 | 1456 | 52 | 2 | 1516 | 28 | 6 | 32 | 0 | 66 | 2468 |
| Approach % | 5.3 | 92.9 | 1.8 | 0.0 | | 71.9 | 13.3 | 14.8 | 0.0 | | 0.4 | 96.0 | 3.4 | 0.1 | | 42.4 | 9.1 | 48.5 | 0.0 | | |
| Total % | 1.6 | 28.5 | 0.6 | 0.0 | 30.7 | 3.7 | 0.7 | 0.8 | 0.0 | 5.2 | 0.2 | 59.0 | 2.1 | 0.1 | 61.4 | 1.1 | 0.2 | 1.3 | 0.0 | 2.7 | |
| Exiting Leg Total | | | | | 1580 | | | | | 26 | | | | | 753 | | | | | 109 | 2468 |
| Cars | 37 | 676 | 14 | 0 | 727 | 92 | 16 | 18 | 0 | 126 | 5 | 1394 | 50 | 2 | 1451 | 27 | 5 | 31 | 0 | 63 | 2367 |
| % Cars | 92.5 | 96.0 | 100.0 | 0.0 | 95.9 | 100.0 | 94.1 | 94.7 | 0.0 | 98.4 | 83.3 | 95.7 | 96.2 | 100.0 | 95.7 | 96.4 | 83.3 | 96.9 | 0.0 | 95.5 | 95.9 |
| Exiting Leg Total | | | | | 1517 | | | | | 24 | | | | | 723 | | | | | 103 | 2367 |
| Heavy Vehicles | 3 | 17 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 1 | 11 | 2 | 0 | 14 | 1 | 1 | 1 | 0 | 3 | 37 |
| % Heavy Vehicles | 7.5 | 2.4 | 0.0 | 0.0 | 2.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 16.7 | 0.8 | 3.8 | 0.0 | 0.9 | 3.6 | 16.7 | 3.1 | 0.0 | 4.5 | 1.5 |
| Exiting Leg Total | | | | | 12 | | | | | 2 | | | | | 18 | | | | | 5 | 37 |
| Buses | 0 | 11 | 0 | 0 | 11 | 0 | 1 | 1 | 0 | 2 | 0 | 51 | 0 | 0 | 51 | 0 | 0 | 0 | 0 | 0 | 64 |
| % Buses | 0.0 | 1.6 | 0.0 | 0.0 | 1.5 | 0.0 | 5.9 | 5.3 | 0.0 | 1.6 | 0.0 | 3.5 | 0.0 | 0.0 | 3.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.6 |
| Exiting Leg Total | | | | | 51 | | | | | 0 | | | | | 12 | | | | | 1 | 64 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 8:00 AM | L Street | | | | | East 2nd Street | | | | | L Street | | | | | East 2nd Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 8:00 AM | 8 | 97 | 2 | 0 | 107 | 11 | 2 | 4 | 0 | 17 | 2 | 168 | 18 | 1 | 189 | 7 | 2 | 6 | 0 | 15 | 328 |
| 8:15 AM | 5 | 93 | 1 | 0 | 99 | 15 | 3 | 1 | 0 | 19 | 0 | 163 | 11 | 0 | 174 | 1 | 1 | 1 | 0 | 3 | 295 |
| 8:30 AM | 3 | 92 | 2 | 0 | 97 | 14 | 5 | 3 | 0 | 22 | 1 | 192 | 2 | 0 | 195 | 4 | 0 | 3 | 0 | 7 | 321 |
| 8:45 AM | 3 | 99 | 5 | 0 | 107 | 17 | 4 | 2 | 0 | 23 | 1 | 164 | 8 | 0 | 173 | 6 | 0 | 3 | 0 | 9 | 312 |
| Total Volume | 19 | 381 | 10 | 0 | 410 | 57 | 14 | 10 | 0 | 81 | 4 | 687 | 39 | 1 | 731 | 18 | 3 | 13 | 0 | 34 | 1256 |
| % Approach Total | 4.6 | 92.9 | 2.4 | 0.0 | | 70.4 | 17.3 | 12.3 | 0.0 | | 0.5 | 94.0 | 5.3 | 0.1 | | 52.9 | 8.8 | 38.2 | 0.0 | | |
| PHF | 0.594 | 0.962 | 0.500 | 0.000 | 0.958 | 0.838 | 0.700 | 0.625 | 0.000 | 0.880 | 0.500 | 0.895 | 0.542 | 0.250 | 0.937 | 0.643 | 0.375 | 0.542 | 0.000 | 0.567 | 0.957 |
| Cars | 18 | 365 | 10 | 0 | 393 | 57 | 13 | 9 | 0 | 79 | 3 | 659 | 38 | 1 | 701 | 18 | 3 | 13 | 0 | 34 | 1207 |
| Cars % | 94.7 | 95.8 | 100.0 | 0.0 | 95.9 | 100.0 | 92.9 | 90.0 | 0.0 | 97.5 | 75.0 | 95.9 | 97.4 | 100.0 | 95.9 | 100.0 | 100.0 | 100.0 | 0.0 | 100.0 | 96.1 |
| Heavy Vehicles | 1 | 7 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 1 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 14 |
| Heavy Vehicles % | 5.3 | 1.8 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 25.0 | 0.6 | 2.6 | 0.0 | 0.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.1 |
| Buses | 0 | 9 | 0 | 0 | 9 | 0 | 1 | 1 | 0 | 2 | 0 | 24 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 35 |
| Buses % | 0.0 | 2.4 | 0.0 | 0.0 | 2.2 | 0.0 | 7.1 | 10.0 | 0.0 | 2.5 | 0.0 | 3.5 | 0.0 | 0.0 | 3.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.8 |
| Cars Enter Leg | 18 | 365 | 10 | 0 | 393 | 57 | 13 | 9 | 0 | 79 | 3 | 659 | 38 | 1 | 701 | 18 | 3 | 13 | 0 | 34 | 1207 |
| Heavy Enter Leg | 1 | 7 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 1 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 14 |
| Bus Enter Leg | 0 | 9 | 0 | 0 | 9 | 0 | 1 | 1 | 0 | 2 | 0 | 24 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 35 |
| Total Entering Leg | 19 | 381 | 10 | 0 | 410 | 57 | 14 | 10 | 0 | 81 | 4 | 687 | 39 | 1 | 731 | 18 | 3 | 13 | 0 | 34 | 1256 |
| Cars Exiting Leg | | | | | 729 | | | | | 16 | | | | | 393 | | | | | 69 | 1207 |
| Heavy Exiting Leg | | | | | 4 | | | | | 1 | | | | | 7 | | | | | 2 | 14 |
| Buses Exiting Leg | | | | | 24 | | | | | 0 | | | | | 10 | | | | | 1 | 35 |
| Total Exiting Leg | | | | | 757 | | | | | 17 | | | | | 410 | | | | | 72 | 1256 |

PDI File #: **175708 D**
Location: **N: L Street S: L Street**
Location: **E: East 2nd Street W: East 2nd Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Cars

| | L Street | | | | | East 2nd Street | | | | | L Street | | | | | East 2nd Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 4 | 97 | 1 | 0 | 102 | 7 | 2 | 5 | 0 | 14 | 0 | 201 | 1 | 1 | 203 | 3 | 0 | 5 | 0 | 8 | 327 |
| 7:15 AM | 9 | 64 | 1 | 0 | 74 | 15 | 0 | 1 | 0 | 16 | 0 | 186 | 1 | 0 | 187 | 1 | 2 | 6 | 0 | 9 | 286 |
| 7:30 AM | 3 | 74 | 1 | 0 | 78 | 9 | 1 | 3 | 0 | 13 | 1 | 182 | 5 | 0 | 188 | 2 | 0 | 5 | 0 | 7 | 286 |
| 7:45 AM | 3 | 76 | 1 | 0 | 80 | 4 | 0 | 0 | 0 | 4 | 1 | 166 | 5 | 0 | 172 | 3 | 0 | 2 | 0 | 5 | 261 |
| Total | 19 | 311 | 4 | 0 | 334 | 35 | 3 | 9 | 0 | 47 | 2 | 735 | 12 | 1 | 750 | 9 | 2 | 18 | 0 | 29 | 1160 |
| 8:00 AM | 8 | 95 | 2 | 0 | 105 | 11 | 2 | 4 | 0 | 17 | 1 | 162 | 17 | 1 | 181 | 7 | 2 | 6 | 0 | 15 | 318 |
| 8:15 AM | 5 | 89 | 1 | 0 | 95 | 15 | 3 | 1 | 0 | 19 | 0 | 157 | 11 | 0 | 168 | 1 | 1 | 1 | 0 | 3 | 285 |
| 8:30 AM | 3 | 88 | 2 | 0 | 93 | 14 | 4 | 3 | 0 | 21 | 1 | 182 | 2 | 0 | 185 | 4 | 0 | 3 | 0 | 7 | 306 |
| 8:45 AM | 2 | 93 | 5 | 0 | 100 | 17 | 4 | 1 | 0 | 22 | 1 | 158 | 8 | 0 | 167 | 6 | 0 | 3 | 0 | 9 | 298 |
| Total | 18 | 365 | 10 | 0 | 393 | 57 | 13 | 9 | 0 | 79 | 3 | 659 | 38 | 1 | 701 | 18 | 3 | 13 | 0 | 34 | 1207 |
| Grand Total | 37 | 676 | 14 | 0 | 727 | 92 | 16 | 18 | 0 | 126 | 5 | 1394 | 50 | 2 | 1451 | 27 | 5 | 31 | 0 | 63 | 2367 |
| Approach % | 5.1 | 93.0 | 1.9 | 0.0 | | 73.0 | 12.7 | 14.3 | 0.0 | | 0.3 | 96.1 | 3.4 | 0.1 | | 42.9 | 7.9 | 49.2 | 0.0 | | |
| Total % | 1.6 | 28.6 | 0.6 | 0.0 | 30.7 | 3.9 | 0.7 | 0.8 | 0.0 | 5.3 | 0.2 | 58.9 | 2.1 | 0.1 | 61.3 | 1.1 | 0.2 | 1.3 | 0.0 | 2.7 | |
| Exiting Leg Total | | | | | 1517 | | | | | 24 | | | | | 723 | | | | | 103 | 2367 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 8:00 AM | L Street | | | | | East 2nd Street | | | | | L Street | | | | | East 2nd Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 8:00 AM | 8 | 95 | 2 | 0 | 105 | 11 | 2 | 4 | 0 | 17 | 1 | 162 | 17 | 1 | 181 | 7 | 2 | 6 | 0 | 15 | 318 |
| 8:15 AM | 5 | 89 | 1 | 0 | 95 | 15 | 3 | 1 | 0 | 19 | 0 | 157 | 11 | 0 | 168 | 1 | 1 | 1 | 0 | 3 | 285 |
| 8:30 AM | 3 | 88 | 2 | 0 | 93 | 14 | 4 | 3 | 0 | 21 | 1 | 182 | 2 | 0 | 185 | 4 | 0 | 3 | 0 | 7 | 306 |
| 8:45 AM | 2 | 93 | 5 | 0 | 100 | 17 | 4 | 1 | 0 | 22 | 1 | 158 | 8 | 0 | 167 | 6 | 0 | 3 | 0 | 9 | 298 |
| Total Volume | 18 | 365 | 10 | 0 | 393 | 57 | 13 | 9 | 0 | 79 | 3 | 659 | 38 | 1 | 701 | 18 | 3 | 13 | 0 | 34 | 1207 |
| % Approach Total | 4.6 | 92.9 | 2.5 | 0.0 | | 72.2 | 16.5 | 11.4 | 0.0 | | 0.4 | 94.0 | 5.4 | 0.1 | | 52.9 | 8.8 | 38.2 | 0.0 | | |
| PHF | 0.563 | 0.961 | 0.500 | 0.000 | 0.936 | 0.838 | 0.813 | 0.563 | 0.000 | 0.898 | 0.750 | 0.905 | 0.559 | 0.250 | 0.947 | 0.643 | 0.375 | 0.542 | 0.000 | 0.567 | 0.949 |
| Entering Leg | 18 | 365 | 10 | 0 | 393 | 57 | 13 | 9 | 0 | 79 | 3 | 659 | 38 | 1 | 701 | 18 | 3 | 13 | 0 | 34 | 1207 |
| Exiting Leg | | | | | 729 | | | | | 16 | | | | | 393 | | | | | 69 | 1207 |
| Total | | | | | 1122 | | | | | 95 | | | | | 1094 | | | | | 103 | 2414 |

PDI File #: **175708 D**
Location: **N: L Street S: L Street**
Location: **E: East 2nd Street W: East 2nd Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Heavy Vehicles

| | L Street | | | | | East 2nd Street | | | | | L Street | | | | | East 2nd Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 1 | 5 |
| 7:15 AM | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 7 |
| 7:30 AM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 1 | 0 | 0 | 1 | 6 |
| 7:45 AM | 2 | 2 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 5 |
| Total | 2 | 10 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 1 | 0 | 8 | 1 | 1 | 1 | 0 | 3 | 23 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 3 |
| 8:15 AM | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 5 |
| 8:30 AM | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 |
| 8:45 AM | 1 | 2 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Total | 1 | 7 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 1 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 14 |
| Grand Total | 3 | 17 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 1 | 11 | 2 | 0 | 14 | 1 | 1 | 1 | 0 | 3 | 37 |
| Approach % | 15.0 | 85.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | 7.1 | 78.6 | 14.3 | 0.0 | | 33.3 | 33.3 | 33.3 | 0.0 | | |
| Total % | 8.1 | 45.9 | 0.0 | 0.0 | 54.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.7 | 29.7 | 5.4 | 0.0 | 37.8 | 2.7 | 2.7 | 2.7 | 0.0 | 8.1 | |
| Exiting Leg Total | | | | | 12 | | | | | 2 | | | | | 18 | | | | | 5 | 37 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:00 AM | L Street | | | | | East 2nd Street | | | | | L Street | | | | | East 2nd Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 1 | 5 |
| 7:15 AM | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 7 |
| 7:30 AM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 1 | 0 | 0 | 1 | 6 |
| 7:45 AM | 2 | 2 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 5 |
| Total Volume | 2 | 10 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 1 | 0 | 8 | 1 | 1 | 1 | 0 | 3 | 23 |
| % Approach Total | 16.7 | 83.3 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 87.5 | 12.5 | 0.0 | | 33.3 | 33.3 | 33.3 | 0.0 | | |
| PHF | 0.250 | 0.500 | 0.000 | 0.000 | 0.600 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.438 | 0.250 | 0.000 | 0.500 | 0.250 | 0.250 | 0.250 | 0.000 | 0.750 | 0.821 |
| Entering Leg | 2 | 10 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 1 | 0 | 8 | 1 | 1 | 1 | 0 | 3 | 23 |
| Exiting Leg | | | | | 8 | | | | | 1 | | | | | 11 | | | | | 3 | 23 |
| Total | | | | | 20 | | | | | 1 | | | | | 19 | | | | | 6 | 46 |

PDI File #: **175708 D**
Location: **N: L Street S: L Street**
Location: **E: East 2nd Street W: East 2nd Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Buses

| | L Street | | | | | East 2nd Street | | | | | L Street | | | | | East 2nd Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 5 |
| 7:15 AM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 9 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 6 |
| 7:45 AM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 9 |
| Total | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 0 | 0 | 27 | 0 | 0 | 0 | 0 | 0 | 29 |
| 8:00 AM | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 7 |
| 8:15 AM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 5 |
| 8:30 AM | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 0 | 9 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 12 |
| 8:45 AM | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 1 | 0 | 1 | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 11 |
| Total | 0 | 9 | 0 | 0 | 9 | 0 | 1 | 1 | 0 | 2 | 0 | 24 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 35 |
| Grand Total | 0 | 11 | 0 | 0 | 11 | 0 | 1 | 1 | 0 | 2 | 0 | 51 | 0 | 0 | 51 | 0 | 0 | 0 | 0 | 0 | 64 |
| Approach % | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 50.0 | 50.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total % | 0.0 | 17.2 | 0.0 | 0.0 | 17.2 | 0.0 | 1.6 | 1.6 | 0.0 | 3.1 | 0.0 | 79.7 | 0.0 | 0.0 | 79.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Exiting Leg Total | | | | | 51 | | | | | 0 | | | | | 12 | | | | | 1 | 64 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 8:00 AM | L Street | | | | | East 2nd Street | | | | | L Street | | | | | East 2nd Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 8:00 AM | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 7 |
| 8:15 AM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 5 |
| 8:30 AM | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 0 | 9 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 12 |
| 8:45 AM | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 1 | 0 | 1 | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 11 |
| Total Volume | 0 | 9 | 0 | 0 | 9 | 0 | 1 | 1 | 0 | 2 | 0 | 24 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 35 |
| % Approach Total | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 50.0 | 50.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | |
| PHF | 0.000 | 0.563 | 0.000 | 0.000 | 0.563 | 0.000 | 0.250 | 0.250 | 0.000 | 0.500 | 0.000 | 0.667 | 0.000 | 0.000 | 0.667 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.729 |
| Entering Leg | 0 | 9 | 0 | 0 | 9 | 0 | 1 | 1 | 0 | 2 | 0 | 24 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 35 |
| Exiting Leg | | | | | 24 | | | | | 0 | | | | | 10 | | | | | 1 | 35 |
| Total | | | | | 33 | | | | | 2 | | | | | 34 | | | | | 1 | 70 |

PDI File #: **175708 D**
Location: **N: L Street S: L Street**
Location: **E: East 2nd Street W: East 2nd Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Bicycles (on Roadway and Crosswalks)

| | L Street North | | | | | | | East 2nd Street East | | | | | | | L Street South | | | | | | | East 2nd Street West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 4 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 7:45 AM | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| Total | 0 | 1 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 7 | 1 | 0 | 1 | 0 | 0 | 0 | 2 | 11 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 9 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| Grand Total | 0 | 1 | 0 | 0 | 0 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 16 | 0 | 0 | 0 | 0 | 16 | 1 | 0 | 1 | 0 | 0 | 0 | 2 | 22 |
| Approach % | 0.0 | 50.0 | 0.0 | 0.0 | 0.0 | 50.0 | | 50.0 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 50.0 | 0.0 | 50.0 | 0.0 | 0.0 | 0.0 | | |
| Total % | 0.0 | 4.5 | 0.0 | 0.0 | 0.0 | 4.5 | 9.1 | 4.5 | 4.5 | 0.0 | 0.0 | 0.0 | 0.0 | 9.1 | 0.0 | 72.7 | 0.0 | 0.0 | 0.0 | 0.0 | 72.7 | 4.5 | 0.0 | 4.5 | 0.0 | 0.0 | 0.0 | 9.1 | |
| Exiting Leg Total | | | | | | | 19 | | | | | | | 0 | | | | | | | 2 | | | | | | | 1 | 22 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:45 AM | L Street North | | | | | | | East 2nd Street East | | | | | | | L Street South | | | | | | | East 2nd Street West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:45 AM | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Total Volume | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 10 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| % Approach Total | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| PHF | 0.000 | 0.250 | 0.000 | 0.000 | 0.000 | 0.000 | 0.250 | 0.250 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.250 | 0.000 | 0.625 | 0.000 | 0.000 | 0.000 | 0.000 | 0.625 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.600 |
| Entering Leg | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 10 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| Exiting Leg | | | | | | | 11 | | | | | | | 0 | | | | | | | 1 | | | | | | | 0 | 12 |
| Total | | | | | | | 12 | | | | | | | 1 | | | | | | | 11 | | | | | | | 0 | 24 |

PDI File #: **175708 D**
Location: **N: L Street S: L Street**
Location: **E: East 2nd Street W: East 2nd Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Pedestrians

| | L Street | | | | | | | East 2nd Street | | | | | | | L Street | | | | | | | East 2nd Street | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | East | | | | | | | South | | | | | | | West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:00 AM | 0 | 0 | 0 | 0 | 2 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 0 | 0 | 0 | 0 | 4 | 1 | 5 | 0 | 0 | 0 | 0 | 10 | 0 | 10 | 23 |
| 7:15 AM | 0 | 0 | 0 | 0 | 6 | 0 | 6 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 1 | 3 | 4 | 0 | 0 | 0 | 0 | 11 | 3 | 14 | 27 |
| 7:30 AM | 0 | 0 | 0 | 0 | 1 | 3 | 4 | 0 | 0 | 0 | 0 | 2 | 6 | 8 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 5 | 5 | 10 | 24 |
| 7:45 AM | 0 | 0 | 0 | 0 | 4 | 4 | 8 | 0 | 0 | 0 | 0 | 4 | 12 | 16 | 0 | 0 | 0 | 0 | 5 | 4 | 9 | 0 | 0 | 0 | 0 | 12 | 7 | 19 | 52 |
| Total | 0 | 0 | 0 | 0 | 13 | 9 | 22 | 0 | 0 | 0 | 0 | 7 | 24 | 31 | 0 | 0 | 0 | 0 | 11 | 9 | 20 | 0 | 0 | 0 | 0 | 38 | 15 | 53 | 126 |
| 8:00 AM | 0 | 0 | 0 | 0 | 3 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 8 | 8 | 0 | 0 | 0 | 0 | 1 | 8 | 9 | 0 | 0 | 0 | 0 | 19 | 2 | 21 | 42 |
| 8:15 AM | 0 | 0 | 0 | 0 | 7 | 3 | 10 | 0 | 0 | 0 | 0 | 3 | 10 | 13 | 0 | 0 | 0 | 0 | 2 | 3 | 5 | 0 | 0 | 0 | 0 | 24 | 2 | 26 | 54 |
| 8:30 AM | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 6 | 8 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 28 | 3 | 31 | 43 |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 11 | 12 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 11 | 1 | 12 | 27 |
| Total | 0 | 0 | 0 | 0 | 11 | 4 | 15 | 0 | 0 | 0 | 0 | 6 | 35 | 41 | 0 | 0 | 0 | 0 | 6 | 14 | 20 | 0 | 0 | 0 | 0 | 82 | 8 | 90 | 166 |
| Grand Total | 0 | 0 | 0 | 0 | 24 | 13 | 37 | 0 | 0 | 0 | 0 | 13 | 59 | 72 | 0 | 0 | 0 | 0 | 17 | 23 | 40 | 0 | 0 | 0 | 0 | 120 | 23 | 143 | 292 |
| Approach % | 0.0 | 0.0 | 0.0 | 0.0 | 64.9 | 35.1 | | 0.0 | 0.0 | 0.0 | 0.0 | 18.1 | 81.9 | | 0.0 | 0.0 | 0.0 | 0.0 | 42.5 | 57.5 | | 0.0 | 0.0 | 0.0 | 0.0 | 83.9 | 16.1 | | |
| Total % | 0.0 | 0.0 | 0.0 | 0.0 | 8.2 | 4.5 | 12.7 | 0.0 | 0.0 | 0.0 | 0.0 | 4.5 | 20.2 | 24.7 | 0.0 | 0.0 | 0.0 | 0.0 | 5.8 | 7.9 | 13.7 | 0.0 | 0.0 | 0.0 | 0.0 | 41.1 | 7.9 | 49.0 | |
| Exiting Leg Total | | | | | | | 37 | | | | | | | 72 | | | | | | | 40 | | | | | | | 143 | 292 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:45 AM | L Street | | | | | | | East 2nd Street | | | | | | | L Street | | | | | | | East 2nd Street | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | East | | | | | | | South | | | | | | | West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:45 AM | 0 | 0 | 0 | 0 | 4 | 4 | 8 | 0 | 0 | 0 | 0 | 4 | 12 | 16 | 0 | 0 | 0 | 0 | 5 | 4 | 9 | 0 | 0 | 0 | 0 | 12 | 7 | 19 | 52 |
| 8:00 AM | 0 | 0 | 0 | 0 | 3 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 8 | 8 | 0 | 0 | 0 | 0 | 1 | 8 | 9 | 0 | 0 | 0 | 0 | 19 | 2 | 21 | 42 |
| 8:15 AM | 0 | 0 | 0 | 0 | 7 | 3 | 10 | 0 | 0 | 0 | 0 | 3 | 10 | 13 | 0 | 0 | 0 | 0 | 2 | 3 | 5 | 0 | 0 | 0 | 0 | 24 | 2 | 26 | 54 |
| 8:30 AM | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 6 | 8 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 28 | 3 | 31 | 43 |
| Total Volume | 0 | 0 | 0 | 0 | 15 | 8 | 23 | 0 | 0 | 0 | 0 | 9 | 36 | 45 | 0 | 0 | 0 | 0 | 9 | 17 | 26 | 0 | 0 | 0 | 0 | 83 | 14 | 97 | 191 |
| % Approach Total | 0.0 | 0.0 | 0.0 | 0.0 | 65.2 | 34.8 | | 0.0 | 0.0 | 0.0 | 0.0 | 20.0 | 80.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 34.6 | 65.4 | | 0.0 | 0.0 | 0.0 | 0.0 | 85.6 | 14.4 | | |
| PHF | 0.000 | 0.000 | 0.000 | 0.000 | 0.536 | 0.500 | 0.575 | 0.000 | 0.000 | 0.000 | 0.000 | 0.563 | 0.750 | 0.703 | 0.000 | 0.000 | 0.000 | 0.000 | 0.450 | 0.531 | 0.722 | 0.000 | 0.000 | 0.000 | 0.000 | 0.741 | 0.500 | 0.782 | 0.884 |
| Entering Leg | 0 | 0 | 0 | 0 | 15 | 8 | 23 | 0 | 0 | 0 | 0 | 9 | 36 | 45 | 0 | 0 | 0 | 0 | 9 | 17 | 26 | 0 | 0 | 0 | 0 | 83 | 14 | 97 | 191 |
| Exiting Leg | | | | | | | 23 | | | | | | | 45 | | | | | | | 26 | | | | | | | 97 | 191 |
| Total | | | | | | | 46 | | | | | | | 90 | | | | | | | 52 | | | | | | | 194 | 382 |

PDI File #: **175708 DD**
Location: **N: L Street S: L Street**
Location: **E: East 2nd Street W: East 2nd Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Cars, Heavy Vehicles, and Buses (Combined)

| | L Street | | | | | East 2nd Street | | | | | L Street | | | | | East 2nd Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 7 | 175 | 3 | 0 | 185 | 2 | 0 | 1 | 0 | 3 | 1 | 110 | 2 | 0 | 113 | 4 | 0 | 3 | 0 | 7 | 308 |
| 4:15 PM | 8 | 186 | 2 | 0 | 196 | 4 | 0 | 1 | 0 | 5 | 2 | 106 | 2 | 0 | 110 | 5 | 0 | 2 | 0 | 7 | 318 |
| 4:30 PM | 5 | 172 | 3 | 0 | 180 | 2 | 1 | 3 | 0 | 6 | 0 | 145 | 2 | 0 | 147 | 1 | 0 | 1 | 0 | 2 | 335 |
| 4:45 PM | 7 | 178 | 4 | 0 | 189 | 2 | 4 | 0 | 0 | 6 | 1 | 110 | 4 | 0 | 115 | 1 | 0 | 2 | 0 | 3 | 313 |
| Total | 27 | 711 | 12 | 0 | 750 | 10 | 5 | 5 | 0 | 20 | 4 | 471 | 10 | 0 | 485 | 11 | 0 | 8 | 0 | 19 | 1274 |
| 5:00 PM | 4 | 188 | 4 | 0 | 196 | 4 | 0 | 3 | 0 | 7 | 5 | 148 | 6 | 0 | 159 | 6 | 0 | 3 | 0 | 9 | 371 |
| 5:15 PM | 5 | 186 | 5 | 0 | 196 | 1 | 0 | 2 | 0 | 3 | 0 | 125 | 4 | 0 | 129 | 2 | 0 | 1 | 0 | 3 | 331 |
| 5:30 PM | 7 | 181 | 4 | 0 | 192 | 1 | 0 | 6 | 0 | 7 | 3 | 130 | 5 | 0 | 138 | 0 | 0 | 3 | 0 | 3 | 340 |
| 5:45 PM | 8 | 202 | 7 | 0 | 217 | 1 | 2 | 4 | 0 | 7 | 1 | 135 | 4 | 0 | 140 | 0 | 1 | 2 | 0 | 3 | 367 |
| Total | 24 | 757 | 20 | 0 | 801 | 7 | 2 | 15 | 0 | 24 | 9 | 538 | 19 | 0 | 566 | 8 | 1 | 9 | 0 | 18 | 1409 |
| Grand Total | 51 | 1468 | 32 | 0 | 1551 | 17 | 7 | 20 | 0 | 44 | 13 | 1009 | 29 | 0 | 1051 | 19 | 1 | 17 | 0 | 37 | 2683 |
| Approach % | 3.3 | 94.6 | 2.1 | 0.0 | | 38.6 | 15.9 | 45.5 | 0.0 | | 1.2 | 96.0 | 2.8 | 0.0 | | 51.4 | 2.7 | 45.9 | 0.0 | | |
| Total % | 1.9 | 54.7 | 1.2 | 0.0 | 57.8 | 0.6 | 0.3 | 0.7 | 0.0 | 1.6 | 0.5 | 37.6 | 1.1 | 0.0 | 39.2 | 0.7 | 0.0 | 0.6 | 0.0 | 1.4 | |
| Exiting Leg Total | | | | | 1043 | | | | | 46 | | | | | 1507 | | | | | 87 | 2683 |
| Cars | 50 | 1446 | 32 | 0 | 1528 | 16 | 7 | 19 | 0 | 42 | 13 | 997 | 29 | 0 | 1039 | 19 | 1 | 17 | 0 | 37 | 2646 |
| % Cars | 98.0 | 98.5 | 100.0 | 0.0 | 98.5 | 94.1 | 100.0 | 95.0 | 0.0 | 95.5 | 100.0 | 98.8 | 100.0 | 0.0 | 98.9 | 100.0 | 100.0 | 100.0 | 0.0 | 100.0 | 98.6 |
| Exiting Leg Total | | | | | 1030 | | | | | 46 | | | | | 1484 | | | | | 86 | 2646 |
| Heavy Vehicles | 1 | 3 | 0 | 0 | 4 | 1 | 0 | 0 | 0 | 1 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 10 |
| % Heavy Vehicles | 2.0 | 0.2 | 0.0 | 0.0 | 0.3 | 5.9 | 0.0 | 0.0 | 0.0 | 2.3 | 0.0 | 0.5 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 |
| Exiting Leg Total | | | | | 6 | | | | | 0 | | | | | 3 | | | | | 1 | 10 |
| Buses | 0 | 19 | 0 | 0 | 19 | 0 | 0 | 1 | 0 | 1 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 27 |
| % Buses | 0.0 | 1.3 | 0.0 | 0.0 | 1.2 | 0.0 | 0.0 | 5.0 | 0.0 | 2.3 | 0.0 | 0.7 | 0.0 | 0.0 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 |
| Exiting Leg Total | | | | | 7 | | | | | 0 | | | | | 20 | | | | | 0 | 27 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 5:00 PM | L Street | | | | | East 2nd Street | | | | | L Street | | | | | East 2nd Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 5:00 PM | 4 | 188 | 4 | 0 | 196 | 4 | 0 | 3 | 0 | 7 | 5 | 148 | 6 | 0 | 159 | 6 | 0 | 3 | 0 | 9 | 371 |
| 5:15 PM | 5 | 186 | 5 | 0 | 196 | 1 | 0 | 2 | 0 | 3 | 0 | 125 | 4 | 0 | 129 | 2 | 0 | 1 | 0 | 3 | 331 |
| 5:30 PM | 7 | 181 | 4 | 0 | 192 | 1 | 0 | 6 | 0 | 7 | 3 | 130 | 5 | 0 | 138 | 0 | 0 | 3 | 0 | 3 | 340 |
| 5:45 PM | 8 | 202 | 7 | 0 | 217 | 1 | 2 | 4 | 0 | 7 | 1 | 135 | 4 | 0 | 140 | 0 | 1 | 2 | 0 | 3 | 367 |
| Total Volume | 24 | 757 | 20 | 0 | 801 | 7 | 2 | 15 | 0 | 24 | 9 | 538 | 19 | 0 | 566 | 8 | 1 | 9 | 0 | 18 | 1409 |
| % Approach Total | 3.0 | 94.5 | 2.5 | 0.0 | | 29.2 | 8.3 | 62.5 | 0.0 | | 1.6 | 95.1 | 3.4 | 0.0 | | 44.4 | 5.6 | 50.0 | 0.0 | | |
| PHF | 0.750 | 0.937 | 0.714 | 0.000 | 0.923 | 0.438 | 0.250 | 0.625 | 0.000 | 0.857 | 0.450 | 0.909 | 0.792 | 0.000 | 0.890 | 0.333 | 0.250 | 0.750 | 0.000 | 0.500 | 0.949 |
| Cars | 23 | 745 | 20 | 0 | 788 | 7 | 2 | 15 | 0 | 24 | 9 | 535 | 19 | 0 | 563 | 8 | 1 | 9 | 0 | 18 | 1393 |
| Cars % | 95.8 | 98.4 | 100.0 | 0.0 | 98.4 | 100.0 | 100.0 | 100.0 | 0.0 | 100.0 | 100.0 | 99.4 | 100.0 | 0.0 | 99.5 | 100.0 | 100.0 | 100.0 | 0.0 | 100.0 | 98.9 |
| Heavy Vehicles | 1 | 2 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Heavy Vehicles % | 4.2 | 0.3 | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 |
| Buses | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 13 |
| Buses % | 0.0 | 1.3 | 0.0 | 0.0 | 1.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.9 |
| Cars Enter Leg | 23 | 745 | 20 | 0 | 788 | 7 | 2 | 15 | 0 | 24 | 9 | 535 | 19 | 0 | 563 | 8 | 1 | 9 | 0 | 18 | 1393 |
| Heavy Enter Leg | 1 | 2 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Bus Enter Leg | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 13 |
| Total Entering Leg | 24 | 757 | 20 | 0 | 801 | 7 | 2 | 15 | 0 | 24 | 9 | 538 | 19 | 0 | 566 | 8 | 1 | 9 | 0 | 18 | 1409 |
| Cars Exiting Leg | | | | | 551 | | | | | 30 | | | | | 768 | | | | | 44 | 1393 |
| Heavy Exiting Leg | | | | | 0 | | | | | 0 | | | | | 2 | | | | | 1 | 3 |
| Buses Exiting Leg | | | | | 3 | | | | | 0 | | | | | 10 | | | | | 0 | 13 |
| Total Exiting Leg | | | | | 554 | | | | | 30 | | | | | 780 | | | | | 45 | 1409 |

PDI File #: **175708 DD**
Location: **N: L Street S: L Street**
Location: **E: East 2nd Street W: East 2nd Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Cars

| | L Street | | | | | East 2nd Street | | | | | L Street | | | | | East 2nd Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 7 | 174 | 3 | 0 | 184 | 2 | 0 | 1 | 0 | 3 | 1 | 107 | 2 | 0 | 110 | 4 | 0 | 3 | 0 | 7 | 304 |
| 4:15 PM | 8 | 184 | 2 | 0 | 194 | 4 | 0 | 0 | 0 | 4 | 2 | 103 | 2 | 0 | 107 | 5 | 0 | 2 | 0 | 7 | 312 |
| 4:30 PM | 5 | 171 | 3 | 0 | 179 | 1 | 1 | 3 | 0 | 5 | 0 | 145 | 2 | 0 | 147 | 1 | 0 | 1 | 0 | 2 | 333 |
| 4:45 PM | 7 | 172 | 4 | 0 | 183 | 2 | 4 | 0 | 0 | 6 | 1 | 107 | 4 | 0 | 112 | 1 | 0 | 2 | 0 | 3 | 304 |
| Total | 27 | 701 | 12 | 0 | 740 | 9 | 5 | 4 | 0 | 18 | 4 | 462 | 10 | 0 | 476 | 11 | 0 | 8 | 0 | 19 | 1253 |
| 5:00 PM | 3 | 186 | 4 | 0 | 193 | 4 | 0 | 3 | 0 | 7 | 5 | 147 | 6 | 0 | 158 | 6 | 0 | 3 | 0 | 9 | 367 |
| 5:15 PM | 5 | 184 | 5 | 0 | 194 | 1 | 0 | 2 | 0 | 3 | 0 | 124 | 4 | 0 | 128 | 2 | 0 | 1 | 0 | 3 | 328 |
| 5:30 PM | 7 | 178 | 4 | 0 | 189 | 1 | 0 | 6 | 0 | 7 | 3 | 129 | 5 | 0 | 137 | 0 | 0 | 3 | 0 | 3 | 336 |
| 5:45 PM | 8 | 197 | 7 | 0 | 212 | 1 | 2 | 4 | 0 | 7 | 1 | 135 | 4 | 0 | 140 | 0 | 1 | 2 | 0 | 3 | 362 |
| Total | 23 | 745 | 20 | 0 | 788 | 7 | 2 | 15 | 0 | 24 | 9 | 535 | 19 | 0 | 563 | 8 | 1 | 9 | 0 | 18 | 1393 |
| Grand Total | 50 | 1446 | 32 | 0 | 1528 | 16 | 7 | 19 | 0 | 42 | 13 | 997 | 29 | 0 | 1039 | 19 | 1 | 17 | 0 | 37 | 2646 |
| Approach % | 3.3 | 94.6 | 2.1 | 0.0 | | 38.1 | 16.7 | 45.2 | 0.0 | | 1.3 | 96.0 | 2.8 | 0.0 | | 51.4 | 2.7 | 45.9 | 0.0 | | |
| Total % | 1.9 | 54.6 | 1.2 | 0.0 | 57.7 | 0.6 | 0.3 | 0.7 | 0.0 | 1.6 | 0.5 | 37.7 | 1.1 | 0.0 | 39.3 | 0.7 | 0.0 | 0.6 | 0.0 | 1.4 | |
| Exiting Leg Total | | | | | 1030 | | | | | 46 | | | | | 1484 | | | | | 86 | 2646 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 5:00 PM | L Street | | | | | East 2nd Street | | | | | L Street | | | | | East 2nd Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 5:00 PM | 3 | 186 | 4 | 0 | 193 | 4 | 0 | 3 | 0 | 7 | 5 | 147 | 6 | 0 | 158 | 6 | 0 | 3 | 0 | 9 | 367 |
| 5:15 PM | 5 | 184 | 5 | 0 | 194 | 1 | 0 | 2 | 0 | 3 | 0 | 124 | 4 | 0 | 128 | 2 | 0 | 1 | 0 | 3 | 328 |
| 5:30 PM | 7 | 178 | 4 | 0 | 189 | 1 | 0 | 6 | 0 | 7 | 3 | 129 | 5 | 0 | 137 | 0 | 0 | 3 | 0 | 3 | 336 |
| 5:45 PM | 8 | 197 | 7 | 0 | 212 | 1 | 2 | 4 | 0 | 7 | 1 | 135 | 4 | 0 | 140 | 0 | 1 | 2 | 0 | 3 | 362 |
| Total Volume | 23 | 745 | 20 | 0 | 788 | 7 | 2 | 15 | 0 | 24 | 9 | 535 | 19 | 0 | 563 | 8 | 1 | 9 | 0 | 18 | 1393 |
| % Approach Total | 2.9 | 94.5 | 2.5 | 0.0 | | 29.2 | 8.3 | 62.5 | 0.0 | | 1.6 | 95.0 | 3.4 | 0.0 | | 44.4 | 5.6 | 50.0 | 0.0 | | |
| PHF | 0.719 | 0.945 | 0.714 | 0.000 | 0.929 | 0.438 | 0.250 | 0.625 | 0.000 | 0.857 | 0.450 | 0.910 | 0.792 | 0.000 | 0.891 | 0.333 | 0.250 | 0.750 | 0.000 | 0.500 | 0.949 |
| Entering Leg | 23 | 745 | 20 | 0 | 788 | 7 | 2 | 15 | 0 | 24 | 9 | 535 | 19 | 0 | 563 | 8 | 1 | 9 | 0 | 18 | 1393 |
| Exiting Leg | | | | | 551 | | | | | 30 | | | | | 768 | | | | | 44 | 1393 |
| Total | | | | | 1339 | | | | | 54 | | | | | 1331 | | | | | 62 | 2786 |

PDI File #: **175708 DD**
Location: **N: L Street S: L Street**
Location: **E: East 2nd Street W: East 2nd Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Heavy Vehicles

| | L Street | | | | | East 2nd Street | | | | | L Street | | | | | East 2nd Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 3 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 4:45 PM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| Total | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 7 |
| 5:00 PM | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:45 PM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 1 | 2 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Grand Total | 1 | 3 | 0 | 0 | 4 | 1 | 0 | 0 | 0 | 1 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 10 |
| Approach % | 25.0 | 75.0 | 0.0 | 0.0 | | 100.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total % | 10.0 | 30.0 | 0.0 | 0.0 | 40.0 | 10.0 | 0.0 | 0.0 | 0.0 | 10.0 | 0.0 | 50.0 | 0.0 | 0.0 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Exiting Leg Total | | | | | 6 | | | | | 0 | | | | | 3 | | | | | 1 | 10 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:15 PM | L Street | | | | | East 2nd Street | | | | | L Street | | | | | East 2nd Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 3 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 4:45 PM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| 5:00 PM | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Total Volume | 1 | 2 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 1 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 8 |
| % Approach Total | 33.3 | 66.7 | 0.0 | 0.0 | | 100.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | |
| PHF | 0.250 | 0.500 | 0.000 | 0.000 | 0.375 | 0.250 | 0.000 | 0.000 | 0.000 | 0.250 | 0.000 | 0.333 | 0.000 | 0.000 | 0.333 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.667 |
| Entering Leg | 1 | 2 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 1 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 8 |
| Exiting Leg | | | | | 5 | | | | | 0 | | | | | 2 | | | | | 1 | 8 |
| Total | | | | | 8 | | | | | 1 | | | | | 6 | | | | | 1 | 16 |

PDI File #: **175708 DD**
Location: **N: L Street S: L Street**
Location: **E: East 2nd Street W: East 2nd Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Buses

| | L Street | | | | | East 2nd Street | | | | | L Street | | | | | East 2nd Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 3 |
| 4:15 PM | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 4:30 PM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 4:45 PM | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 7 |
| Total | 0 | 9 | 0 | 0 | 9 | 0 | 0 | 1 | 0 | 1 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 14 |
| 5:00 PM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| 5:15 PM | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 |
| 5:30 PM | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 4 |
| 5:45 PM | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| Total | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 13 |
| Grand Total | 0 | 19 | 0 | 0 | 19 | 0 | 0 | 1 | 0 | 1 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 27 |
| Approach % | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 100.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total % | 0.0 | 70.4 | 0.0 | 0.0 | 70.4 | 0.0 | 0.0 | 3.7 | 0.0 | 3.7 | 0.0 | 25.9 | 0.0 | 0.0 | 25.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Exiting Leg Total | | | | | 7 | | | | | 0 | | | | | 20 | | | | | 0 | 27 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:45 PM | L Street | | | | | East 2nd Street | | | | | L Street | | | | | East 2nd Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:45 PM | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 7 |
| 5:00 PM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| 5:15 PM | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 |
| 5:30 PM | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 4 |
| Total Volume | 0 | 11 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 16 |
| % Approach Total | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | |
| PHF | 0.000 | 0.550 | 0.000 | 0.000 | 0.550 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.625 | 0.000 | 0.000 | 0.625 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.571 |
| Entering Leg | 0 | 11 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 16 |
| Exiting Leg | | | | | 5 | | | | | 0 | | | | | 11 | | | | | 0 | 16 |
| Total | | | | | 16 | | | | | 0 | | | | | 16 | | | | | 0 | 32 |

PDI File #: **175708 DD**
Location: **N: L Street S: L Street**
Location: **E: East 2nd Street W: East 2nd Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Bicycles (on Roadway and Crosswalks)

| | L Street | | | | | | | East 2nd Street | | | | | | | L Street | | | | | | | East 2nd Street | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | East | | | | | | | South | | | | | | | West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 4:15 PM | 0 | 4 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 4:30 PM | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 4:45 PM | 0 | 6 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| Total | 0 | 12 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| 5:00 PM | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 5:15 PM | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 5:30 PM | 0 | 7 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 9 |
| 5:45 PM | 0 | 5 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| Total | 0 | 17 | 0 | 0 | 0 | 0 | 17 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 20 |
| Grand Total | 0 | 29 | 0 | 0 | 0 | 0 | 29 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 34 |
| Approach % | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | | 0.0 | 66.7 | 0.0 | 0.0 | 0.0 | 33.3 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | | |
| Total % | 0.0 | 85.3 | 0.0 | 0.0 | 0.0 | 0.0 | 85.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.9 | 2.9 | 0.0 | 5.9 | 0.0 | 0.0 | 0.0 | 2.9 | 8.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.9 | 2.9 | |
| Exiting Leg Total | | | | | | | 2 | | | | | | | 1 | | | | | | | 30 | | | | | | | 1 | 34 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:45 PM | L Street | | | | | | | East 2nd Street | | | | | | | L Street | | | | | | | East 2nd Street | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | East | | | | | | | South | | | | | | | West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 4:45 PM | 0 | 6 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 5:00 PM | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 5:15 PM | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 5:30 PM | 0 | 7 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 9 |
| Total Volume | 0 | 18 | 0 | 0 | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 21 |
| % Approach Total | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | | |
| PHF | 0.000 | 0.643 | 0.000 | 0.000 | 0.000 | 0.000 | 0.643 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.250 | 0.250 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.250 | 0.250 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.250 | 0.250 | 0.583 |
| Entering Leg | 0 | 18 | 0 | 0 | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 21 |
| Exiting Leg | | | | | | | 0 | | | | | | | 1 | | | | | | | 19 | | | | | | | 1 | 21 |
| Total | | | | | | | 18 | | | | | | | 2 | | | | | | | 20 | | | | | | | 2 | 42 |

PDI File #: **175708 DD**
Location: **N: L Street S: L Street**
Location: **E: East 2nd Street W: East 2nd Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Pedestrians

| | L Street | | | | | | | East 2nd Street | | | | | | | L Street | | | | | | | East 2nd Street | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | East | | | | | | | South | | | | | | | West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 5 |
| 4:15 PM | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 3 | 3 | 6 | 0 | 0 | 0 | 0 | 1 | 3 | 4 | 0 | 0 | 0 | 0 | 4 | 7 | 11 | 23 |
| 4:30 PM | 0 | 0 | 0 | 0 | 2 | 2 | 4 | 0 | 0 | 0 | 0 | 4 | 4 | 8 | 0 | 0 | 0 | 0 | 2 | 3 | 5 | 0 | 0 | 0 | 0 | 4 | 8 | 12 | 29 |
| 4:45 PM | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 6 | 4 | 10 | 0 | 0 | 0 | 0 | 2 | 2 | 4 | 0 | 0 | 0 | 0 | 9 | 9 | 18 | 34 |
| Total | 0 | 0 | 0 | 0 | 7 | 3 | 10 | 0 | 0 | 0 | 0 | 13 | 11 | 24 | 0 | 0 | 0 | 0 | 5 | 8 | 13 | 0 | 0 | 0 | 0 | 18 | 26 | 44 | 91 |
| 5:00 PM | 0 | 0 | 0 | 0 | 3 | 5 | 8 | 0 | 0 | 0 | 0 | 5 | 2 | 7 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 2 | 14 | 16 | 34 |
| 5:15 PM | 0 | 0 | 0 | 0 | 5 | 3 | 8 | 0 | 0 | 0 | 0 | 5 | 5 | 10 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 10 | 27 | 37 | 56 |
| 5:30 PM | 0 | 0 | 0 | 0 | 6 | 2 | 8 | 0 | 0 | 0 | 0 | 6 | 5 | 11 | 0 | 0 | 0 | 0 | 3 | 3 | 6 | 0 | 0 | 0 | 0 | 4 | 32 | 36 | 61 |
| 5:45 PM | 0 | 0 | 0 | 0 | 6 | 3 | 9 | 0 | 0 | 0 | 0 | 7 | 9 | 16 | 0 | 0 | 0 | 0 | 1 | 4 | 5 | 0 | 0 | 0 | 0 | 4 | 38 | 42 | 72 |
| Total | 0 | 0 | 0 | 0 | 20 | 13 | 33 | 0 | 0 | 0 | 0 | 23 | 21 | 44 | 0 | 0 | 0 | 0 | 7 | 8 | 15 | 0 | 0 | 0 | 0 | 20 | 111 | 131 | 223 |
| Grand Total | 0 | 0 | 0 | 0 | 27 | 16 | 43 | 0 | 0 | 0 | 0 | 36 | 32 | 68 | 0 | 0 | 0 | 0 | 12 | 16 | 28 | 0 | 0 | 0 | 0 | 38 | 137 | 175 | 314 |
| Approach % | 0.0 | 0.0 | 0.0 | 0.0 | 62.8 | 37.2 | | 0.0 | 0.0 | 0.0 | 0.0 | 52.9 | 47.1 | | 0.0 | 0.0 | 0.0 | 0.0 | 42.9 | 57.1 | | 0.0 | 0.0 | 0.0 | 0.0 | 21.7 | 78.3 | | |
| Total % | 0.0 | 0.0 | 0.0 | 0.0 | 8.6 | 5.1 | 13.7 | 0.0 | 0.0 | 0.0 | 0.0 | 11.5 | 10.2 | 21.7 | 0.0 | 0.0 | 0.0 | 0.0 | 3.8 | 5.1 | 8.9 | 0.0 | 0.0 | 0.0 | 0.0 | 12.1 | 43.6 | 55.7 | |
| Exiting Leg Total | | | | | | | 43 | | | | | | | 68 | | | | | | | 28 | | | | | | | 175 | 314 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 5:00 PM | L Street | | | | | | | East 2nd Street | | | | | | | L Street | | | | | | | East 2nd Street | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | East | | | | | | | South | | | | | | | West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 5:00 PM | 0 | 0 | 0 | 0 | 3 | 5 | 8 | 0 | 0 | 0 | 0 | 5 | 2 | 7 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 2 | 14 | 16 | 34 |
| 5:15 PM | 0 | 0 | 0 | 0 | 5 | 3 | 8 | 0 | 0 | 0 | 0 | 5 | 5 | 10 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 10 | 27 | 37 | 56 |
| 5:30 PM | 0 | 0 | 0 | 0 | 6 | 2 | 8 | 0 | 0 | 0 | 0 | 6 | 5 | 11 | 0 | 0 | 0 | 0 | 3 | 3 | 6 | 0 | 0 | 0 | 0 | 4 | 32 | 36 | 61 |
| 5:45 PM | 0 | 0 | 0 | 0 | 6 | 3 | 9 | 0 | 0 | 0 | 0 | 7 | 9 | 16 | 0 | 0 | 0 | 0 | 1 | 4 | 5 | 0 | 0 | 0 | 0 | 4 | 38 | 42 | 72 |
| Total Volume | 0 | 0 | 0 | 0 | 20 | 13 | 33 | 0 | 0 | 0 | 0 | 23 | 21 | 44 | 0 | 0 | 0 | 0 | 7 | 8 | 15 | 0 | 0 | 0 | 0 | 20 | 111 | 131 | 223 |
| % Approach Total | 0.0 | 0.0 | 0.0 | 0.0 | 60.6 | 39.4 | | 0.0 | 0.0 | 0.0 | 0.0 | 52.3 | 47.7 | | 0.0 | 0.0 | 0.0 | 0.0 | 46.7 | 53.3 | | 0.0 | 0.0 | 0.0 | 0.0 | 15.3 | 84.7 | | |
| PHF | 0.000 | 0.000 | 0.000 | 0.000 | 0.833 | 0.650 | 0.917 | 0.000 | 0.000 | 0.000 | 0.000 | 0.821 | 0.583 | 0.688 | 0.000 | 0.000 | 0.000 | 0.000 | 0.583 | 0.500 | 0.625 | 0.000 | 0.000 | 0.000 | 0.000 | 0.500 | 0.730 | 0.780 | 0.774 |
| Entering Leg | 0 | 0 | 0 | 0 | 20 | 13 | 33 | 0 | 0 | 0 | 0 | 23 | 21 | 44 | 0 | 0 | 0 | 0 | 7 | 8 | 15 | 0 | 0 | 0 | 0 | 20 | 111 | 131 | 223 |
| Exiting Leg | | | | | | | 33 | | | | | | | 44 | | | | | | | 15 | | | | | | | 131 | 223 |
| Total | | | | | | | 66 | | | | | | | 88 | | | | | | | 30 | | | | | | | 262 | 446 |

PDI File #: **175708 E**
Location: **N: L Street S: L Street**
Location: **E: East 3rd Street W: East 3rd Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Cars, Heavy Vehicles, and Buses (Combined)

| | L Street | | | | | East 3rd Street | | | | | L Street | | | | | East 3rd Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 9 | 93 | 6 | 1 | 109 | 2 | 1 | 0 | 0 | 3 | 0 | 204 | 4 | 0 | 208 | 6 | 0 | 8 | 0 | 14 | 334 |
| 7:15 AM | 9 | 64 | 0 | 1 | 74 | 3 | 3 | 1 | 0 | 7 | 2 | 190 | 1 | 0 | 193 | 3 | 3 | 4 | 0 | 10 | 284 |
| 7:30 AM | 4 | 75 | 3 | 1 | 83 | 10 | 3 | 2 | 0 | 15 | 1 | 186 | 4 | 0 | 191 | 5 | 0 | 4 | 0 | 9 | 298 |
| 7:45 AM | 8 | 75 | 0 | 0 | 83 | 3 | 5 | 1 | 0 | 9 | 0 | 172 | 6 | 0 | 178 | 8 | 0 | 2 | 0 | 10 | 280 |
| Total | 30 | 307 | 9 | 3 | 349 | 18 | 12 | 4 | 0 | 34 | 3 | 752 | 15 | 0 | 770 | 22 | 3 | 18 | 0 | 43 | 1196 |
| 8:00 AM | 3 | 104 | 3 | 0 | 110 | 13 | 5 | 3 | 0 | 21 | 1 | 176 | 5 | 1 | 183 | 5 | 0 | 4 | 0 | 9 | 323 |
| 8:15 AM | 7 | 78 | 5 | 2 | 92 | 7 | 3 | 1 | 0 | 11 | 2 | 165 | 2 | 0 | 169 | 4 | 1 | 3 | 0 | 8 | 280 |
| 8:30 AM | 7 | 92 | 4 | 0 | 103 | 5 | 5 | 2 | 0 | 12 | 0 | 184 | 5 | 0 | 189 | 6 | 0 | 4 | 0 | 10 | 314 |
| 8:45 AM | 5 | 93 | 4 | 0 | 102 | 7 | 4 | 1 | 0 | 12 | 3 | 157 | 7 | 2 | 169 | 3 | 0 | 4 | 0 | 7 | 290 |
| Total | 22 | 367 | 16 | 2 | 407 | 32 | 17 | 7 | 0 | 56 | 6 | 682 | 19 | 3 | 710 | 18 | 1 | 15 | 0 | 34 | 1207 |
| Grand Total | 52 | 674 | 25 | 5 | 756 | 50 | 29 | 11 | 0 | 90 | 9 | 1434 | 34 | 3 | 1480 | 40 | 4 | 33 | 0 | 77 | 2403 |
| Approach % | 6.9 | 89.2 | 3.3 | 0.7 | | 55.6 | 32.2 | 12.2 | 0.0 | | 0.6 | 96.9 | 2.3 | 0.2 | | 51.9 | 5.2 | 42.9 | 0.0 | | |
| Total % | 2.2 | 28.0 | 1.0 | 0.2 | 31.5 | 2.1 | 1.2 | 0.5 | 0.0 | 3.7 | 0.4 | 59.7 | 1.4 | 0.1 | 61.6 | 1.7 | 0.2 | 1.4 | 0.0 | 3.2 | |
| Exiting Leg Total | | | | | 1522 | | | | | 38 | | | | | 728 | | | | | 115 | 2403 |
| Cars | 52 | 642 | 24 | 5 | 723 | 50 | 28 | 11 | 0 | 89 | 9 | 1370 | 33 | 3 | 1415 | 39 | 4 | 32 | 0 | 75 | 2302 |
| % Cars | 100.0 | 95.3 | 96.0 | 100.0 | 95.6 | 100.0 | 96.6 | 100.0 | 0.0 | 98.9 | 100.0 | 95.5 | 97.1 | 100.0 | 95.6 | 97.5 | 100.0 | 97.0 | 0.0 | 97.4 | 95.8 |
| Exiting Leg Total | | | | | 1457 | | | | | 37 | | | | | 695 | | | | | 113 | 2302 |
| Heavy Vehicles | 0 | 20 | 0 | 0 | 20 | 0 | 1 | 0 | 0 | 1 | 0 | 12 | 1 | 0 | 13 | 1 | 0 | 1 | 0 | 2 | 36 |
| % Heavy Vehicles | 0.0 | 3.0 | 0.0 | 0.0 | 2.6 | 0.0 | 3.4 | 0.0 | 0.0 | 1.1 | 0.0 | 0.8 | 2.9 | 0.0 | 0.9 | 2.5 | 0.0 | 3.0 | 0.0 | 2.6 | 1.5 |
| Exiting Leg Total | | | | | 13 | | | | | 0 | | | | | 21 | | | | | 2 | 36 |
| Buses | 0 | 12 | 1 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 52 | 0 | 0 | 52 | 0 | 0 | 0 | 0 | 0 | 65 |
| % Buses | 0.0 | 1.8 | 4.0 | 0.0 | 1.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.6 | 0.0 | 0.0 | 3.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.7 |
| Exiting Leg Total | | | | | 52 | | | | | 1 | | | | | 12 | | | | | 0 | 65 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 8:00 AM | L Street | | | | | East 3rd Street | | | | | L Street | | | | | East 3rd Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 8:00 AM | 3 | 104 | 3 | 0 | 110 | 13 | 5 | 3 | 0 | 21 | 1 | 176 | 5 | 1 | 183 | 5 | 0 | 4 | 0 | 9 | 323 |
| 8:15 AM | 7 | 78 | 5 | 2 | 92 | 7 | 3 | 1 | 0 | 11 | 2 | 165 | 2 | 0 | 169 | 4 | 1 | 3 | 0 | 8 | 280 |
| 8:30 AM | 7 | 92 | 4 | 0 | 103 | 5 | 5 | 2 | 0 | 12 | 0 | 184 | 5 | 0 | 189 | 6 | 0 | 4 | 0 | 10 | 314 |
| 8:45 AM | 5 | 93 | 4 | 0 | 102 | 7 | 4 | 1 | 0 | 12 | 3 | 157 | 7 | 2 | 169 | 3 | 0 | 4 | 0 | 7 | 290 |
| Total Volume | 22 | 367 | 16 | 2 | 407 | 32 | 17 | 7 | 0 | 56 | 6 | 682 | 19 | 3 | 710 | 18 | 1 | 15 | 0 | 34 | 1207 |
| % Approach Total | 5.4 | 90.2 | 3.9 | 0.5 | | 57.1 | 30.4 | 12.5 | 0.0 | | 0.8 | 96.1 | 2.7 | 0.4 | | 52.9 | 2.9 | 44.1 | 0.0 | | |
| PHF | 0.786 | 0.882 | 0.800 | 0.250 | 0.925 | 0.615 | 0.850 | 0.583 | 0.000 | 0.667 | 0.500 | 0.927 | 0.679 | 0.375 | 0.939 | 0.750 | 0.250 | 0.938 | 0.000 | 0.850 | 0.934 |
| Cars | 22 | 349 | 15 | 2 | 388 | 32 | 17 | 7 | 0 | 56 | 6 | 652 | 18 | 3 | 679 | 17 | 1 | 15 | 0 | 33 | 1156 |
| Cars % | 100.0 | 95.1 | 93.8 | 100.0 | 95.3 | 100.0 | 100.0 | 100.0 | 0.0 | 100.0 | 100.0 | 95.6 | 94.7 | 100.0 | 95.6 | 94.4 | 100.0 | 100.0 | 0.0 | 97.1 | 95.8 |
| Heavy Vehicles | 0 | 8 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 1 | 0 | 6 | 1 | 0 | 0 | 0 | 1 | 15 |
| Heavy Vehicles % | 0.0 | 2.2 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 5.3 | 0.0 | 0.8 | 5.6 | 0.0 | 0.0 | 0.0 | 2.9 | 1.2 |
| Buses | 0 | 10 | 1 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 36 |
| Buses % | 0.0 | 2.7 | 6.3 | 0.0 | 2.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.7 | 0.0 | 0.0 | 3.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.0 |
| Cars Enter Leg | 22 | 349 | 15 | 2 | 388 | 32 | 17 | 7 | 0 | 56 | 6 | 652 | 18 | 3 | 679 | 17 | 1 | 15 | 0 | 33 | 1156 |
| Heavy Enter Leg | 0 | 8 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 1 | 0 | 6 | 1 | 0 | 0 | 0 | 1 | 15 |
| Bus Enter Leg | 0 | 10 | 1 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 36 |
| Total Entering Leg | 22 | 367 | 16 | 2 | 407 | 32 | 17 | 7 | 0 | 56 | 6 | 682 | 19 | 3 | 710 | 18 | 1 | 15 | 0 | 34 | 1207 |
| Cars Exiting Leg | | | | | 701 | | | | | 22 | | | | | 376 | | | | | 57 | 1156 |
| Heavy Exiting Leg | | | | | 5 | | | | | 0 | | | | | 9 | | | | | 1 | 15 |
| Buses Exiting Leg | | | | | 25 | | | | | 1 | | | | | 10 | | | | | 0 | 36 |
| Total Exiting Leg | | | | | 731 | | | | | 23 | | | | | 395 | | | | | 58 | 1207 |

PDI File #: **175708 E**
Location: **N: L Street S: L Street**
Location: **E: East 3rd Street W: East 3rd Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Cars

| | L Street | | | | | East 3rd Street | | | | | L Street | | | | | East 3rd Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 9 | 90 | 6 | 1 | 106 | 2 | 1 | 0 | 0 | 3 | 0 | 197 | 4 | 0 | 201 | 6 | 0 | 8 | 0 | 14 | 324 |
| 7:15 AM | 9 | 59 | 0 | 1 | 69 | 3 | 3 | 1 | 0 | 7 | 2 | 180 | 1 | 0 | 183 | 3 | 3 | 3 | 0 | 9 | 268 |
| 7:30 AM | 4 | 73 | 3 | 1 | 81 | 10 | 2 | 2 | 0 | 14 | 1 | 177 | 4 | 0 | 182 | 5 | 0 | 4 | 0 | 9 | 286 |
| 7:45 AM | 8 | 71 | 0 | 0 | 79 | 3 | 5 | 1 | 0 | 9 | 0 | 164 | 6 | 0 | 170 | 8 | 0 | 2 | 0 | 10 | 268 |
| Total | 30 | 293 | 9 | 3 | 335 | 18 | 11 | 4 | 0 | 33 | 3 | 718 | 15 | 0 | 736 | 22 | 3 | 17 | 0 | 42 | 1146 |
| 8:00 AM | 3 | 101 | 3 | 0 | 107 | 13 | 5 | 3 | 0 | 21 | 1 | 169 | 5 | 1 | 176 | 4 | 0 | 4 | 0 | 8 | 312 |
| 8:15 AM | 7 | 76 | 5 | 2 | 90 | 7 | 3 | 1 | 0 | 11 | 2 | 157 | 2 | 0 | 161 | 4 | 1 | 3 | 0 | 8 | 270 |
| 8:30 AM | 7 | 87 | 3 | 0 | 97 | 5 | 5 | 2 | 0 | 12 | 0 | 176 | 5 | 0 | 181 | 6 | 0 | 4 | 0 | 10 | 300 |
| 8:45 AM | 5 | 85 | 4 | 0 | 94 | 7 | 4 | 1 | 0 | 12 | 3 | 150 | 6 | 2 | 161 | 3 | 0 | 4 | 0 | 7 | 274 |
| Total | 22 | 349 | 15 | 2 | 388 | 32 | 17 | 7 | 0 | 56 | 6 | 652 | 18 | 3 | 679 | 17 | 1 | 15 | 0 | 33 | 1156 |
| Grand Total | 52 | 642 | 24 | 5 | 723 | 50 | 28 | 11 | 0 | 89 | 9 | 1370 | 33 | 3 | 1415 | 39 | 4 | 32 | 0 | 75 | 2302 |
| Approach % | 7.2 | 88.8 | 3.3 | 0.7 | | 56.2 | 31.5 | 12.4 | 0.0 | | 0.6 | 96.8 | 2.3 | 0.2 | | 52.0 | 5.3 | 42.7 | 0.0 | | |
| Total % | 2.3 | 27.9 | 1.0 | 0.2 | 31.4 | 2.2 | 1.2 | 0.5 | 0.0 | 3.9 | 0.4 | 59.5 | 1.4 | 0.1 | 61.5 | 1.7 | 0.2 | 1.4 | 0.0 | 3.3 | |
| Exiting Leg Total | | | | | 1457 | | | | | 37 | | | | | 695 | | | | | 113 | 2302 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 8:00 AM | L Street | | | | | East 3rd Street | | | | | L Street | | | | | East 3rd Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 8:00 AM | 3 | 101 | 3 | 0 | 107 | 13 | 5 | 3 | 0 | 21 | 1 | 169 | 5 | 1 | 176 | 4 | 0 | 4 | 0 | 8 | 312 |
| 8:15 AM | 7 | 76 | 5 | 2 | 90 | 7 | 3 | 1 | 0 | 11 | 2 | 157 | 2 | 0 | 161 | 4 | 1 | 3 | 0 | 8 | 270 |
| 8:30 AM | 7 | 87 | 3 | 0 | 97 | 5 | 5 | 2 | 0 | 12 | 0 | 176 | 5 | 0 | 181 | 6 | 0 | 4 | 0 | 10 | 300 |
| 8:45 AM | 5 | 85 | 4 | 0 | 94 | 7 | 4 | 1 | 0 | 12 | 3 | 150 | 6 | 2 | 161 | 3 | 0 | 4 | 0 | 7 | 274 |
| Total Volume | 22 | 349 | 15 | 2 | 388 | 32 | 17 | 7 | 0 | 56 | 6 | 652 | 18 | 3 | 679 | 17 | 1 | 15 | 0 | 33 | 1156 |
| % Approach Total | 5.7 | 89.9 | 3.9 | 0.5 | | 57.1 | 30.4 | 12.5 | 0.0 | | 0.9 | 96.0 | 2.7 | 0.4 | | 51.5 | 3.0 | 45.5 | 0.0 | | |
| PHF | 0.786 | 0.864 | 0.750 | 0.250 | 0.907 | 0.615 | 0.850 | 0.583 | 0.000 | 0.667 | 0.500 | 0.926 | 0.750 | 0.375 | 0.938 | 0.708 | 0.250 | 0.938 | 0.000 | 0.825 | 0.926 |
| Entering Leg | 22 | 349 | 15 | 2 | 388 | 32 | 17 | 7 | 0 | 56 | 6 | 652 | 18 | 3 | 679 | 17 | 1 | 15 | 0 | 33 | 1156 |
| Exiting Leg | | | | | 701 | | | | | 22 | | | | | 376 | | | | | 57 | 1156 |
| Total | | | | | 1089 | | | | | 78 | | | | | 1055 | | | | | 90 | 2312 |

PDI File #: **175708 E**
Location: **N: L Street S: L Street**
Location: **E: East 3rd Street W: East 3rd Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Class:

## Heavy Vehicles

| | L Street | | | | | East 3rd Street | | | | | L Street | | | | | East 3rd Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 5 |
| 7:15 AM | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 1 | 7 |
| 7:30 AM | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 6 |
| 7:45 AM | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Total | 0 | 12 | 0 | 0 | 12 | 0 | 1 | 0 | 0 | 1 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 1 | 0 | 1 | 21 |
| 8:00 AM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 1 | 4 |
| 8:15 AM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 3 |
| 8:30 AM | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 5 |
| 8:45 AM | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 |
| Total | 0 | 8 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 1 | 0 | 6 | 1 | 0 | 0 | 0 | 1 | 15 |
| Grand Total | 0 | 20 | 0 | 0 | 20 | 0 | 1 | 0 | 0 | 1 | 0 | 12 | 1 | 0 | 13 | 1 | 0 | 1 | 0 | 2 | 36 |
| Approach % | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 92.3 | 7.7 | 0.0 | | 50.0 | 0.0 | 50.0 | 0.0 | | |
| Total % | 0.0 | 55.6 | 0.0 | 0.0 | 55.6 | 0.0 | 2.8 | 0.0 | 0.0 | 2.8 | 0.0 | 33.3 | 2.8 | 0.0 | 36.1 | 2.8 | 0.0 | 2.8 | 0.0 | 5.6 | |
| Exiting Leg Total | | | | | 13 | | | | | 0 | | | | | 21 | | | | | 2 | 36 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:00 AM | L Street | | | | | East 3rd Street | | | | | L Street | | | | | East 3rd Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 5 |
| 7:15 AM | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 1 | 7 |
| 7:30 AM | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 6 |
| 7:45 AM | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Total Volume | 0 | 12 | 0 | 0 | 12 | 0 | 1 | 0 | 0 | 1 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 1 | 0 | 1 | 21 |
| % Approach Total | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 100.0 | 0.0 | | |
| PHF | 0.000 | 0.750 | 0.000 | 0.000 | 0.750 | 0.000 | 0.250 | 0.000 | 0.000 | 0.250 | 0.000 | 0.583 | 0.000 | 0.000 | 0.583 | 0.000 | 0.000 | 0.250 | 0.000 | 0.250 | 0.750 |
| Entering Leg | 0 | 12 | 0 | 0 | 12 | 0 | 1 | 0 | 0 | 1 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 1 | 0 | 1 | 21 |
| Exiting Leg | | | | | 8 | | | | | 0 | | | | | 12 | | | | | 1 | 21 |
| Total | | | | | 20 | | | | | 1 | | | | | 19 | | | | | 2 | 42 |

PDI File #: **175708 E**
Location: **N: L Street S: L Street**
Location: **E: East 3rd Street W: East 3rd Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Buses

| | L Street | | | | | East 3rd Street | | | | | L Street | | | | | East 3rd Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 5 |
| 7:15 AM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 9 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 6 |
| 7:45 AM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 9 |
| Total | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 0 | 0 | 27 | 0 | 0 | 0 | 0 | 0 | 29 |
| 8:00 AM | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 7 |
| 8:15 AM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 7 |
| 8:30 AM | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 9 |
| 8:45 AM | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 13 |
| Total | 0 | 10 | 1 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 36 |
| Grand Total | 0 | 12 | 1 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 52 | 0 | 0 | 52 | 0 | 0 | 0 | 0 | 0 | 65 |
| Approach % | 0.0 | 92.3 | 7.7 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total % | 0.0 | 18.5 | 1.5 | 0.0 | 20.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 80.0 | 0.0 | 0.0 | 80.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Exiting Leg Total | | | | | 52 | | | | | 1 | | | | | 12 | | | | | 0 | 65 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 8:00 AM | L Street | | | | | East 3rd Street | | | | | L Street | | | | | East 3rd Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 8:00 AM | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 7 |
| 8:15 AM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 7 |
| 8:30 AM | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 9 |
| 8:45 AM | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 13 |
| Total Volume | 0 | 10 | 1 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 36 |
| % Approach Total | 0.0 | 90.9 | 9.1 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | |
| PHF | 0.000 | 0.417 | 0.250 | 0.000 | 0.458 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.893 | 0.000 | 0.000 | 0.893 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.692 |
| Entering Leg | 0 | 10 | 1 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 36 |
| Exiting Leg | | | | | 25 | | | | | 1 | | | | | 10 | | | | | 0 | 36 |
| Total | | | | | 36 | | | | | 1 | | | | | 35 | | | | | 0 | 72 |

PDI File #: **175708 E**
Location: **N: L Street S: L Street**
Location: **E: East 3rd Street W: East 3rd Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Bicycles (on Roadway and Crosswalks)

| | L Street North | | | | | | | East 3rd Street East | | | | | | | L Street South | | | | | | | East 3rd Street West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:00 AM | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 2 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 7:45 AM | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| Total | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 8 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 12 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 4 |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 7 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 9 |
| Grand Total | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 15 | 0 | 0 | 0 | 0 | 15 | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 21 |
| Approach % | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 50.0 | | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 50.0 | 0.0 | 50.0 | 0.0 | | |
| Total % | 0.0 | 9.5 | 0.0 | 0.0 | 0.0 | 0.0 | 9.5 | 4.8 | 0.0 | 0.0 | 0.0 | 0.0 | 4.8 | 9.5 | 0.0 | 71.4 | 0.0 | 0.0 | 0.0 | 0.0 | 71.4 | 0.0 | 0.0 | 4.8 | 0.0 | 4.8 | 0.0 | 9.5 | |
| Exiting Leg Total | | | | | | | 17 | | | | | | | 1 | | | | | | | 2 | | | | | | | 1 | 21 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:00 AM | L Street North | | | | | | | East 3rd Street East | | | | | | | L Street South | | | | | | | East 3rd Street West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:00 AM | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 2 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 7:45 AM | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| Total Volume | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 8 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 12 |
| % Approach Total | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | | |
| PHF | 0.000 | 0.500 | 0.000 | 0.000 | 0.000 | 0.000 | 0.500 | 0.250 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.250 | 0.000 | 0.667 | 0.000 | 0.000 | 0.000 | 0.000 | 0.667 | 0.000 | 0.000 | 0.250 | 0.000 | 0.000 | 0.000 | 0.250 | 0.750 |
| Entering Leg | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 8 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 12 |
| Exiting Leg | | | | | | | 10 | | | | | | | 0 | | | | | | | 2 | | | | | | | 0 | 12 |
| Total | | | | | | | 12 | | | | | | | 1 | | | | | | | 10 | | | | | | | 1 | 24 |

PDI File #: **175708 E**
Location: **N: L Street S: L Street**
Location: **E: East 3rd Street W: East 3rd Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Pedestrians

| | L Street North | | | | | | | East 3rd Street East | | | | | | | L Street South | | | | | | | East 3rd Street West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:00 AM | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 4 | 6 | 0 | 0 | 0 | 0 | 8 | 0 | 8 | 17 |
| 7:15 AM | 0 | 0 | 0 | 0 | 1 | 3 | 4 | 0 | 0 | 0 | 0 | 5 | 5 | 10 | 0 | 0 | 0 | 0 | 1 | 4 | 5 | 0 | 0 | 0 | 0 | 11 | 2 | 13 | 32 |
| 7:30 AM | 0 | 0 | 0 | 0 | 6 | 1 | 7 | 0 | 0 | 0 | 0 | 9 | 7 | 16 | 0 | 0 | 0 | 0 | 4 | 6 | 10 | 0 | 0 | 0 | 0 | 8 | 9 | 17 | 50 |
| 7:45 AM | 0 | 0 | 0 | 0 | 4 | 2 | 6 | 0 | 0 | 0 | 0 | 5 | 6 | 11 | 0 | 0 | 0 | 0 | 3 | 14 | 17 | 0 | 0 | 0 | 0 | 12 | 10 | 22 | 56 |
| Total | 0 | 0 | 0 | 0 | 12 | 7 | 19 | 0 | 0 | 0 | 0 | 20 | 18 | 38 | 0 | 0 | 0 | 0 | 10 | 28 | 38 | 0 | 0 | 0 | 0 | 39 | 21 | 60 | 155 |
| 8:00 AM | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 2 | 5 | 7 | 0 | 0 | 0 | 0 | 1 | 7 | 8 | 0 | 0 | 0 | 0 | 14 | 2 | 16 | 33 |
| 8:15 AM | 0 | 0 | 0 | 0 | 5 | 4 | 9 | 0 | 0 | 0 | 0 | 5 | 7 | 12 | 0 | 0 | 0 | 0 | 1 | 12 | 13 | 0 | 0 | 0 | 0 | 19 | 1 | 20 | 54 |
| 8:30 AM | 0 | 0 | 0 | 0 | 4 | 3 | 7 | 0 | 0 | 0 | 0 | 4 | 6 | 10 | 0 | 0 | 0 | 0 | 1 | 4 | 5 | 0 | 0 | 0 | 0 | 24 | 6 | 30 | 52 |
| 8:45 AM | 0 | 0 | 0 | 0 | 1 | 3 | 4 | 0 | 0 | 0 | 0 | 7 | 10 | 17 | 0 | 0 | 0 | 0 | 3 | 2 | 5 | 0 | 0 | 0 | 0 | 7 | 2 | 9 | 35 |
| Total | 0 | 0 | 0 | 0 | 11 | 11 | 22 | 0 | 0 | 0 | 0 | 18 | 28 | 46 | 0 | 0 | 0 | 0 | 6 | 25 | 31 | 0 | 0 | 0 | 0 | 64 | 11 | 75 | 174 |
| Grand Total | 0 | 0 | 0 | 0 | 23 | 18 | 41 | 0 | 0 | 0 | 0 | 38 | 46 | 84 | 0 | 0 | 0 | 0 | 16 | 53 | 69 | 0 | 0 | 0 | 0 | 103 | 32 | 135 | 329 |
| Approach % | 0.0 | 0.0 | 0.0 | 0.0 | 56.1 | 43.9 | | 0.0 | 0.0 | 0.0 | 0.0 | 45.2 | 54.8 | | 0.0 | 0.0 | 0.0 | 0.0 | 23.2 | 76.8 | | 0.0 | 0.0 | 0.0 | 0.0 | 76.3 | 23.7 | | |
| Total % | 0.0 | 0.0 | 0.0 | 0.0 | 7.0 | 5.5 | 12.5 | 0.0 | 0.0 | 0.0 | 0.0 | 11.6 | 14.0 | 25.5 | 0.0 | 0.0 | 0.0 | 0.0 | 4.9 | 16.1 | 21.0 | 0.0 | 0.0 | 0.0 | 0.0 | 31.3 | 9.7 | 41.0 | |
| Exiting Leg Total | | | | | | | 41 | | | | | | | 84 | | | | | | | 69 | | | | | | | 135 | 329 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:45 AM | L Street North | | | | | | | East 3rd Street East | | | | | | | L Street South | | | | | | | East 3rd Street West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:45 AM | 0 | 0 | 0 | 0 | 4 | 2 | 6 | 0 | 0 | 0 | 0 | 5 | 6 | 11 | 0 | 0 | 0 | 0 | 3 | 14 | 17 | 0 | 0 | 0 | 0 | 12 | 10 | 22 | 56 |
| 8:00 AM | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 2 | 5 | 7 | 0 | 0 | 0 | 0 | 1 | 7 | 8 | 0 | 0 | 0 | 0 | 14 | 2 | 16 | 33 |
| 8:15 AM | 0 | 0 | 0 | 0 | 5 | 4 | 9 | 0 | 0 | 0 | 0 | 5 | 7 | 12 | 0 | 0 | 0 | 0 | 1 | 12 | 13 | 0 | 0 | 0 | 0 | 19 | 1 | 20 | 54 |
| 8:30 AM | 0 | 0 | 0 | 0 | 4 | 3 | 7 | 0 | 0 | 0 | 0 | 4 | 6 | 10 | 0 | 0 | 0 | 0 | 1 | 4 | 5 | 0 | 0 | 0 | 0 | 24 | 6 | 30 | 52 |
| Total Volume | 0 | 0 | 0 | 0 | 14 | 10 | 24 | 0 | 0 | 0 | 0 | 16 | 24 | 40 | 0 | 0 | 0 | 0 | 6 | 37 | 43 | 0 | 0 | 0 | 0 | 69 | 19 | 88 | 195 |
| % Approach Total | 0.0 | 0.0 | 0.0 | 0.0 | 58.3 | 41.7 | | 0.0 | 0.0 | 0.0 | 0.0 | 40.0 | 60.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 14.0 | 86.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 78.4 | 21.6 | | |
| PHF | 0.000 | 0.000 | 0.000 | 0.000 | 0.700 | 0.625 | 0.667 | 0.000 | 0.000 | 0.000 | 0.000 | 0.800 | 0.857 | 0.833 | 0.000 | 0.000 | 0.000 | 0.000 | 0.500 | 0.661 | 0.632 | 0.000 | 0.000 | 0.000 | 0.000 | 0.719 | 0.475 | 0.733 | 0.871 |
| Entering Leg | 0 | 0 | 0 | 0 | 14 | 10 | 24 | 0 | 0 | 0 | 0 | 16 | 24 | 40 | 0 | 0 | 0 | 0 | 6 | 37 | 43 | 0 | 0 | 0 | 0 | 69 | 19 | 88 | 195 |
| Exiting Leg | | | | | | | 24 | | | | | | | 40 | | | | | | | 43 | | | | | | | 88 | 195 |
| Total | | | | | | | 48 | | | | | | | 80 | | | | | | | 86 | | | | | | | 176 | 390 |

PDI File #: **175708 EE**
Location: **N: L Street S: L Street**
Location: **E: East 3rd Street W: East 3rd Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Cars, Heavy Vehicles, and Buses (Combined)

| | L Street | | | | | East 3rd Street | | | | | L Street | | | | | East 3rd Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 2 | 163 | 3 | 0 | 168 | 3 | 1 | 1 | 0 | 5 | 0 | 102 | 5 | 1 | 108 | 5 | 1 | 5 | 0 | 11 | 292 |
| 4:15 PM | 4 | 173 | 1 | 1 | 179 | 1 | 2 | 2 | 0 | 5 | 1 | 109 | 4 | 1 | 115 | 10 | 2 | 4 | 0 | 16 | 315 |
| 4:30 PM | 4 | 188 | 3 | 0 | 195 | 1 | 0 | 0 | 0 | 1 | 0 | 139 | 4 | 1 | 144 | 7 | 3 | 6 | 0 | 16 | 356 |
| 4:45 PM | 3 | 163 | 2 | 0 | 168 | 2 | 3 | 0 | 0 | 5 | 0 | 113 | 1 | 0 | 114 | 10 | 3 | 2 | 0 | 15 | 302 |
| Total | 13 | 687 | 9 | 1 | 710 | 7 | 6 | 3 | 0 | 16 | 1 | 463 | 14 | 3 | 481 | 32 | 9 | 17 | 0 | 58 | 1265 |
| 5:00 PM | 5 | 196 | 5 | 0 | 206 | 2 | 2 | 0 | 0 | 4 | 1 | 157 | 3 | 0 | 161 | 4 | 2 | 1 | 0 | 7 | 378 |
| 5:15 PM | 6 | 178 | 2 | 0 | 186 | 4 | 3 | 0 | 0 | 7 | 0 | 123 | 3 | 0 | 126 | 4 | 2 | 2 | 0 | 8 | 327 |
| 5:30 PM | 5 | 173 | 4 | 1 | 183 | 5 | 3 | 2 | 0 | 10 | 3 | 128 | 4 | 0 | 135 | 4 | 1 | 7 | 0 | 12 | 340 |
| 5:45 PM | 5 | 196 | 5 | 0 | 206 | 2 | 2 | 0 | 0 | 4 | 4 | 124 | 2 | 0 | 130 | 5 | 3 | 8 | 0 | 16 | 356 |
| Total | 21 | 743 | 16 | 1 | 781 | 13 | 10 | 2 | 0 | 25 | 8 | 532 | 12 | 0 | 552 | 17 | 8 | 18 | 0 | 43 | 1401 |
| Grand Total | 34 | 1430 | 25 | 2 | 1491 | 20 | 16 | 5 | 0 | 41 | 9 | 995 | 26 | 3 | 1033 | 49 | 17 | 35 | 0 | 101 | 2666 |
| Approach % | 2.3 | 95.9 | 1.7 | 0.1 | | 48.8 | 39.0 | 12.2 | 0.0 | | 0.9 | 96.3 | 2.5 | 0.3 | | 48.5 | 16.8 | 34.7 | 0.0 | | |
| Total % | 1.3 | 53.6 | 0.9 | 0.1 | 55.9 | 0.8 | 0.6 | 0.2 | 0.0 | 1.5 | 0.3 | 37.3 | 1.0 | 0.1 | 38.7 | 1.8 | 0.6 | 1.3 | 0.0 | 3.8 | |
| Exiting Leg Total | | | | | 1052 | | | | | 51 | | | | | 1487 | | | | | 76 | 2666 |
| Cars | 34 | 1406 | 24 | 2 | 1466 | 20 | 16 | 5 | 0 | 41 | 8 | 982 | 26 | 3 | 1019 | 49 | 15 | 35 | 0 | 99 | 2625 |
| % Cars | 100.0 | 98.3 | 96.0 | 100.0 | 98.3 | 100.0 | 100.0 | 100.0 | 0.0 | 100.0 | 88.9 | 98.7 | 100.0 | 100.0 | 98.6 | 100.0 | 88.2 | 100.0 | 0.0 | 98.0 | 98.5 |
| Exiting Leg Total | | | | | 1039 | | | | | 47 | | | | | 1463 | | | | | 76 | 2625 |
| Heavy Vehicles | 0 | 4 | 1 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 7 | 0 | 0 | 8 | 0 | 1 | 0 | 0 | 1 | 14 |
| % Heavy Vehicles | 0.0 | 0.3 | 4.0 | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 11.1 | 0.7 | 0.0 | 0.0 | 0.8 | 0.0 | 5.9 | 0.0 | 0.0 | 1.0 | 0.5 |
| Exiting Leg Total | | | | | 7 | | | | | 3 | | | | | 4 | | | | | 0 | 14 |
| Buses | 0 | 20 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 6 | 0 | 1 | 0 | 0 | 1 | 27 |
| % Buses | 0.0 | 1.4 | 0.0 | 0.0 | 1.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | 0.0 | 0.0 | 0.6 | 0.0 | 5.9 | 0.0 | 0.0 | 1.0 | 1.0 |
| Exiting Leg Total | | | | | 6 | | | | | 1 | | | | | 20 | | | | | 0 | 27 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 5:00 PM | L Street | | | | | East 3rd Street | | | | | L Street | | | | | East 3rd Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 5:00 PM | 5 | 196 | 5 | 0 | 206 | 2 | 2 | 0 | 0 | 4 | 1 | 157 | 3 | 0 | 161 | 4 | 2 | 1 | 0 | 7 | 378 |
| 5:15 PM | 6 | 178 | 2 | 0 | 186 | 4 | 3 | 0 | 0 | 7 | 0 | 123 | 3 | 0 | 126 | 4 | 2 | 2 | 0 | 8 | 327 |
| 5:30 PM | 5 | 173 | 4 | 1 | 183 | 5 | 3 | 2 | 0 | 10 | 3 | 128 | 4 | 0 | 135 | 4 | 1 | 7 | 0 | 12 | 340 |
| 5:45 PM | 5 | 196 | 5 | 0 | 206 | 2 | 2 | 0 | 0 | 4 | 4 | 124 | 2 | 0 | 130 | 5 | 3 | 8 | 0 | 16 | 356 |
| Total Volume | 21 | 743 | 16 | 1 | 781 | 13 | 10 | 2 | 0 | 25 | 8 | 532 | 12 | 0 | 552 | 17 | 8 | 18 | 0 | 43 | 1401 |
| % Approach Total | 2.7 | 95.1 | 2.0 | 0.1 | | 52.0 | 40.0 | 8.0 | 0.0 | | 1.4 | 96.4 | 2.2 | 0.0 | | 39.5 | 18.6 | 41.9 | 0.0 | | |
| PHF | 0.875 | 0.948 | 0.800 | 0.250 | 0.948 | 0.650 | 0.833 | 0.250 | 0.000 | 0.625 | 0.500 | 0.847 | 0.750 | 0.000 | 0.857 | 0.850 | 0.667 | 0.563 | 0.000 | 0.672 | 0.927 |
| Cars | 21 | 730 | 16 | 1 | 768 | 13 | 10 | 2 | 0 | 25 | 7 | 529 | 12 | 0 | 548 | 17 | 8 | 18 | 0 | 43 | 1384 |
| Cars % | 100.0 | 98.3 | 100.0 | 100.0 | 98.3 | 100.0 | 100.0 | 100.0 | 0.0 | 100.0 | 87.5 | 99.4 | 100.0 | 0.0 | 99.3 | 100.0 | 100.0 | 100.0 | 0.0 | 100.0 | 98.8 |
| Heavy Vehicles | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 5 |
| Heavy Vehicles % | 0.0 | 0.4 | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 12.5 | 0.2 | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 |
| Buses | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 12 |
| Buses % | 0.0 | 1.3 | 0.0 | 0.0 | 1.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.9 |
| Cars Enter Leg | 21 | 730 | 16 | 1 | 768 | 13 | 10 | 2 | 0 | 25 | 7 | 529 | 12 | 0 | 548 | 17 | 8 | 18 | 0 | 43 | 1384 |
| Heavy Enter Leg | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 5 |
| Bus Enter Leg | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 12 |
| Total Entering Leg | 21 | 743 | 16 | 1 | 781 | 13 | 10 | 2 | 0 | 25 | 8 | 532 | 12 | 0 | 552 | 17 | 8 | 18 | 0 | 43 | 1401 |
| Cars Exiting Leg | | | | | 561 | | | | | 31 | | | | | 749 | | | | | 43 | 1384 |
| Heavy Exiting Leg | | | | | 1 | | | | | 1 | | | | | 3 | | | | | 0 | 5 |
| Buses Exiting Leg | | | | | 2 | | | | | 0 | | | | | 10 | | | | | 0 | 12 |
| Total Exiting Leg | | | | | 564 | | | | | 32 | | | | | 762 | | | | | 43 | 1401 |

PDI File #: **175708 EE**
Location: **N: L Street S: L Street**
Location: **E: East 3rd Street W: East 3rd Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Cars

| | L Street | | | | | East 3rd Street | | | | | L Street | | | | | East 3rd Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 2 | 162 | 2 | 0 | 166 | 3 | 1 | 1 | 0 | 5 | 0 | 99 | 5 | 1 | 105 | 5 | 1 | 5 | 0 | 11 | 287 |
| 4:15 PM | 4 | 170 | 1 | 1 | 176 | 1 | 2 | 2 | 0 | 5 | 1 | 105 | 4 | 1 | 111 | 10 | 1 | 4 | 0 | 15 | 307 |
| 4:30 PM | 4 | 186 | 3 | 0 | 193 | 1 | 0 | 0 | 0 | 1 | 0 | 139 | 4 | 1 | 144 | 7 | 2 | 6 | 0 | 15 | 353 |
| 4:45 PM | 3 | 158 | 2 | 0 | 163 | 2 | 3 | 0 | 0 | 5 | 0 | 110 | 1 | 0 | 111 | 10 | 3 | 2 | 0 | 15 | 294 |
| Total | 13 | 676 | 8 | 1 | 698 | 7 | 6 | 3 | 0 | 16 | 1 | 453 | 14 | 3 | 471 | 32 | 7 | 17 | 0 | 56 | 1241 |
| 5:00 PM | 5 | 193 | 5 | 0 | 203 | 2 | 2 | 0 | 0 | 4 | 1 | 156 | 3 | 0 | 160 | 4 | 2 | 1 | 0 | 7 | 374 |
| 5:15 PM | 6 | 176 | 2 | 0 | 184 | 4 | 3 | 0 | 0 | 7 | 0 | 122 | 3 | 0 | 125 | 4 | 2 | 2 | 0 | 8 | 324 |
| 5:30 PM | 5 | 170 | 4 | 1 | 180 | 5 | 3 | 2 | 0 | 10 | 2 | 127 | 4 | 0 | 133 | 4 | 1 | 7 | 0 | 12 | 335 |
| 5:45 PM | 5 | 191 | 5 | 0 | 201 | 2 | 2 | 0 | 0 | 4 | 4 | 124 | 2 | 0 | 130 | 5 | 3 | 8 | 0 | 16 | 351 |
| Total | 21 | 730 | 16 | 1 | 768 | 13 | 10 | 2 | 0 | 25 | 7 | 529 | 12 | 0 | 548 | 17 | 8 | 18 | 0 | 43 | 1384 |
| Grand Total | 34 | 1406 | 24 | 2 | 1466 | 20 | 16 | 5 | 0 | 41 | 8 | 982 | 26 | 3 | 1019 | 49 | 15 | 35 | 0 | 99 | 2625 |
| Approach % | 2.3 | 95.9 | 1.6 | 0.1 | | 48.8 | 39.0 | 12.2 | 0.0 | | 0.8 | 96.4 | 2.6 | 0.3 | | 49.5 | 15.2 | 35.4 | 0.0 | | |
| Total % | 1.3 | 53.6 | 0.9 | 0.1 | 55.8 | 0.8 | 0.6 | 0.2 | 0.0 | 1.6 | 0.3 | 37.4 | 1.0 | 0.1 | 38.8 | 1.9 | 0.6 | 1.3 | 0.0 | 3.8 | |
| Exiting Leg Total | | | | | 1039 | | | | | 47 | | | | | 1463 | | | | | 76 | 2625 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 5:00 PM | L Street | | | | | East 3rd Street | | | | | L Street | | | | | East 3rd Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 5:00 PM | 5 | 193 | 5 | 0 | 203 | 2 | 2 | 0 | 0 | 4 | 1 | 156 | 3 | 0 | 160 | 4 | 2 | 1 | 0 | 7 | 374 |
| 5:15 PM | 6 | 176 | 2 | 0 | 184 | 4 | 3 | 0 | 0 | 7 | 0 | 122 | 3 | 0 | 125 | 4 | 2 | 2 | 0 | 8 | 324 |
| 5:30 PM | 5 | 170 | 4 | 1 | 180 | 5 | 3 | 2 | 0 | 10 | 2 | 127 | 4 | 0 | 133 | 4 | 1 | 7 | 0 | 12 | 335 |
| 5:45 PM | 5 | 191 | 5 | 0 | 201 | 2 | 2 | 0 | 0 | 4 | 4 | 124 | 2 | 0 | 130 | 5 | 3 | 8 | 0 | 16 | 351 |
| Total Volume | 21 | 730 | 16 | 1 | 768 | 13 | 10 | 2 | 0 | 25 | 7 | 529 | 12 | 0 | 548 | 17 | 8 | 18 | 0 | 43 | 1384 |
| % Approach Total | 2.7 | 95.1 | 2.1 | 0.1 | | 52.0 | 40.0 | 8.0 | 0.0 | | 1.3 | 96.5 | 2.2 | 0.0 | | 39.5 | 18.6 | 41.9 | 0.0 | | |
| PHF | 0.875 | 0.946 | 0.800 | 0.250 | 0.946 | 0.650 | 0.833 | 0.250 | 0.000 | 0.625 | 0.438 | 0.848 | 0.750 | 0.000 | 0.856 | 0.850 | 0.667 | 0.563 | 0.000 | 0.672 | 0.925 |
| Entering Leg | 21 | 730 | 16 | 1 | 768 | 13 | 10 | 2 | 0 | 25 | 7 | 529 | 12 | 0 | 548 | 17 | 8 | 18 | 0 | 43 | 1384 |
| Exiting Leg | | | | | 561 | | | | | 31 | | | | | 749 | | | | | 43 | 1384 |
| Total | | | | | 1329 | | | | | 56 | | | | | 1297 | | | | | 86 | 2768 |

PDI File #: **175708 EE**
Location: **N: L Street S: L Street**
Location: **E: East 3rd Street W: East 3rd Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Heavy Vehicles

| | L Street | | | | | East 3rd Street | | | | | L Street | | | | | East 3rd Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 4 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 |
| 4:45 PM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| Total | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 6 | 0 | 1 | 0 | 0 | 1 | 9 |
| 5:00 PM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 |
| 5:45 PM | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Total | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 5 |
| Grand Total | 0 | 4 | 1 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 7 | 0 | 0 | 8 | 0 | 1 | 0 | 0 | 1 | 14 |
| Approach % | 0.0 | 80.0 | 20.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | 12.5 | 87.5 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | |
| Total % | 0.0 | 28.6 | 7.1 | 0.0 | 35.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 7.1 | 50.0 | 0.0 | 0.0 | 57.1 | 0.0 | 7.1 | 0.0 | 0.0 | 7.1 | |
| Exiting Leg Total | | | | | 7 | | | | | 3 | | | | | 4 | | | | | 0 | 14 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:00 PM | L Street | | | | | East 3rd Street | | | | | L Street | | | | | East 3rd Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 4 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 |
| 4:45 PM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| Total Volume | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 6 | 0 | 1 | 0 | 0 | 1 | 9 |
| % Approach Total | 0.0 | 50.0 | 50.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | |
| PHF | 0.000 | 0.250 | 0.250 | 0.000 | 0.500 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.375 | 0.000 | 0.000 | 0.375 | 0.000 | 0.250 | 0.000 | 0.000 | 0.250 | 0.563 |
| Entering Leg | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 6 | 0 | 1 | 0 | 0 | 1 | 9 |
| Exiting Leg | | | | | 6 | | | | | 2 | | | | | 1 | | | | | 0 | 9 |
| Total | | | | | 8 | | | | | 2 | | | | | 7 | | | | | 1 | 18 |

PDI File #: **175708 EE**
Location: **N: L Street S: L Street**
Location: **E: East 3rd Street W: East 3rd Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Buses

| | L Street | | | | | East 3rd Street | | | | | L Street | | | | | East 3rd Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 3 |
| 4:15 PM | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 4 |
| 4:30 PM | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 4:45 PM | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 6 |
| Total | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 1 | 0 | 0 | 1 | 15 |
| 5:00 PM | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 |
| 5:15 PM | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 |
| 5:30 PM | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 5:45 PM | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Total | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 12 |
| Grand Total | 0 | 20 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 6 | 0 | 1 | 0 | 0 | 1 | 27 |
| Approach % | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | |
| Total % | 0.0 | 74.1 | 0.0 | 0.0 | 74.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 22.2 | 0.0 | 0.0 | 22.2 | 0.0 | 3.7 | 0.0 | 0.0 | 3.7 | |
| Exiting Leg Total | | | | | 6 | | | | | 1 | | | | | 20 | | | | | 0 | 27 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:00 PM | L Street | | | | | East 3rd Street | | | | | L Street | | | | | East 3rd Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 3 |
| 4:15 PM | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 4 |
| 4:30 PM | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 4:45 PM | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 6 |
| Total Volume | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 1 | 0 | 0 | 1 | 15 |
| % Approach Total | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | |
| PHF | 0.000 | 0.625 | 0.000 | 0.000 | 0.625 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.500 | 0.000 | 0.000 | 0.500 | 0.000 | 0.250 | 0.000 | 0.000 | 0.250 | 0.625 |
| Entering Leg | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 1 | 0 | 0 | 1 | 15 |
| Exiting Leg | | | | | 4 | | | | | 1 | | | | | 10 | | | | | 0 | 15 |
| Total | | | | | 14 | | | | | 1 | | | | | 14 | | | | | 1 | 30 |

PDI File #: **175708 EE**
Location: **N: L Street S: L Street**
Location: **E: East 3rd Street W: East 3rd Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Bicycles (on Roadway and Crosswalks)

| | L Street | | | | | | | East 3rd Street | | | | | | | L Street | | | | | | | East 3rd Street | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | East | | | | | | | South | | | | | | | West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 |
| 4:15 PM | 0 | 4 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 4:30 PM | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 2 |
| 4:45 PM | 0 | 6 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| Total | 0 | 11 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 1 | 2 | 15 |
| 5:00 PM | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 |
| 5:15 PM | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 4 |
| 5:30 PM | 1 | 6 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 5:45 PM | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Total | 1 | 14 | 0 | 0 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 2 | 17 |
| Grand Total | 1 | 25 | 0 | 0 | 0 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 2 | 4 | 32 |
| Approach % | 3.8 | 96.2 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 50.0 | 0.0 | 0.0 | 0.0 | 50.0 | | |
| Total % | 3.1 | 78.1 | 0.0 | 0.0 | 0.0 | 0.0 | 81.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 6.3 | 0.0 | 0.0 | 0.0 | 0.0 | 6.3 | 0.0 | 6.3 | 0.0 | 0.0 | 0.0 | 6.3 | 12.5 | |
| Exiting Leg Total | | | | | | | 2 | | | | | | | 2 | | | | | | | 25 | | | | | | | 3 | 32 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:45 PM | L Street | | | | | | | East 3rd Street | | | | | | | L Street | | | | | | | East 3rd Street | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | East | | | | | | | South | | | | | | | West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 4:45 PM | 0 | 6 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 5:00 PM | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 |
| 5:15 PM | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 4 |
| 5:30 PM | 1 | 6 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| Total Volume | 1 | 17 | 0 | 0 | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 2 | 20 |
| % Approach Total | 5.6 | 94.4 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 50.0 | 0.0 | 0.0 | 0.0 | 50.0 | | |
| PHF | 0.250 | 0.708 | 0.000 | 0.000 | 0.000 | 0.000 | 0.643 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.250 | 0.000 | 0.000 | 0.000 | 0.250 | 0.500 | 0.714 |
| Entering Leg | 1 | 17 | 0 | 0 | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 2 | 20 |
| Exiting Leg | | | | | | | 0 | | | | | | | 1 | | | | | | | 17 | | | | | | | 2 | 20 |
| Total | | | | | | | 18 | | | | | | | 1 | | | | | | | 17 | | | | | | | 4 | 40 |

PDI File #: **175708 EE**
Location: **N: L Street S: L Street**
Location: **E: East 3rd Street W: East 3rd Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Pedestrians

| | L Street | | | | | | | East 3rd Street | | | | | | | L Street | | | | | | | East 3rd Street | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | East | | | | | | | South | | | | | | | West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 1 | 5 | 6 | 0 | 0 | 0 | 0 | 1 | 3 | 4 | 0 | 0 | 0 | 0 | 1 | 4 | 5 | 17 |
| 4:15 PM | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 5 | 4 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 7 | 15 | 25 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 4 | 12 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 4 | 7 | 11 | 24 |
| 4:45 PM | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 5 | 3 | 8 | 0 | 0 | 0 | 0 | 3 | 1 | 4 | 0 | 0 | 0 | 0 | 5 | 5 | 10 | 24 |
| Total | 0 | 0 | 0 | 0 | 3 | 2 | 5 | 0 | 0 | 0 | 0 | 19 | 16 | 35 | 0 | 0 | 0 | 0 | 4 | 5 | 9 | 0 | 0 | 0 | 0 | 18 | 23 | 41 | 90 |
| 5:00 PM | 0 | 0 | 0 | 0 | 5 | 1 | 6 | 0 | 0 | 0 | 0 | 9 | 3 | 12 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 3 | 11 | 14 | 33 |
| 5:15 PM | 0 | 0 | 0 | 0 | 1 | 3 | 4 | 0 | 0 | 0 | 0 | 9 | 5 | 14 | 0 | 0 | 0 | 0 | 3 | 4 | 7 | 0 | 0 | 0 | 0 | 10 | 18 | 28 | 53 |
| 5:30 PM | 0 | 0 | 0 | 0 | 4 | 1 | 5 | 0 | 0 | 0 | 0 | 10 | 8 | 18 | 0 | 0 | 0 | 0 | 3 | 9 | 12 | 0 | 0 | 0 | 0 | 5 | 27 | 32 | 67 |
| 5:45 PM | 0 | 0 | 0 | 0 | 6 | 2 | 8 | 0 | 0 | 0 | 0 | 16 | 10 | 26 | 0 | 0 | 0 | 0 | 2 | 5 | 7 | 0 | 0 | 0 | 0 | 5 | 38 | 43 | 84 |
| Total | 0 | 0 | 0 | 0 | 16 | 7 | 23 | 0 | 0 | 0 | 0 | 44 | 26 | 70 | 0 | 0 | 0 | 0 | 8 | 19 | 27 | 0 | 0 | 0 | 0 | 23 | 94 | 117 | 237 |
| Grand Total | 0 | 0 | 0 | 0 | 19 | 9 | 28 | 0 | 0 | 0 | 0 | 63 | 42 | 105 | 0 | 0 | 0 | 0 | 12 | 24 | 36 | 0 | 0 | 0 | 0 | 41 | 117 | 158 | 327 |
| Approach % | 0.0 | 0.0 | 0.0 | 0.0 | 67.9 | 32.1 | | 0.0 | 0.0 | 0.0 | 0.0 | 60.0 | 40.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 33.3 | 66.7 | | 0.0 | 0.0 | 0.0 | 0.0 | 25.9 | 74.1 | | |
| Total % | 0.0 | 0.0 | 0.0 | 0.0 | 5.8 | 2.8 | 8.6 | 0.0 | 0.0 | 0.0 | 0.0 | 19.3 | 12.8 | 32.1 | 0.0 | 0.0 | 0.0 | 0.0 | 3.7 | 7.3 | 11.0 | 0.0 | 0.0 | 0.0 | 0.0 | 12.5 | 35.8 | 48.3 | |
| Exiting Leg Total | | | | | | | 28 | | | | | | | 105 | | | | | | | 36 | | | | | | | 158 | 327 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 5:00 PM | L Street | | | | | | | East 3rd Street | | | | | | | L Street | | | | | | | East 3rd Street | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | East | | | | | | | South | | | | | | | West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 5:00 PM | 0 | 0 | 0 | 0 | 5 | 1 | 6 | 0 | 0 | 0 | 0 | 9 | 3 | 12 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 3 | 11 | 14 | 33 |
| 5:15 PM | 0 | 0 | 0 | 0 | 1 | 3 | 4 | 0 | 0 | 0 | 0 | 9 | 5 | 14 | 0 | 0 | 0 | 0 | 3 | 4 | 7 | 0 | 0 | 0 | 0 | 10 | 18 | 28 | 53 |
| 5:30 PM | 0 | 0 | 0 | 0 | 4 | 1 | 5 | 0 | 0 | 0 | 0 | 10 | 8 | 18 | 0 | 0 | 0 | 0 | 3 | 9 | 12 | 0 | 0 | 0 | 0 | 5 | 27 | 32 | 67 |
| 5:45 PM | 0 | 0 | 0 | 0 | 6 | 2 | 8 | 0 | 0 | 0 | 0 | 16 | 10 | 26 | 0 | 0 | 0 | 0 | 2 | 5 | 7 | 0 | 0 | 0 | 0 | 5 | 38 | 43 | 84 |
| Total Volume | 0 | 0 | 0 | 0 | 16 | 7 | 23 | 0 | 0 | 0 | 0 | 44 | 26 | 70 | 0 | 0 | 0 | 0 | 8 | 19 | 27 | 0 | 0 | 0 | 0 | 23 | 94 | 117 | 237 |
| % Approach Total | 0.0 | 0.0 | 0.0 | 0.0 | 69.6 | 30.4 | | 0.0 | 0.0 | 0.0 | 0.0 | 62.9 | 37.1 | | 0.0 | 0.0 | 0.0 | 0.0 | 29.6 | 70.4 | | 0.0 | 0.0 | 0.0 | 0.0 | 19.7 | 80.3 | | |
| PHF | 0.000 | 0.000 | 0.000 | 0.000 | 0.667 | 0.583 | 0.719 | 0.000 | 0.000 | 0.000 | 0.000 | 0.688 | 0.650 | 0.673 | 0.000 | 0.000 | 0.000 | 0.000 | 0.667 | 0.528 | 0.563 | 0.000 | 0.000 | 0.000 | 0.000 | 0.575 | 0.618 | 0.680 | 0.705 |
| Entering Leg | 0 | 0 | 0 | 0 | 16 | 7 | 23 | 0 | 0 | 0 | 0 | 44 | 26 | 70 | 0 | 0 | 0 | 0 | 8 | 19 | 27 | 0 | 0 | 0 | 0 | 23 | 94 | 117 | 237 |
| Exiting Leg | | | | | | | 23 | | | | | | | 70 | | | | | | | 27 | | | | | | | 117 | 237 |
| Total | | | | | | | 46 | | | | | | | 140 | | | | | | | 54 | | | | | | | 234 | 474 |

PDI File #: **175708 F**
Location: **N: L Street S: L Street**
Location: **E: East Broadway W: East Broadway**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Cars, Heavy Vehicles, and Buses (Combined)

| | L Street | | | | | East Broadway | | | | | L Street | | | | | East Broadway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 25 | 58 | 13 | 0 | 96 | 16 | 24 | 5 | 0 | 45 | 2 | 169 | 14 | 0 | 185 | 12 | 22 | 24 | 0 | 58 | 384 |
| 7:15 AM | 17 | 44 | 5 | 0 | 66 | 20 | 26 | 4 | 0 | 50 | 5 | 128 | 8 | 0 | 141 | 10 | 15 | 42 | 0 | 67 | 324 |
| 7:30 AM | 26 | 45 | 10 | 0 | 81 | 16 | 28 | 2 | 0 | 46 | 5 | 146 | 15 | 0 | 166 | 14 | 20 | 33 | 0 | 67 | 360 |
| 7:45 AM | 23 | 48 | 11 | 0 | 82 | 15 | 32 | 5 | 0 | 52 | 3 | 127 | 13 | 0 | 143 | 5 | 36 | 28 | 0 | 69 | 346 |
| Total | 91 | 195 | 39 | 0 | 325 | 67 | 110 | 16 | 0 | 193 | 15 | 570 | 50 | 0 | 635 | 41 | 93 | 127 | 0 | 261 | 1414 |
| 8:00 AM | 20 | 72 | 19 | 0 | 111 | 14 | 32 | 13 | 0 | 59 | 1 | 154 | 16 | 0 | 171 | 9 | 29 | 16 | 0 | 54 | 395 |
| 8:15 AM | 15 | 58 | 9 | 1 | 83 | 11 | 41 | 6 | 0 | 58 | 4 | 140 | 16 | 0 | 160 | 15 | 18 | 17 | 0 | 50 | 351 |
| 8:30 AM | 27 | 58 | 8 | 0 | 93 | 20 | 36 | 6 | 0 | 62 | 5 | 143 | 15 | 0 | 163 | 9 | 26 | 21 | 1 | 57 | 375 |
| 8:45 AM | 22 | 58 | 12 | 0 | 92 | 10 | 45 | 6 | 0 | 61 | 2 | 133 | 19 | 0 | 154 | 12 | 23 | 27 | 0 | 62 | 369 |
| Total | 84 | 246 | 48 | 1 | 379 | 55 | 154 | 31 | 0 | 240 | 12 | 570 | 66 | 0 | 648 | 45 | 96 | 81 | 1 | 223 | 1490 |
| Grand Total | 175 | 441 | 87 | 1 | 704 | 122 | 264 | 47 | 0 | 433 | 27 | 1140 | 116 | 0 | 1283 | 86 | 189 | 208 | 1 | 484 | 2904 |
| Approach % | 24.9 | 62.6 | 12.4 | 0.1 | | 28.2 | 61.0 | 10.9 | 0.0 | | 2.1 | 88.9 | 9.0 | 0.0 | | 17.8 | 39.0 | 43.0 | 0.2 | | |
| Total % | 6.0 | 15.2 | 3.0 | 0.0 | 24.2 | 4.2 | 9.1 | 1.6 | 0.0 | 14.9 | 0.9 | 39.3 | 4.0 | 0.0 | 44.2 | 3.0 | 6.5 | 7.2 | 0.0 | 16.7 | |
| Exiting Leg Total | | | | | 1471 | | | | | 303 | | | | | 574 | | | | | 556 | 2904 |
| Cars | 159 | 431 | 84 | 1 | 675 | 91 | 232 | 44 | 0 | 367 | 26 | 1132 | 110 | 0 | 1268 | 83 | 174 | 182 | 0 | 439 | 2749 |
| % Cars | 90.9 | 97.7 | 96.6 | 100.0 | 95.9 | 74.6 | 87.9 | 93.6 | 0.0 | 84.8 | 96.3 | 99.3 | 94.8 | 0.0 | 98.8 | 96.5 | 92.1 | 87.5 | 0.0 | 90.7 | 94.7 |
| Exiting Leg Total | | | | | 1406 | | | | | 284 | | | | | 558 | | | | | 501 | 2749 |
| Heavy Vehicles | 11 | 5 | 2 | 0 | 18 | 2 | 7 | 3 | 0 | 12 | 1 | 2 | 3 | 0 | 6 | 2 | 6 | 8 | 1 | 17 | 53 |
| % Heavy Vehicles | 6.3 | 1.1 | 2.3 | 0.0 | 2.6 | 1.6 | 2.7 | 6.4 | 0.0 | 2.8 | 3.7 | 0.2 | 2.6 | 0.0 | 0.5 | 2.3 | 3.2 | 3.8 | 100.0 | 3.5 | 1.8 |
| Exiting Leg Total | | | | | 12 | | | | | 9 | | | | | 10 | | | | | 22 | 53 |
| Buses | 5 | 5 | 1 | 0 | 11 | 29 | 25 | 0 | 0 | 54 | 0 | 6 | 3 | 0 | 9 | 1 | 9 | 18 | 0 | 28 | 102 |
| % Buses | 2.9 | 1.1 | 1.1 | 0.0 | 1.6 | 23.8 | 9.5 | 0.0 | 0.0 | 12.5 | 0.0 | 0.5 | 2.6 | 0.0 | 0.7 | 1.2 | 4.8 | 8.7 | 0.0 | 5.8 | 3.5 |
| Exiting Leg Total | | | | | 53 | | | | | 10 | | | | | 6 | | | | | 33 | 102 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 8:00 AM | L Street | | | | | East Broadway | | | | | L Street | | | | | East Broadway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 8:00 AM | 20 | 72 | 19 | 0 | 111 | 14 | 32 | 13 | 0 | 59 | 1 | 154 | 16 | 0 | 171 | 9 | 29 | 16 | 0 | 54 | 395 |
| 8:15 AM | 15 | 58 | 9 | 1 | 83 | 11 | 41 | 6 | 0 | 58 | 4 | 140 | 16 | 0 | 160 | 15 | 18 | 17 | 0 | 50 | 351 |
| 8:30 AM | 27 | 58 | 8 | 0 | 93 | 20 | 36 | 6 | 0 | 62 | 5 | 143 | 15 | 0 | 163 | 9 | 26 | 21 | 1 | 57 | 375 |
| 8:45 AM | 22 | 58 | 12 | 0 | 92 | 10 | 45 | 6 | 0 | 61 | 2 | 133 | 19 | 0 | 154 | 12 | 23 | 27 | 0 | 62 | 369 |
| Total Volume | 84 | 246 | 48 | 1 | 379 | 55 | 154 | 31 | 0 | 240 | 12 | 570 | 66 | 0 | 648 | 45 | 96 | 81 | 1 | 223 | 1490 |
| % Approach Total | 22.2 | 64.9 | 12.7 | 0.3 | | 22.9 | 64.2 | 12.9 | 0.0 | | 1.9 | 88.0 | 10.2 | 0.0 | | 20.2 | 43.0 | 36.3 | 0.4 | | |
| PHF | 0.778 | 0.854 | 0.632 | 0.250 | 0.854 | 0.688 | 0.856 | 0.596 | 0.000 | 0.968 | 0.600 | 0.925 | 0.868 | 0.000 | 0.947 | 0.750 | 0.828 | 0.750 | 0.250 | 0.899 | 0.943 |
| Cars | 76 | 238 | 47 | 1 | 362 | 41 | 139 | 29 | 0 | 209 | 12 | 566 | 64 | 0 | 642 | 45 | 89 | 68 | 0 | 202 | 1415 |
| Cars % | 90.5 | 96.7 | 97.9 | 100.0 | 95.5 | 74.5 | 90.3 | 93.5 | 0.0 | 87.1 | 100.0 | 99.3 | 97.0 | 0.0 | 99.1 | 100.0 | 92.7 | 84.0 | 0.0 | 90.6 | 95.0 |
| Heavy Vehicles | 5 | 3 | 0 | 0 | 8 | 0 | 4 | 2 | 0 | 6 | 0 | 1 | 0 | 0 | 1 | 0 | 2 | 5 | 1 | 8 | 23 |
| Heavy Vehicles % | 6.0 | 1.2 | 0.0 | 0.0 | 2.1 | 0.0 | 2.6 | 6.5 | 0.0 | 2.5 | 0.0 | 0.2 | 0.0 | 0.0 | 0.2 | 0.0 | 2.1 | 6.2 | 100.0 | 3.6 | 1.5 |
| Buses | 3 | 5 | 1 | 0 | 9 | 14 | 11 | 0 | 0 | 25 | 0 | 3 | 2 | 0 | 5 | 0 | 5 | 8 | 0 | 13 | 52 |
| Buses % | 3.6 | 2.0 | 2.1 | 0.0 | 2.4 | 25.5 | 7.1 | 0.0 | 0.0 | 10.4 | 0.0 | 0.5 | 3.0 | 0.0 | 0.8 | 0.0 | 5.2 | 9.9 | 0.0 | 5.8 | 3.5 |
| Cars Enter Leg | 76 | 238 | 47 | 1 | 362 | 41 | 139 | 29 | 0 | 209 | 12 | 566 | 64 | 0 | 642 | 45 | 89 | 68 | 0 | 202 | 1415 |
| Heavy Enter Leg | 5 | 3 | 0 | 0 | 8 | 0 | 4 | 2 | 0 | 6 | 0 | 1 | 0 | 0 | 1 | 0 | 2 | 5 | 1 | 8 | 23 |
| Bus Enter Leg | 3 | 5 | 1 | 0 | 9 | 14 | 11 | 0 | 0 | 25 | 0 | 3 | 2 | 0 | 5 | 0 | 5 | 8 | 0 | 13 | 52 |
| Total Entering Leg | 84 | 246 | 48 | 1 | 379 | 55 | 154 | 31 | 0 | 240 | 12 | 570 | 66 | 0 | 648 | 45 | 96 | 81 | 1 | 223 | 1490 |
| Cars Exiting Leg | | | | | 676 | | | | | 148 | | | | | 312 | | | | | 279 | 1415 |
| Heavy Exiting Leg | | | | | 6 | | | | | 2 | | | | | 5 | | | | | 10 | 23 |
| Buses Exiting Leg | | | | | 25 | | | | | 6 | | | | | 5 | | | | | 16 | 52 |
| Total Exiting Leg | | | | | 707 | | | | | 156 | | | | | 322 | | | | | 305 | 1490 |

PDI File #: **175708 F**
Location: **N: L Street S: L Street**
Location: **E: East Broadway W: East Broadway**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Cars

| | L Street | | | | | East Broadway | | | | | L Street | | | | | East Broadway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 24 | 57 | 12 | 0 | 93 | 13 | 19 | 5 | 0 | 37 | 2 | 168 | 13 | 0 | 183 | 11 | 19 | 21 | 0 | 51 | 364 |
| 7:15 AM | 14 | 44 | 4 | 0 | 62 | 15 | 22 | 4 | 0 | 41 | 5 | 127 | 7 | 0 | 139 | 9 | 14 | 38 | 0 | 61 | 303 |
| 7:30 AM | 23 | 45 | 10 | 0 | 78 | 10 | 25 | 2 | 0 | 37 | 4 | 145 | 15 | 0 | 164 | 14 | 20 | 31 | 0 | 65 | 344 |
| 7:45 AM | 22 | 47 | 11 | 0 | 80 | 12 | 27 | 4 | 0 | 43 | 3 | 126 | 11 | 0 | 140 | 4 | 32 | 24 | 0 | 60 | 323 |
| Total | 83 | 193 | 37 | 0 | 313 | 50 | 93 | 15 | 0 | 158 | 14 | 566 | 46 | 0 | 626 | 38 | 85 | 114 | 0 | 237 | 1334 |
| 8:00 AM | 17 | 72 | 19 | 0 | 108 | 11 | 29 | 12 | 0 | 52 | 1 | 152 | 16 | 0 | 169 | 9 | 28 | 14 | 0 | 51 | 380 |
| 8:15 AM | 15 | 57 | 8 | 1 | 81 | 9 | 38 | 5 | 0 | 52 | 4 | 138 | 16 | 0 | 158 | 15 | 17 | 14 | 0 | 46 | 337 |
| 8:30 AM | 23 | 57 | 8 | 0 | 88 | 14 | 32 | 6 | 0 | 52 | 5 | 143 | 13 | 0 | 161 | 9 | 24 | 17 | 0 | 50 | 351 |
| 8:45 AM | 21 | 52 | 12 | 0 | 85 | 7 | 40 | 6 | 0 | 53 | 2 | 133 | 19 | 0 | 154 | 12 | 20 | 23 | 0 | 55 | 347 |
| Total | 76 | 238 | 47 | 1 | 362 | 41 | 139 | 29 | 0 | 209 | 12 | 566 | 64 | 0 | 642 | 45 | 89 | 68 | 0 | 202 | 1415 |
| Grand Total | 159 | 431 | 84 | 1 | 675 | 91 | 232 | 44 | 0 | 367 | 26 | 1132 | 110 | 0 | 1268 | 83 | 174 | 182 | 0 | 439 | 2749 |
| Approach % | 23.6 | 63.9 | 12.4 | 0.1 | | 24.8 | 63.2 | 12.0 | 0.0 | | 2.1 | 89.3 | 8.7 | 0.0 | | 18.9 | 39.6 | 41.5 | 0.0 | | |
| Total % | 5.8 | 15.7 | 3.1 | 0.0 | 24.6 | 3.3 | 8.4 | 1.6 | 0.0 | 13.4 | 0.9 | 41.2 | 4.0 | 0.0 | 46.1 | 3.0 | 6.3 | 6.6 | 0.0 | 16.0 | |
| Exiting Leg Total | | | | | 1406 | | | | | 284 | | | | | 558 | | | | | 501 | 2749 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 8:00 AM | L Street | | | | | East Broadway | | | | | L Street | | | | | East Broadway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 8:00 AM | 17 | 72 | 19 | 0 | 108 | 11 | 29 | 12 | 0 | 52 | 1 | 152 | 16 | 0 | 169 | 9 | 28 | 14 | 0 | 51 | 380 |
| 8:15 AM | 15 | 57 | 8 | 1 | 81 | 9 | 38 | 5 | 0 | 52 | 4 | 138 | 16 | 0 | 158 | 15 | 17 | 14 | 0 | 46 | 337 |
| 8:30 AM | 23 | 57 | 8 | 0 | 88 | 14 | 32 | 6 | 0 | 52 | 5 | 143 | 13 | 0 | 161 | 9 | 24 | 17 | 0 | 50 | 351 |
| 8:45 AM | 21 | 52 | 12 | 0 | 85 | 7 | 40 | 6 | 0 | 53 | 2 | 133 | 19 | 0 | 154 | 12 | 20 | 23 | 0 | 55 | 347 |
| Total Volume | 76 | 238 | 47 | 1 | 362 | 41 | 139 | 29 | 0 | 209 | 12 | 566 | 64 | 0 | 642 | 45 | 89 | 68 | 0 | 202 | 1415 |
| % Approach Total | 21.0 | 65.7 | 13.0 | 0.3 | | 19.6 | 66.5 | 13.9 | 0.0 | | 1.9 | 88.2 | 10.0 | 0.0 | | 22.3 | 44.1 | 33.7 | 0.0 | | |
| PHF | 0.826 | 0.826 | 0.618 | 0.250 | 0.838 | 0.732 | 0.869 | 0.604 | 0.000 | 0.986 | 0.600 | 0.931 | 0.842 | 0.000 | 0.950 | 0.750 | 0.795 | 0.739 | 0.000 | 0.918 | 0.931 |
| Entering Leg | 76 | 238 | 47 | 1 | 362 | 41 | 139 | 29 | 0 | 209 | 12 | 566 | 64 | 0 | 642 | 45 | 89 | 68 | 0 | 202 | 1415 |
| Exiting Leg | | | | | 676 | | | | | 148 | | | | | 312 | | | | | 279 | 1415 |
| Total | | | | | 1038 | | | | | 357 | | | | | 954 | | | | | 481 | 2830 |

PDI File #: **175708 F**
Location: **N: L Street S: L Street**
Location: **E: East Broadway W: East Broadway**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Heavy Vehicles

| | L Street | | | | | East Broadway | | | | | L Street | | | | | East Broadway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 1 | 1 | 1 | 0 | 3 | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 2 | 1 | 2 | 1 | 0 | 4 | 11 |
| 7:15 AM | 3 | 0 | 1 | 0 | 4 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 7 |
| 7:30 AM | 2 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 5 |
| 7:45 AM | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 1 | 0 | 1 | 1 | 2 | 0 | 0 | 3 | 7 |
| Total | 6 | 2 | 2 | 0 | 10 | 2 | 3 | 1 | 0 | 6 | 1 | 1 | 3 | 0 | 5 | 2 | 4 | 3 | 0 | 9 | 30 |
| 8:00 AM | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 4 |
| 8:15 AM | 0 | 1 | 0 | 0 | 1 | 0 | 2 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 6 |
| 8:30 AM | 3 | 1 | 0 | 0 | 4 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 7 |
| 8:45 AM | 1 | 1 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 3 | 6 |
| Total | 5 | 3 | 0 | 0 | 8 | 0 | 4 | 2 | 0 | 6 | 0 | 1 | 0 | 0 | 1 | 0 | 2 | 5 | 1 | 8 | 23 |
| Grand Total | 11 | 5 | 2 | 0 | 18 | 2 | 7 | 3 | 0 | 12 | 1 | 2 | 3 | 0 | 6 | 2 | 6 | 8 | 1 | 17 | 53 |
| Approach % | 61.1 | 27.8 | 11.1 | 0.0 | | 16.7 | 58.3 | 25.0 | 0.0 | | 16.7 | 33.3 | 50.0 | 0.0 | | 11.8 | 35.3 | 47.1 | 5.9 | | |
| Total % | 20.8 | 9.4 | 3.8 | 0.0 | 34.0 | 3.8 | 13.2 | 5.7 | 0.0 | 22.6 | 1.9 | 3.8 | 5.7 | 0.0 | 11.3 | 3.8 | 11.3 | 15.1 | 1.9 | 32.1 | |
| Exiting Leg Total | | | | | 12 | | | | | 9 | | | | | 10 | | | | | 22 | 53 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:00 AM | L Street | | | | | East Broadway | | | | | L Street | | | | | East Broadway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 1 | 1 | 1 | 0 | 3 | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 2 | 1 | 2 | 1 | 0 | 4 | 11 |
| 7:15 AM | 3 | 0 | 1 | 0 | 4 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 7 |
| 7:30 AM | 2 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 5 |
| 7:45 AM | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 1 | 0 | 1 | 1 | 2 | 0 | 0 | 3 | 7 |
| Total Volume | 6 | 2 | 2 | 0 | 10 | 2 | 3 | 1 | 0 | 6 | 1 | 1 | 3 | 0 | 5 | 2 | 4 | 3 | 0 | 9 | 30 |
| % Approach Total | 60.0 | 20.0 | 20.0 | 0.0 | | 33.3 | 50.0 | 16.7 | 0.0 | | 20.0 | 20.0 | 60.0 | 0.0 | | 22.2 | 44.4 | 33.3 | 0.0 | | |
| PHF | 0.500 | 0.500 | 0.500 | 0.000 | 0.625 | 0.500 | 0.375 | 0.250 | 0.000 | 0.750 | 0.250 | 0.250 | 0.750 | 0.000 | 0.625 | 0.500 | 0.500 | 0.750 | 0.000 | 0.563 | 0.682 |
| Entering Leg | 6 | 2 | 2 | 0 | 10 | 2 | 3 | 1 | 0 | 6 | 1 | 1 | 3 | 0 | 5 | 2 | 4 | 3 | 0 | 9 | 30 |
| Exiting Leg | | | | | 6 | | | | | 7 | | | | | 5 | | | | | 12 | 30 |
| Total | | | | | 16 | | | | | 13 | | | | | 10 | | | | | 21 | 60 |

PDI File #: **175708 F**
Location: **N: L Street S: L Street**
Location: **E: East Broadway W: East Broadway**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Buses

| | L Street | | | | | East Broadway | | | | | L Street | | | | | East Broadway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 3 | 9 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 0 | 0 | 8 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 3 | 0 | 5 | 14 |
| 7:30 AM | 1 | 0 | 0 | 0 | 1 | 5 | 3 | 0 | 0 | 8 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 11 |
| 7:45 AM | 1 | 0 | 0 | 0 | 1 | 3 | 4 | 0 | 0 | 7 | 0 | 1 | 1 | 0 | 2 | 0 | 2 | 4 | 0 | 6 | 16 |
| Total | 2 | 0 | 0 | 0 | 2 | 15 | 14 | 0 | 0 | 29 | 0 | 3 | 1 | 0 | 4 | 1 | 4 | 10 | 0 | 15 | 50 |
| 8:00 AM | 2 | 0 | 0 | 0 | 2 | 3 | 3 | 0 | 0 | 6 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 2 | 11 |
| 8:15 AM | 0 | 0 | 1 | 0 | 1 | 2 | 1 | 0 | 0 | 3 | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 2 | 8 |
| 8:30 AM | 1 | 0 | 0 | 0 | 1 | 6 | 3 | 0 | 0 | 9 | 0 | 0 | 2 | 0 | 2 | 0 | 2 | 3 | 0 | 5 | 17 |
| 8:45 AM | 0 | 5 | 0 | 0 | 5 | 3 | 4 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 4 | 16 |
| Total | 3 | 5 | 1 | 0 | 9 | 14 | 11 | 0 | 0 | 25 | 0 | 3 | 2 | 0 | 5 | 0 | 5 | 8 | 0 | 13 | 52 |
| Grand Total | 5 | 5 | 1 | 0 | 11 | 29 | 25 | 0 | 0 | 54 | 0 | 6 | 3 | 0 | 9 | 1 | 9 | 18 | 0 | 28 | 102 |
| Approach % | 45.5 | 45.5 | 9.1 | 0.0 | | 53.7 | 46.3 | 0.0 | 0.0 | | 0.0 | 66.7 | 33.3 | 0.0 | | 3.6 | 32.1 | 64.3 | 0.0 | | |
| Total % | 4.9 | 4.9 | 1.0 | 0.0 | 10.8 | 28.4 | 24.5 | 0.0 | 0.0 | 52.9 | 0.0 | 5.9 | 2.9 | 0.0 | 8.8 | 1.0 | 8.8 | 17.6 | 0.0 | 27.5 | |
| Exiting Leg Total | | | | | 53 | | | | | 10 | | | | | 6 | | | | | 33 | 102 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:15 AM | L Street | | | | | East Broadway | | | | | L Street | | | | | East Broadway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 0 | 0 | 8 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 3 | 0 | 5 | 14 |
| 7:30 AM | 1 | 0 | 0 | 0 | 1 | 5 | 3 | 0 | 0 | 8 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 11 |
| 7:45 AM | 1 | 0 | 0 | 0 | 1 | 3 | 4 | 0 | 0 | 7 | 0 | 1 | 1 | 0 | 2 | 0 | 2 | 4 | 0 | 6 | 16 |
| 8:00 AM | 2 | 0 | 0 | 0 | 2 | 3 | 3 | 0 | 0 | 6 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 2 | 11 |
| Total Volume | 4 | 0 | 0 | 0 | 4 | 15 | 14 | 0 | 0 | 29 | 0 | 4 | 1 | 0 | 5 | 1 | 4 | 9 | 0 | 14 | 52 |
| % Approach Total | 100.0 | 0.0 | 0.0 | 0.0 | | 51.7 | 48.3 | 0.0 | 0.0 | | 0.0 | 80.0 | 20.0 | 0.0 | | 7.1 | 28.6 | 64.3 | 0.0 | | |
| PHF | 0.500 | 0.000 | 0.000 | 0.000 | 0.500 | 0.750 | 0.875 | 0.000 | 0.000 | 0.906 | 0.000 | 1.000 | 0.250 | 0.000 | 0.625 | 0.250 | 0.500 | 0.563 | 0.000 | 0.583 | 0.813 |
| Entering Leg | 4 | 0 | 0 | 0 | 4 | 15 | 14 | 0 | 0 | 29 | 0 | 4 | 1 | 0 | 5 | 1 | 4 | 9 | 0 | 14 | 52 |
| Exiting Leg | | | | | 28 | | | | | 4 | | | | | 1 | | | | | 19 | 52 |
| Total | | | | | 32 | | | | | 33 | | | | | 6 | | | | | 33 | 104 |

PDI File #: **175708 F**
Location: **N: L Street S: L Street**
Location: **E: East Broadway W: East Broadway**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Bicycles (on Roadway and Crosswalks)

| | L Street | | | | | | | East Broadway | | | | | | | L Street | | | | | | | East Broadway | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | East | | | | | | | South | | | | | | | West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 2 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 1 | 0 | 0 | 0 | 7 | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 9 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 9 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 15 | 1 | 0 | 0 | 0 | 16 | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 21 |
| Approach % | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 93.8 | 6.3 | 0.0 | 0.0 | 0.0 | | 50.0 | 0.0 | 0.0 | 0.0 | 50.0 | 0.0 | | |
| Total % | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 14.3 | 0.0 | 0.0 | 0.0 | 0.0 | 14.3 | 0.0 | 71.4 | 4.8 | 0.0 | 0.0 | 0.0 | 76.2 | 4.8 | 0.0 | 0.0 | 0.0 | 4.8 | 0.0 | 9.5 | |
| Exiting Leg Total | | | | | | | 15 | | | | | | | 0 | | | | | | | 1 | | | | | | | 5 | 21 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:45 AM | L Street | | | | | | | East Broadway | | | | | | | L Street | | | | | | | East Broadway | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | East | | | | | | | South | | | | | | | West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 2 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 8 | 0 | 0 | 0 | 0 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 12 |
| % Approach Total | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| PHF | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.375 | 0.000 | 0.000 | 0.000 | 0.000 | 0.375 | 0.000 | 0.400 | 0.000 | 0.000 | 0.000 | 0.000 | 0.400 | 0.250 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.250 | 0.600 |
| Entering Leg | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 8 | 0 | 0 | 0 | 0 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 12 |
| Exiting Leg | | | | | | | 8 | | | | | | | 0 | | | | | | | 1 | | | | | | | 3 | 12 |
| Total | | | | | | | 8 | | | | | | | 3 | | | | | | | 9 | | | | | | | 4 | 24 |

PDI File #: **175708 F**
Location: **N: L Street S: L Street**
Location: **E: East Broadway W: East Broadway**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Pedestrians

| | L Street | | | | | | | East Broadway | | | | | | | L Street | | | | | | | East Broadway | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | East | | | | | | | South | | | | | | | West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:00 AM | 0 | 0 | 0 | 0 | 7 | 2 | 9 | 0 | 0 | 0 | 0 | 1 | 17 | 18 | 0 | 0 | 0 | 0 | 5 | 9 | 14 | 0 | 0 | 0 | 0 | 14 | 1 | 15 | 56 |
| 7:15 AM | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 8 | 19 | 27 | 0 | 0 | 0 | 0 | 8 | 10 | 18 | 0 | 0 | 0 | 0 | 23 | 0 | 23 | 71 |
| 7:30 AM | 0 | 0 | 0 | 0 | 11 | 6 | 17 | 0 | 0 | 0 | 0 | 2 | 35 | 37 | 0 | 0 | 0 | 0 | 8 | 12 | 20 | 0 | 0 | 0 | 0 | 23 | 7 | 30 | 104 |
| 7:45 AM | 0 | 0 | 0 | 0 | 21 | 2 | 23 | 0 | 0 | 0 | 0 | 1 | 38 | 39 | 0 | 0 | 0 | 0 | 3 | 12 | 15 | 0 | 0 | 0 | 0 | 27 | 6 | 33 | 110 |
| Total | 0 | 0 | 0 | 0 | 41 | 11 | 52 | 0 | 0 | 0 | 0 | 12 | 109 | 121 | 0 | 0 | 0 | 0 | 24 | 43 | 67 | 0 | 0 | 0 | 0 | 87 | 14 | 101 | 341 |
| 8:00 AM | 0 | 0 | 0 | 0 | 33 | 9 | 42 | 0 | 0 | 0 | 0 | 1 | 31 | 32 | 0 | 0 | 0 | 0 | 12 | 13 | 25 | 0 | 0 | 0 | 0 | 41 | 9 | 50 | 149 |
| 8:15 AM | 0 | 0 | 0 | 0 | 21 | 5 | 26 | 0 | 0 | 0 | 0 | 2 | 28 | 30 | 0 | 0 | 0 | 0 | 11 | 5 | 16 | 0 | 0 | 0 | 0 | 61 | 6 | 67 | 139 |
| 8:30 AM | 0 | 0 | 0 | 0 | 14 | 5 | 19 | 0 | 0 | 0 | 0 | 7 | 32 | 39 | 0 | 0 | 0 | 0 | 7 | 18 | 25 | 0 | 0 | 0 | 0 | 27 | 6 | 33 | 116 |
| 8:45 AM | 0 | 0 | 0 | 0 | 14 | 3 | 17 | 0 | 0 | 0 | 0 | 0 | 17 | 17 | 0 | 0 | 0 | 0 | 5 | 13 | 18 | 0 | 0 | 0 | 0 | 22 | 5 | 27 | 79 |
| Total | 0 | 0 | 0 | 0 | 82 | 22 | 104 | 0 | 0 | 0 | 0 | 10 | 108 | 118 | 0 | 0 | 0 | 0 | 35 | 49 | 84 | 0 | 0 | 0 | 0 | 151 | 26 | 177 | 483 |
| Grand Total | 0 | 0 | 0 | 0 | 123 | 33 | 156 | 0 | 0 | 0 | 0 | 22 | 217 | 239 | 0 | 0 | 0 | 0 | 59 | 92 | 151 | 0 | 0 | 0 | 0 | 238 | 40 | 278 | 824 |
| Approach % | 0.0 | 0.0 | 0.0 | 0.0 | 78.8 | 21.2 | | 0.0 | 0.0 | 0.0 | 0.0 | 9.2 | 90.8 | | 0.0 | 0.0 | 0.0 | 0.0 | 39.1 | 60.9 | | 0.0 | 0.0 | 0.0 | 0.0 | 85.6 | 14.4 | | |
| Total % | 0.0 | 0.0 | 0.0 | 0.0 | 14.9 | 4.0 | 18.9 | 0.0 | 0.0 | 0.0 | 0.0 | 2.7 | 26.3 | 29.0 | 0.0 | 0.0 | 0.0 | 0.0 | 7.2 | 11.2 | 18.3 | 0.0 | 0.0 | 0.0 | 0.0 | 28.9 | 4.9 | 33.7 | |
| Exiting Leg Total | | | | | | | 156 | | | | | | | 239 | | | | | | | 151 | | | | | | | 278 | 824 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:45 AM | L Street | | | | | | | East Broadway | | | | | | | L Street | | | | | | | East Broadway | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | East | | | | | | | South | | | | | | | West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:45 AM | 0 | 0 | 0 | 0 | 21 | 2 | 23 | 0 | 0 | 0 | 0 | 1 | 38 | 39 | 0 | 0 | 0 | 0 | 3 | 12 | 15 | 0 | 0 | 0 | 0 | 27 | 6 | 33 | 110 |
| 8:00 AM | 0 | 0 | 0 | 0 | 33 | 9 | 42 | 0 | 0 | 0 | 0 | 1 | 31 | 32 | 0 | 0 | 0 | 0 | 12 | 13 | 25 | 0 | 0 | 0 | 0 | 41 | 9 | 50 | 149 |
| 8:15 AM | 0 | 0 | 0 | 0 | 21 | 5 | 26 | 0 | 0 | 0 | 0 | 2 | 28 | 30 | 0 | 0 | 0 | 0 | 11 | 5 | 16 | 0 | 0 | 0 | 0 | 61 | 6 | 67 | 139 |
| 8:30 AM | 0 | 0 | 0 | 0 | 14 | 5 | 19 | 0 | 0 | 0 | 0 | 7 | 32 | 39 | 0 | 0 | 0 | 0 | 7 | 18 | 25 | 0 | 0 | 0 | 0 | 27 | 6 | 33 | 116 |
| Total Volume | 0 | 0 | 0 | 0 | 89 | 21 | 110 | 0 | 0 | 0 | 0 | 11 | 129 | 140 | 0 | 0 | 0 | 0 | 33 | 48 | 81 | 0 | 0 | 0 | 0 | 156 | 27 | 183 | 514 |
| % Approach Total | 0.0 | 0.0 | 0.0 | 0.0 | 80.9 | 19.1 | | 0.0 | 0.0 | 0.0 | 0.0 | 7.9 | 92.1 | | 0.0 | 0.0 | 0.0 | 0.0 | 40.7 | 59.3 | | 0.0 | 0.0 | 0.0 | 0.0 | 85.2 | 14.8 | | |
| PHF | 0.000 | 0.000 | 0.000 | 0.000 | 0.674 | 0.583 | 0.655 | 0.000 | 0.000 | 0.000 | 0.000 | 0.393 | 0.849 | 0.897 | 0.000 | 0.000 | 0.000 | 0.000 | 0.688 | 0.667 | 0.810 | 0.000 | 0.000 | 0.000 | 0.000 | 0.639 | 0.750 | 0.683 | 0.862 |
| Entering Leg | 0 | 0 | 0 | 0 | 89 | 21 | 110 | 0 | 0 | 0 | 0 | 11 | 129 | 140 | 0 | 0 | 0 | 0 | 33 | 48 | 81 | 0 | 0 | 0 | 0 | 156 | 27 | 183 | 514 |
| Exiting Leg | | | | | | | 110 | | | | | | | 140 | | | | | | | 81 | | | | | | | 183 | 514 |
| Total | | | | | | | 220 | | | | | | | 280 | | | | | | | 162 | | | | | | | 366 | 1028 |

PDI File #: **175708 FF**
Location: **N: L Street S: L Street**
Location: **E: East Broadway W: East Broadway**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Cars, Heavy Vehicles, and Buses (Combined)

| | L Street | | | | | East Broadway | | | | | L Street | | | | | East Broadway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 26 | 127 | 14 | 0 | 167 | 13 | 31 | 4 | 0 | 48 | 9 | 79 | 22 | 0 | 110 | 23 | 27 | 11 | 0 | 61 | 386 |
| 4:15 PM | 25 | 151 | 11 | 0 | 187 | 8 | 54 | 2 | 0 | 64 | 5 | 93 | 16 | 0 | 114 | 11 | 24 | 7 | 0 | 42 | 407 |
| 4:30 PM | 40 | 144 | 11 | 0 | 195 | 8 | 40 | 4 | 0 | 52 | 3 | 121 | 14 | 0 | 138 | 17 | 27 | 14 | 0 | 58 | 443 |
| 4:45 PM | 36 | 124 | 11 | 0 | 171 | 14 | 44 | 4 | 0 | 62 | 5 | 96 | 27 | 0 | 128 | 12 | 27 | 7 | 0 | 46 | 407 |
| Total | 127 | 546 | 47 | 0 | 720 | 43 | 169 | 14 | 0 | 226 | 22 | 389 | 79 | 0 | 490 | 63 | 105 | 39 | 0 | 207 | 1643 |
| 5:00 PM | 54 | 136 | 14 | 0 | 204 | 14 | 40 | 2 | 0 | 56 | 6 | 119 | 20 | 0 | 145 | 13 | 32 | 21 | 0 | 66 | 471 |
| 5:15 PM | 39 | 122 | 10 | 0 | 171 | 11 | 37 | 3 | 0 | 51 | 7 | 102 | 11 | 0 | 120 | 11 | 37 | 10 | 0 | 58 | 400 |
| 5:30 PM | 46 | 123 | 19 | 0 | 188 | 7 | 42 | 4 | 0 | 53 | 7 | 124 | 29 | 0 | 160 | 12 | 29 | 7 | 0 | 48 | 449 |
| 5:45 PM | 47 | 125 | 21 | 0 | 193 | 7 | 28 | 2 | 0 | 37 | 3 | 106 | 14 | 0 | 123 | 13 | 39 | 10 | 0 | 62 | 415 |
| Total | 186 | 506 | 64 | 0 | 756 | 39 | 147 | 11 | 0 | 197 | 23 | 451 | 74 | 0 | 548 | 49 | 137 | 48 | 0 | 234 | 1735 |
| Grand Total | 313 | 1052 | 111 | 0 | 1476 | 82 | 316 | 25 | 0 | 423 | 45 | 840 | 153 | 0 | 1038 | 112 | 242 | 87 | 0 | 441 | 3378 |
| Approach % | 21.2 | 71.3 | 7.5 | 0.0 | | 19.4 | 74.7 | 5.9 | 0.0 | | 4.3 | 80.9 | 14.7 | 0.0 | | 25.4 | 54.9 | 19.7 | 0.0 | | |
| Total % | 9.3 | 31.1 | 3.3 | 0.0 | 43.7 | 2.4 | 9.4 | 0.7 | 0.0 | 12.5 | 1.3 | 24.9 | 4.5 | 0.0 | 30.7 | 3.3 | 7.2 | 2.6 | 0.0 | 13.1 | |
| Exiting Leg Total | | | | | 1009 | | | | | 398 | | | | | 1189 | | | | | 782 | 3378 |
| Cars | 307 | 1049 | 96 | 0 | 1452 | 80 | 290 | 24 | 0 | 394 | 45 | 831 | 149 | 0 | 1025 | 111 | 222 | 86 | 0 | 419 | 3290 |
| % Cars | 98.1 | 99.7 | 86.5 | 0.0 | 98.4 | 97.6 | 91.8 | 96.0 | 0.0 | 93.1 | 100.0 | 98.9 | 97.4 | 0.0 | 98.7 | 99.1 | 91.7 | 98.9 | 0.0 | 95.0 | 97.4 |
| Exiting Leg Total | | | | | 997 | | | | | 363 | | | | | 1184 | | | | | 746 | 3290 |
| Heavy Vehicles | 3 | 0 | 2 | 0 | 5 | 0 | 8 | 1 | 0 | 9 | 0 | 6 | 1 | 0 | 7 | 1 | 2 | 0 | 0 | 3 | 24 |
| % Heavy Vehicles | 1.0 | 0.0 | 1.8 | 0.0 | 0.3 | 0.0 | 2.5 | 4.0 | 0.0 | 2.1 | 0.0 | 0.7 | 0.7 | 0.0 | 0.7 | 0.9 | 0.8 | 0.0 | 0.0 | 0.7 | 0.7 |
| Exiting Leg Total | | | | | 6 | | | | | 4 | | | | | 2 | | | | | 12 | 24 |
| Buses | 3 | 3 | 13 | 0 | 19 | 2 | 18 | 0 | 0 | 20 | 0 | 3 | 3 | 0 | 6 | 0 | 18 | 1 | 0 | 19 | 64 |
| % Buses | 1.0 | 0.3 | 11.7 | 0.0 | 1.3 | 2.4 | 5.7 | 0.0 | 0.0 | 4.7 | 0.0 | 0.4 | 2.0 | 0.0 | 0.6 | 0.0 | 7.4 | 1.1 | 0.0 | 4.3 | 1.9 |
| Exiting Leg Total | | | | | 6 | | | | | 31 | | | | | 3 | | | | | 24 | 64 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 5:00 PM | L Street | | | | | East Broadway | | | | | L Street | | | | | East Broadway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 5:00 PM | 54 | 136 | 14 | 0 | 204 | 14 | 40 | 2 | 0 | 56 | 6 | 119 | 20 | 0 | 145 | 13 | 32 | 21 | 0 | 66 | 471 |
| 5:15 PM | 39 | 122 | 10 | 0 | 171 | 11 | 37 | 3 | 0 | 51 | 7 | 102 | 11 | 0 | 120 | 11 | 37 | 10 | 0 | 58 | 400 |
| 5:30 PM | 46 | 123 | 19 | 0 | 188 | 7 | 42 | 4 | 0 | 53 | 7 | 124 | 29 | 0 | 160 | 12 | 29 | 7 | 0 | 48 | 449 |
| 5:45 PM | 47 | 125 | 21 | 0 | 193 | 7 | 28 | 2 | 0 | 37 | 3 | 106 | 14 | 0 | 123 | 13 | 39 | 10 | 0 | 62 | 415 |
| Total Volume | 186 | 506 | 64 | 0 | 756 | 39 | 147 | 11 | 0 | 197 | 23 | 451 | 74 | 0 | 548 | 49 | 137 | 48 | 0 | 234 | 1735 |
| % Approach Total | 24.6 | 66.9 | 8.5 | 0.0 | | 19.8 | 74.6 | 5.6 | 0.0 | | 4.2 | 82.3 | 13.5 | 0.0 | | 20.9 | 58.5 | 20.5 | 0.0 | | |
| PHF | 0.861 | 0.930 | 0.762 | 0.000 | 0.926 | 0.696 | 0.875 | 0.688 | 0.000 | 0.879 | 0.821 | 0.909 | 0.638 | 0.000 | 0.856 | 0.942 | 0.878 | 0.571 | 0.000 | 0.886 | 0.921 |
| Cars | 184 | 504 | 56 | 0 | 744 | 39 | 138 | 11 | 0 | 188 | 23 | 449 | 72 | 0 | 544 | 49 | 125 | 47 | 0 | 221 | 1697 |
| Cars % | 98.9 | 99.6 | 87.5 | 0.0 | 98.4 | 100.0 | 93.9 | 100.0 | 0.0 | 95.4 | 100.0 | 99.6 | 97.3 | 0.0 | 99.3 | 100.0 | 91.2 | 97.9 | 0.0 | 94.4 | 97.8 |
| Heavy Vehicles | 2 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 2 | 0 | 2 | 0 | 0 | 2 | 8 |
| Heavy Vehicles % | 1.1 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 1.4 | 0.0 | 0.0 | 1.0 | 0.0 | 0.2 | 1.4 | 0.0 | 0.4 | 0.0 | 1.5 | 0.0 | 0.0 | 0.9 | 0.5 |
| Buses | 0 | 2 | 8 | 0 | 10 | 0 | 7 | 0 | 0 | 7 | 0 | 1 | 1 | 0 | 2 | 0 | 10 | 1 | 0 | 11 | 30 |
| Buses % | 0.0 | 0.4 | 12.5 | 0.0 | 1.3 | 0.0 | 4.8 | 0.0 | 0.0 | 3.6 | 0.0 | 0.2 | 1.4 | 0.0 | 0.4 | 0.0 | 7.3 | 2.1 | 0.0 | 4.7 | 1.7 |
| Cars Enter Leg | 184 | 504 | 56 | 0 | 744 | 39 | 138 | 11 | 0 | 188 | 23 | 449 | 72 | 0 | 544 | 49 | 125 | 47 | 0 | 221 | 1697 |
| Heavy Enter Leg | 2 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 2 | 0 | 2 | 0 | 0 | 2 | 8 |
| Bus Enter Leg | 0 | 2 | 8 | 0 | 10 | 0 | 7 | 0 | 0 | 7 | 0 | 1 | 1 | 0 | 2 | 0 | 10 | 1 | 0 | 11 | 30 |
| Total Entering Leg | 186 | 506 | 64 | 0 | 756 | 39 | 147 | 11 | 0 | 197 | 23 | 451 | 74 | 0 | 548 | 49 | 137 | 48 | 0 | 234 | 1735 |
| Cars Exiting Leg | | | | | 535 | | | | | 204 | | | | | 564 | | | | | 394 | 1697 |
| Heavy Exiting Leg | | | | | 1 | | | | | 2 | | | | | 0 | | | | | 5 | 8 |
| Buses Exiting Leg | | | | | 2 | | | | | 18 | | | | | 2 | | | | | 8 | 30 |
| Total Exiting Leg | | | | | 538 | | | | | 224 | | | | | 566 | | | | | 407 | 1735 |

PDI File #: **175708 FF**
Location: **N: L Street S: L Street**
Location: **E: East Broadway W: East Broadway**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Cars

| | L Street | | | | | East Broadway | | | | | L Street | | | | | East Broadway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 26 | 127 | 11 | 0 | 164 | 11 | 26 | 4 | 0 | 41 | 9 | 78 | 22 | 0 | 109 | 23 | 26 | 11 | 0 | 60 | 374 |
| 4:15 PM | 24 | 150 | 10 | 0 | 184 | 8 | 49 | 2 | 0 | 59 | 5 | 90 | 16 | 0 | 111 | 11 | 20 | 7 | 0 | 38 | 392 |
| 4:30 PM | 40 | 144 | 10 | 0 | 194 | 8 | 37 | 4 | 0 | 49 | 3 | 121 | 12 | 0 | 136 | 17 | 26 | 14 | 0 | 57 | 436 |
| 4:45 PM | 33 | 124 | 9 | 0 | 166 | 14 | 40 | 3 | 0 | 57 | 5 | 93 | 27 | 0 | 125 | 11 | 25 | 7 | 0 | 43 | 391 |
| Total | 123 | 545 | 40 | 0 | 708 | 41 | 152 | 13 | 0 | 206 | 22 | 382 | 77 | 0 | 481 | 62 | 97 | 39 | 0 | 198 | 1593 |
| 5:00 PM | 53 | 135 | 13 | 0 | 201 | 14 | 37 | 2 | 0 | 53 | 6 | 119 | 19 | 0 | 144 | 13 | 29 | 20 | 0 | 62 | 460 |
| 5:15 PM | 39 | 122 | 9 | 0 | 170 | 11 | 35 | 3 | 0 | 49 | 7 | 101 | 11 | 0 | 119 | 11 | 36 | 10 | 0 | 57 | 395 |
| 5:30 PM | 46 | 123 | 17 | 0 | 186 | 7 | 41 | 4 | 0 | 52 | 7 | 123 | 28 | 0 | 158 | 12 | 25 | 7 | 0 | 44 | 440 |
| 5:45 PM | 46 | 124 | 17 | 0 | 187 | 7 | 25 | 2 | 0 | 34 | 3 | 106 | 14 | 0 | 123 | 13 | 35 | 10 | 0 | 58 | 402 |
| Total | 184 | 504 | 56 | 0 | 744 | 39 | 138 | 11 | 0 | 188 | 23 | 449 | 72 | 0 | 544 | 49 | 125 | 47 | 0 | 221 | 1697 |
| Grand Total | 307 | 1049 | 96 | 0 | 1452 | 80 | 290 | 24 | 0 | 394 | 45 | 831 | 149 | 0 | 1025 | 111 | 222 | 86 | 0 | 419 | 3290 |
| Approach % | 21.1 | 72.2 | 6.6 | 0.0 | | 20.3 | 73.6 | 6.1 | 0.0 | | 4.4 | 81.1 | 14.5 | 0.0 | | 26.5 | 53.0 | 20.5 | 0.0 | | |
| Total % | 9.3 | 31.9 | 2.9 | 0.0 | 44.1 | 2.4 | 8.8 | 0.7 | 0.0 | 12.0 | 1.4 | 25.3 | 4.5 | 0.0 | 31.2 | 3.4 | 6.7 | 2.6 | 0.0 | 12.7 | |
| Exiting Leg Total | | | | | 997 | | | | | 363 | | | | | 1184 | | | | | 746 | 3290 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 5:00 PM | L Street | | | | | East Broadway | | | | | L Street | | | | | East Broadway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 5:00 PM | 53 | 135 | 13 | 0 | 201 | 14 | 37 | 2 | 0 | 53 | 6 | 119 | 19 | 0 | 144 | 13 | 29 | 20 | 0 | 62 | 460 |
| 5:15 PM | 39 | 122 | 9 | 0 | 170 | 11 | 35 | 3 | 0 | 49 | 7 | 101 | 11 | 0 | 119 | 11 | 36 | 10 | 0 | 57 | 395 |
| 5:30 PM | 46 | 123 | 17 | 0 | 186 | 7 | 41 | 4 | 0 | 52 | 7 | 123 | 28 | 0 | 158 | 12 | 25 | 7 | 0 | 44 | 440 |
| 5:45 PM | 46 | 124 | 17 | 0 | 187 | 7 | 25 | 2 | 0 | 34 | 3 | 106 | 14 | 0 | 123 | 13 | 35 | 10 | 0 | 58 | 402 |
| Total Volume | 184 | 504 | 56 | 0 | 744 | 39 | 138 | 11 | 0 | 188 | 23 | 449 | 72 | 0 | 544 | 49 | 125 | 47 | 0 | 221 | 1697 |
| % Approach Total | 24.7 | 67.7 | 7.5 | 0.0 | | 20.7 | 73.4 | 5.9 | 0.0 | | 4.2 | 82.5 | 13.2 | 0.0 | | 22.2 | 56.6 | 21.3 | 0.0 | | |
| PHF | 0.868 | 0.933 | 0.824 | 0.000 | 0.925 | 0.696 | 0.841 | 0.688 | 0.000 | 0.887 | 0.821 | 0.913 | 0.643 | 0.000 | 0.861 | 0.942 | 0.868 | 0.588 | 0.000 | 0.891 | 0.922 |
| Entering Leg | 184 | 504 | 56 | 0 | 744 | 39 | 138 | 11 | 0 | 188 | 23 | 449 | 72 | 0 | 544 | 49 | 125 | 47 | 0 | 221 | 1697 |
| Exiting Leg | | | | | 535 | | | | | 204 | | | | | 564 | | | | | 394 | 1697 |
| Total | | | | | 1279 | | | | | 392 | | | | | 1108 | | | | | 615 | 3394 |

PDI File #: **175708 FF**
Location: **N: L Street S: L Street**
Location: **E: East Broadway W: East Broadway**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Heavy Vehicles

| | L Street | | | | | East Broadway | | | | | L Street | | | | | East Broadway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 6 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 4:45 PM | 1 | 0 | 1 | 0 | 2 | 0 | 1 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 6 |
| Total | 1 | 0 | 2 | 0 | 3 | 0 | 6 | 1 | 0 | 7 | 0 | 5 | 0 | 0 | 5 | 1 | 0 | 0 | 0 | 1 | 16 |
| 5:00 PM | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 5 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 5:45 PM | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 2 |
| Total | 2 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 2 | 0 | 2 | 0 | 0 | 2 | 8 |
| Grand Total | 3 | 0 | 2 | 0 | 5 | 0 | 8 | 1 | 0 | 9 | 0 | 6 | 1 | 0 | 7 | 1 | 2 | 0 | 0 | 3 | 24 |
| Approach % | 60.0 | 0.0 | 40.0 | 0.0 | | 0.0 | 88.9 | 11.1 | 0.0 | | 0.0 | 85.7 | 14.3 | 0.0 | | 33.3 | 66.7 | 0.0 | 0.0 | | |
| Total % | 12.5 | 0.0 | 8.3 | 0.0 | 20.8 | 0.0 | 33.3 | 4.2 | 0.0 | 37.5 | 0.0 | 25.0 | 4.2 | 0.0 | 29.2 | 4.2 | 8.3 | 0.0 | 0.0 | 12.5 | |
| Exiting Leg Total | | | | | 6 | | | | | 4 | | | | | 2 | | | | | 12 | 24 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:00 PM | L Street | | | | | East Broadway | | | | | L Street | | | | | East Broadway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 6 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 4:45 PM | 1 | 0 | 1 | 0 | 2 | 0 | 1 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 6 |
| Total Volume | 1 | 0 | 2 | 0 | 3 | 0 | 6 | 1 | 0 | 7 | 0 | 5 | 0 | 0 | 5 | 1 | 0 | 0 | 0 | 1 | 16 |
| % Approach Total | 33.3 | 0.0 | 66.7 | 0.0 | | 0.0 | 85.7 | 14.3 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 100.0 | 0.0 | 0.0 | 0.0 | | |
| PHF | 0.250 | 0.000 | 0.500 | 0.000 | 0.375 | 0.000 | 0.500 | 0.250 | 0.000 | 0.583 | 0.000 | 0.417 | 0.000 | 0.000 | 0.417 | 0.250 | 0.000 | 0.000 | 0.000 | 0.250 | 0.667 |
| Entering Leg | 1 | 0 | 2 | 0 | 3 | 0 | 6 | 1 | 0 | 7 | 0 | 5 | 0 | 0 | 5 | 1 | 0 | 0 | 0 | 1 | 16 |
| Exiting Leg | | | | | 5 | | | | | 2 | | | | | 2 | | | | | 7 | 16 |
| Total | | | | | 8 | | | | | 9 | | | | | 7 | | | | | 8 | 32 |

PDI File #: **175708 FF**
Location: **N: L Street S: L Street**
Location: **E: East Broadway W: East Broadway**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Buses

| | L Street | | | | | East Broadway | | | | | L Street | | | | | East Broadway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 0 | 0 | 2 | 0 | 2 | 2 | 4 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 9 |
| 4:15 PM | 1 | 1 | 1 | 0 | 3 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 9 |
| 4:30 PM | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 6 |
| 4:45 PM | 2 | 0 | 1 | 0 | 3 | 0 | 3 | 0 | 0 | 3 | 0 | 2 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 2 | 10 |
| Total | 3 | 1 | 5 | 0 | 9 | 2 | 11 | 0 | 0 | 13 | 0 | 2 | 2 | 0 | 4 | 0 | 8 | 0 | 0 | 8 | 34 |
| 5:00 PM | 0 | 1 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 3 | 6 |
| 5:15 PM | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 5 |
| 5:30 PM | 0 | 0 | 2 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 4 | 0 | 0 | 4 | 8 |
| 5:45 PM | 0 | 1 | 4 | 0 | 5 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 11 |
| Total | 0 | 2 | 8 | 0 | 10 | 0 | 7 | 0 | 0 | 7 | 0 | 1 | 1 | 0 | 2 | 0 | 10 | 1 | 0 | 11 | 30 |
| Grand Total | 3 | 3 | 13 | 0 | 19 | 2 | 18 | 0 | 0 | 20 | 0 | 3 | 3 | 0 | 6 | 0 | 18 | 1 | 0 | 19 | 64 |
| Approach % | 15.8 | 15.8 | 68.4 | 0.0 | | 10.0 | 90.0 | 0.0 | 0.0 | | 0.0 | 50.0 | 50.0 | 0.0 | | 0.0 | 94.7 | 5.3 | 0.0 | | |
| Total % | 4.7 | 4.7 | 20.3 | 0.0 | 29.7 | 3.1 | 28.1 | 0.0 | 0.0 | 31.3 | 0.0 | 4.7 | 4.7 | 0.0 | 9.4 | 0.0 | 28.1 | 1.6 | 0.0 | 29.7 | |
| Exiting Leg Total | | | | | 6 | | | | | 31 | | | | | 3 | | | | | 24 | 64 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:00 PM | L Street | | | | | East Broadway | | | | | L Street | | | | | East Broadway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 0 | 0 | 2 | 0 | 2 | 2 | 4 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 9 |
| 4:15 PM | 1 | 1 | 1 | 0 | 3 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 9 |
| 4:30 PM | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 6 |
| 4:45 PM | 2 | 0 | 1 | 0 | 3 | 0 | 3 | 0 | 0 | 3 | 0 | 2 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 2 | 10 |
| Total Volume | 3 | 1 | 5 | 0 | 9 | 2 | 11 | 0 | 0 | 13 | 0 | 2 | 2 | 0 | 4 | 0 | 8 | 0 | 0 | 8 | 34 |
| % Approach Total | 33.3 | 11.1 | 55.6 | 0.0 | | 15.4 | 84.6 | 0.0 | 0.0 | | 0.0 | 50.0 | 50.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | |
| PHF | 0.375 | 0.250 | 0.625 | 0.000 | 0.750 | 0.250 | 0.688 | 0.000 | 0.000 | 0.542 | 0.000 | 0.250 | 0.250 | 0.000 | 0.500 | 0.000 | 0.500 | 0.000 | 0.000 | 0.500 | 0.850 |
| Entering Leg | 3 | 1 | 5 | 0 | 9 | 2 | 11 | 0 | 0 | 13 | 0 | 2 | 2 | 0 | 4 | 0 | 8 | 0 | 0 | 8 | 34 |
| Exiting Leg | | | | | 4 | | | | | 13 | | | | | 1 | | | | | 16 | 34 |
| Total | | | | | 13 | | | | | 26 | | | | | 5 | | | | | 24 | 68 |

PDI File #: **175708 FF**
Location: **N: L Street S: L Street**
Location: **E: East Broadway W: East Broadway**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Bicycles (on Roadway and Crosswalks)

| | L Street North | | | | | | | East Broadway East | | | | | | | L Street South | | | | | | | East Broadway West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 |
| 4:15 PM | 0 | 1 | 0 | 0 | 0 | 1 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 2 | 0 | 0 | 0 | 1 | 3 | 1 | 0 | 0 | 0 | 0 | 3 | 4 | 12 |
| 4:30 PM | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 2 |
| 4:45 PM | 0 | 5 | 0 | 0 | 0 | 0 | 5 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| Total | 0 | 7 | 0 | 0 | 0 | 1 | 8 | 0 | 5 | 0 | 0 | 0 | 0 | 5 | 0 | 2 | 1 | 0 | 0 | 1 | 4 | 1 | 1 | 1 | 0 | 0 | 3 | 6 | 23 |
| 5:00 PM | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 4 | 6 |
| 5:15 PM | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 2 |
| 5:30 PM | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 |
| 5:45 PM | 0 | 2 | 0 | 0 | 1 | 1 | 4 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 6 |
| Total | 1 | 5 | 0 | 0 | 1 | 1 | 8 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 1 | 0 | 7 | 16 |
| Grand Total | 1 | 12 | 0 | 0 | 1 | 2 | 16 | 0 | 5 | 0 | 0 | 1 | 0 | 6 | 0 | 2 | 1 | 0 | 0 | 1 | 4 | 1 | 7 | 1 | 0 | 1 | 3 | 13 | 39 |
| Approach % | 6.3 | 75.0 | 0.0 | 0.0 | 6.3 | 12.5 | | 0.0 | 83.3 | 0.0 | 0.0 | 16.7 | 0.0 | | 0.0 | 50.0 | 25.0 | 0.0 | 0.0 | 25.0 | | 7.7 | 53.8 | 7.7 | 0.0 | 7.7 | 23.1 | | |
| Total % | 2.6 | 30.8 | 0.0 | 0.0 | 2.6 | 5.1 | 41.0 | 0.0 | 12.8 | 0.0 | 0.0 | 2.6 | 0.0 | 15.4 | 0.0 | 5.1 | 2.6 | 0.0 | 0.0 | 2.6 | 10.3 | 2.6 | 17.9 | 2.6 | 0.0 | 2.6 | 7.7 | 33.3 | |
| Exiting Leg Total | | | | | | | 6 | | | | | | | 8 | | | | | | | 14 | | | | | | | 11 | 39 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:15 PM | L Street North | | | | | | | East Broadway East | | | | | | | L Street South | | | | | | | East Broadway West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 4:15 PM | 0 | 1 | 0 | 0 | 0 | 1 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 2 | 0 | 0 | 0 | 1 | 3 | 1 | 0 | 0 | 0 | 0 | 3 | 4 | 12 |
| 4:30 PM | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 2 |
| 4:45 PM | 0 | 5 | 0 | 0 | 0 | 0 | 5 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 5:00 PM | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 4 | 6 |
| Total Volume | 0 | 9 | 0 | 0 | 0 | 1 | 10 | 0 | 5 | 0 | 0 | 0 | 0 | 5 | 0 | 2 | 1 | 0 | 0 | 1 | 4 | 1 | 5 | 0 | 0 | 0 | 3 | 9 | 28 |
| % Approach Total | 0.0 | 90.0 | 0.0 | 0.0 | 0.0 | 10.0 | | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 50.0 | 25.0 | 0.0 | 0.0 | 25.0 | | 11.1 | 55.6 | 0.0 | 0.0 | 0.0 | 33.3 | | |
| PHF | 0.000 | 0.450 | 0.000 | 0.000 | 0.000 | 0.250 | 0.500 | 0.000 | 0.417 | 0.000 | 0.000 | 0.000 | 0.000 | 0.417 | 0.000 | 0.250 | 0.250 | 0.000 | 0.000 | 0.250 | 0.333 | 0.250 | 0.313 | 0.000 | 0.000 | 0.000 | 0.250 | 0.563 | 0.583 |
| Entering Leg | 0 | 9 | 0 | 0 | 0 | 1 | 10 | 0 | 5 | 0 | 0 | 0 | 0 | 5 | 0 | 2 | 1 | 0 | 0 | 1 | 4 | 1 | 5 | 0 | 0 | 0 | 3 | 9 | 28 |
| Exiting Leg | | | | | | | 3 | | | | | | | 5 | | | | | | | 11 | | | | | | | 9 | 28 |
| Total | | | | | | | 13 | | | | | | | 10 | | | | | | | 15 | | | | | | | 18 | 56 |

PDI File #: **175708 FF**
Location: **N: L Street S: L Street**
Location: **E: East Broadway W: East Broadway**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Pedestrians

| | L Street | | | | | | | East Broadway | | | | | | | L Street | | | | | | | East Broadway | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | East | | | | | | | South | | | | | | | West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 5 | 3 | 8 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 8 | 8 | 0 | 0 | 0 | 0 | 3 | 4 | 7 | 24 |
| 4:15 PM | 0 | 0 | 0 | 0 | 10 | 6 | 16 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 5 | 3 | 8 | 0 | 0 | 0 | 0 | 8 | 12 | 20 | 46 |
| 4:30 PM | 0 | 0 | 0 | 0 | 4 | 3 | 7 | 0 | 0 | 0 | 0 | 4 | 2 | 6 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 6 | 17 | 23 | 39 |
| 4:45 PM | 0 | 0 | 0 | 0 | 1 | 11 | 12 | 0 | 0 | 0 | 0 | 1 | 4 | 5 | 0 | 0 | 0 | 0 | 8 | 7 | 15 | 0 | 0 | 0 | 0 | 5 | 20 | 25 | 57 |
| Total | 0 | 0 | 0 | 0 | 20 | 23 | 43 | 0 | 0 | 0 | 0 | 6 | 8 | 14 | 0 | 0 | 0 | 0 | 16 | 18 | 34 | 0 | 0 | 0 | 0 | 22 | 53 | 75 | 166 |
| 5:00 PM | 0 | 0 | 0 | 0 | 5 | 6 | 11 | 0 | 0 | 0 | 0 | 3 | 3 | 6 | 0 | 0 | 0 | 0 | 7 | 12 | 19 | 0 | 0 | 0 | 0 | 3 | 16 | 19 | 55 |
| 5:15 PM | 0 | 0 | 0 | 0 | 11 | 5 | 16 | 0 | 0 | 0 | 0 | 8 | 4 | 12 | 0 | 0 | 0 | 0 | 21 | 9 | 30 | 0 | 0 | 0 | 0 | 8 | 20 | 28 | 86 |
| 5:30 PM | 0 | 0 | 0 | 0 | 7 | 9 | 16 | 0 | 0 | 0 | 0 | 7 | 7 | 14 | 0 | 0 | 0 | 0 | 4 | 8 | 12 | 0 | 0 | 0 | 0 | 8 | 45 | 53 | 95 |
| 5:45 PM | 0 | 0 | 0 | 0 | 8 | 10 | 18 | 0 | 0 | 0 | 0 | 4 | 3 | 7 | 0 | 0 | 0 | 0 | 9 | 19 | 28 | 0 | 0 | 0 | 0 | 6 | 48 | 54 | 107 |
| Total | 0 | 0 | 0 | 0 | 31 | 30 | 61 | 0 | 0 | 0 | 0 | 22 | 17 | 39 | 0 | 0 | 0 | 0 | 41 | 48 | 89 | 0 | 0 | 0 | 0 | 25 | 129 | 154 | 343 |
| Grand Total | 0 | 0 | 0 | 0 | 51 | 53 | 104 | 0 | 0 | 0 | 0 | 28 | 25 | 53 | 0 | 0 | 0 | 0 | 57 | 66 | 123 | 0 | 0 | 0 | 0 | 47 | 182 | 229 | 509 |
| Approach % | 0.0 | 0.0 | 0.0 | 0.0 | 49.0 | 51.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 52.8 | 47.2 | | 0.0 | 0.0 | 0.0 | 0.0 | 46.3 | 53.7 | | 0.0 | 0.0 | 0.0 | 0.0 | 20.5 | 79.5 | | |
| Total % | 0.0 | 0.0 | 0.0 | 0.0 | 10.0 | 10.4 | 20.4 | 0.0 | 0.0 | 0.0 | 0.0 | 5.5 | 4.9 | 10.4 | 0.0 | 0.0 | 0.0 | 0.0 | 11.2 | 13.0 | 24.2 | 0.0 | 0.0 | 0.0 | 0.0 | 9.2 | 35.8 | 45.0 | |
| Exiting Leg Total | | | | | | | 104 | | | | | | | 53 | | | | | | | 123 | | | | | | | 229 | 509 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 5:00 PM | L Street | | | | | | | East Broadway | | | | | | | L Street | | | | | | | East Broadway | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | East | | | | | | | South | | | | | | | West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 5:00 PM | 0 | 0 | 0 | 0 | 5 | 6 | 11 | 0 | 0 | 0 | 0 | 3 | 3 | 6 | 0 | 0 | 0 | 0 | 7 | 12 | 19 | 0 | 0 | 0 | 0 | 3 | 16 | 19 | 55 |
| 5:15 PM | 0 | 0 | 0 | 0 | 11 | 5 | 16 | 0 | 0 | 0 | 0 | 8 | 4 | 12 | 0 | 0 | 0 | 0 | 21 | 9 | 30 | 0 | 0 | 0 | 0 | 8 | 20 | 28 | 86 |
| 5:30 PM | 0 | 0 | 0 | 0 | 7 | 9 | 16 | 0 | 0 | 0 | 0 | 7 | 7 | 14 | 0 | 0 | 0 | 0 | 4 | 8 | 12 | 0 | 0 | 0 | 0 | 8 | 45 | 53 | 95 |
| 5:45 PM | 0 | 0 | 0 | 0 | 8 | 10 | 18 | 0 | 0 | 0 | 0 | 4 | 3 | 7 | 0 | 0 | 0 | 0 | 9 | 19 | 28 | 0 | 0 | 0 | 0 | 6 | 48 | 54 | 107 |
| Total Volume | 0 | 0 | 0 | 0 | 31 | 30 | 61 | 0 | 0 | 0 | 0 | 22 | 17 | 39 | 0 | 0 | 0 | 0 | 41 | 48 | 89 | 0 | 0 | 0 | 0 | 25 | 129 | 154 | 343 |
| % Approach Total | 0.0 | 0.0 | 0.0 | 0.0 | 50.8 | 49.2 | | 0.0 | 0.0 | 0.0 | 0.0 | 56.4 | 43.6 | | 0.0 | 0.0 | 0.0 | 0.0 | 46.1 | 53.9 | | 0.0 | 0.0 | 0.0 | 0.0 | 16.2 | 83.8 | | |
| PHF | 0.000 | 0.000 | 0.000 | 0.000 | 0.705 | 0.750 | 0.847 | 0.000 | 0.000 | 0.000 | 0.000 | 0.688 | 0.607 | 0.696 | 0.000 | 0.000 | 0.000 | 0.000 | 0.488 | 0.632 | 0.742 | 0.000 | 0.000 | 0.000 | 0.000 | 0.781 | 0.672 | 0.713 | 0.801 |
| Entering Leg | 0 | 0 | 0 | 0 | 31 | 30 | 61 | 0 | 0 | 0 | 0 | 22 | 17 | 39 | 0 | 0 | 0 | 0 | 41 | 48 | 89 | 0 | 0 | 0 | 0 | 25 | 129 | 154 | 343 |
| Exiting Leg | | | | | | | 61 | | | | | | | 39 | | | | | | | 89 | | | | | | | 154 | 343 |
| Total | | | | | | | 122 | | | | | | | 78 | | | | | | | 178 | | | | | | | 308 | 686 |

PDI File #: **175708 G**
Location: **N: L Street S: L Street**
Location: **E: East 5th Street W: East 5th Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Cars, Heavy Vehicles, and Buses (Combined)

| | L Street | | | | | East 5th Street | | | | | L Street | | | | | East 5th Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 11 | 46 | 5 | 0 | 62 | 6 | 0 | 2 | 0 | 8 | 2 | 138 | 5 | 0 | 145 | 0 | 1 | 10 | 0 | 11 | 226 |
| 7:15 AM | 10 | 42 | 4 | 0 | 56 | 2 | 2 | 2 | 0 | 6 | 5 | 141 | 5 | 0 | 151 | 0 | 2 | 5 | 0 | 7 | 220 |
| 7:30 AM | 7 | 55 | 5 | 0 | 67 | 1 | 2 | 1 | 0 | 4 | 6 | 135 | 4 | 0 | 145 | 0 | 3 | 9 | 0 | 12 | 228 |
| 7:45 AM | 6 | 48 | 3 | 0 | 57 | 6 | 8 | 0 | 0 | 14 | 4 | 112 | 5 | 0 | 121 | 2 | 6 | 5 | 0 | 13 | 205 |
| Total | 34 | 191 | 17 | 0 | 242 | 15 | 12 | 5 | 0 | 32 | 17 | 526 | 19 | 0 | 562 | 2 | 12 | 29 | 0 | 43 | 879 |
| 8:00 AM | 12 | 72 | 1 | 0 | 85 | 2 | 9 | 2 | 0 | 13 | 1 | 142 | 1 | 0 | 144 | 1 | 4 | 4 | 0 | 9 | 251 |
| 8:15 AM | 8 | 62 | 5 | 0 | 75 | 2 | 10 | 0 | 0 | 12 | 3 | 132 | 8 | 0 | 143 | 1 | 4 | 9 | 0 | 14 | 244 |
| 8:30 AM | 9 | 54 | 5 | 0 | 68 | 4 | 5 | 1 | 0 | 10 | 1 | 135 | 4 | 0 | 140 | 0 | 5 | 7 | 0 | 12 | 230 |
| 8:45 AM | 7 | 53 | 7 | 0 | 67 | 4 | 6 | 0 | 0 | 10 | 4 | 124 | 5 | 0 | 133 | 2 | 5 | 11 | 0 | 18 | 228 |
| Total | 36 | 241 | 18 | 0 | 295 | 12 | 30 | 3 | 0 | 45 | 9 | 533 | 18 | 0 | 560 | 4 | 18 | 31 | 0 | 53 | 953 |
| Grand Total | 70 | 432 | 35 | 0 | 537 | 27 | 42 | 8 | 0 | 77 | 26 | 1059 | 37 | 0 | 1122 | 6 | 30 | 60 | 0 | 96 | 1832 |
| Approach % | 13.0 | 80.4 | 6.5 | 0.0 | | 35.1 | 54.5 | 10.4 | 0.0 | | 2.3 | 94.4 | 3.3 | 0.0 | | 6.3 | 31.3 | 62.5 | 0.0 | | |
| Total % | 3.8 | 23.6 | 1.9 | 0.0 | 29.3 | 1.5 | 2.3 | 0.4 | 0.0 | 4.2 | 1.4 | 57.8 | 2.0 | 0.0 | 61.2 | 0.3 | 1.6 | 3.3 | 0.0 | 5.2 | |
| Exiting Leg Total | | | | | 1146 | | | | | 91 | | | | | 446 | | | | | 149 | 1832 |
| Cars | 69 | 421 | 35 | 0 | 525 | 27 | 42 | 7 | 0 | 76 | 22 | 1049 | 36 | 0 | 1107 | 6 | 30 | 60 | 0 | 96 | 1804 |
| % Cars | 98.6 | 97.5 | 100.0 | 0.0 | 97.8 | 100.0 | 100.0 | 87.5 | 0.0 | 98.7 | 84.6 | 99.1 | 97.3 | 0.0 | 98.7 | 100.0 | 100.0 | 100.0 | 0.0 | 100.0 | 98.5 |
| Exiting Leg Total | | | | | 1136 | | | | | 87 | | | | | 434 | | | | | 147 | 1804 |
| Heavy Vehicles | 1 | 6 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 3 | 4 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 14 |
| % Heavy Vehicles | 1.4 | 1.4 | 0.0 | 0.0 | 1.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 11.5 | 0.4 | 0.0 | 0.0 | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.8 |
| Exiting Leg Total | | | | | 4 | | | | | 3 | | | | | 6 | | | | | 1 | 14 |
| Buses | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 1 | 0 | 1 | 1 | 6 | 1 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 14 |
| % Buses | 0.0 | 1.2 | 0.0 | 0.0 | 0.9 | 0.0 | 0.0 | 12.5 | 0.0 | 1.3 | 3.8 | 0.6 | 2.7 | 0.0 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.8 |
| Exiting Leg Total | | | | | 6 | | | | | 1 | | | | | 6 | | | | | 1 | 14 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 8:00 AM | L Street | | | | | East 5th Street | | | | | L Street | | | | | East 5th Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 8:00 AM | 12 | 72 | 1 | 0 | 85 | 2 | 9 | 2 | 0 | 13 | 1 | 142 | 1 | 0 | 144 | 1 | 4 | 4 | 0 | 9 | 251 |
| 8:15 AM | 8 | 62 | 5 | 0 | 75 | 2 | 10 | 0 | 0 | 12 | 3 | 132 | 8 | 0 | 143 | 1 | 4 | 9 | 0 | 14 | 244 |
| 8:30 AM | 9 | 54 | 5 | 0 | 68 | 4 | 5 | 1 | 0 | 10 | 1 | 135 | 4 | 0 | 140 | 0 | 5 | 7 | 0 | 12 | 230 |
| 8:45 AM | 7 | 53 | 7 | 0 | 67 | 4 | 6 | 0 | 0 | 10 | 4 | 124 | 5 | 0 | 133 | 2 | 5 | 11 | 0 | 18 | 228 |
| Total Volume | 36 | 241 | 18 | 0 | 295 | 12 | 30 | 3 | 0 | 45 | 9 | 533 | 18 | 0 | 560 | 4 | 18 | 31 | 0 | 53 | 953 |
| % Approach Total | 12.2 | 81.7 | 6.1 | 0.0 | | 26.7 | 66.7 | 6.7 | 0.0 | | 1.6 | 95.2 | 3.2 | 0.0 | | 7.5 | 34.0 | 58.5 | 0.0 | | |
| PHF | 0.750 | 0.837 | 0.643 | 0.000 | 0.868 | 0.750 | 0.750 | 0.375 | 0.000 | 0.865 | 0.563 | 0.938 | 0.563 | 0.000 | 0.972 | 0.500 | 0.900 | 0.705 | 0.000 | 0.736 | 0.949 |
| Cars | 35 | 231 | 18 | 0 | 284 | 12 | 30 | 3 | 0 | 45 | 8 | 529 | 17 | 0 | 554 | 4 | 18 | 31 | 0 | 53 | 936 |
| Cars % | 97.2 | 95.9 | 100.0 | 0.0 | 96.3 | 100.0 | 100.0 | 100.0 | 0.0 | 100.0 | 88.9 | 99.2 | 94.4 | 0.0 | 98.9 | 100.0 | 100.0 | 100.0 | 0.0 | 100.0 | 98.2 |
| Heavy Vehicles | 1 | 5 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 8 |
| Heavy Vehicles % | 2.8 | 2.1 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 11.1 | 0.2 | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.8 |
| Buses | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 9 |
| Buses % | 0.0 | 2.1 | 0.0 | 0.0 | 1.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | 5.6 | 0.0 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.9 |
| Cars Enter Leg | 35 | 231 | 18 | 0 | 284 | 12 | 30 | 3 | 0 | 45 | 8 | 529 | 17 | 0 | 554 | 4 | 18 | 31 | 0 | 53 | 936 |
| Heavy Enter Leg | 1 | 5 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 8 |
| Bus Enter Leg | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 9 |
| Total Entering Leg | 36 | 241 | 18 | 0 | 295 | 12 | 30 | 3 | 0 | 45 | 9 | 533 | 18 | 0 | 560 | 4 | 18 | 31 | 0 | 53 | 953 |
| Cars Exiting Leg | | | | | 572 | | | | | 44 | | | | | 238 | | | | | 82 | 936 |
| Heavy Exiting Leg | | | | | 1 | | | | | 1 | | | | | 5 | | | | | 1 | 8 |
| Buses Exiting Leg | | | | | 3 | | | | | 0 | | | | | 5 | | | | | 1 | 9 |
| Total Exiting Leg | | | | | 576 | | | | | 45 | | | | | 248 | | | | | 84 | 953 |

PDI File #: **175708 G**
Location: **N: L Street S: L Street**
Location: **E: East 5th Street W: East 5th Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Cars

| | L Street | | | | | East 5th Street | | | | | L Street | | | | | East 5th Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 11 | 45 | 5 | 0 | 61 | 6 | 0 | 1 | 0 | 7 | 2 | 136 | 5 | 0 | 143 | 0 | 1 | 10 | 0 | 11 | 222 |
| 7:15 AM | 10 | 42 | 4 | 0 | 56 | 2 | 2 | 2 | 0 | 6 | 3 | 140 | 5 | 0 | 148 | 0 | 2 | 5 | 0 | 7 | 217 |
| 7:30 AM | 7 | 55 | 5 | 0 | 67 | 1 | 2 | 1 | 0 | 4 | 5 | 133 | 4 | 0 | 142 | 0 | 3 | 9 | 0 | 12 | 225 |
| 7:45 AM | 6 | 48 | 3 | 0 | 57 | 6 | 8 | 0 | 0 | 14 | 4 | 111 | 5 | 0 | 120 | 2 | 6 | 5 | 0 | 13 | 204 |
| Total | 34 | 190 | 17 | 0 | 241 | 15 | 12 | 4 | 0 | 31 | 14 | 520 | 19 | 0 | 553 | 2 | 12 | 29 | 0 | 43 | 868 |
| 8:00 AM | 12 | 69 | 1 | 0 | 82 | 2 | 9 | 2 | 0 | 13 | 1 | 140 | 1 | 0 | 142 | 1 | 4 | 4 | 0 | 9 | 246 |
| 8:15 AM | 8 | 61 | 5 | 0 | 74 | 2 | 10 | 0 | 0 | 12 | 3 | 130 | 7 | 0 | 140 | 1 | 4 | 9 | 0 | 14 | 240 |
| 8:30 AM | 8 | 54 | 5 | 0 | 67 | 4 | 5 | 1 | 0 | 10 | 1 | 135 | 4 | 0 | 140 | 0 | 5 | 7 | 0 | 12 | 229 |
| 8:45 AM | 7 | 47 | 7 | 0 | 61 | 4 | 6 | 0 | 0 | 10 | 3 | 124 | 5 | 0 | 132 | 2 | 5 | 11 | 0 | 18 | 221 |
| Total | 35 | 231 | 18 | 0 | 284 | 12 | 30 | 3 | 0 | 45 | 8 | 529 | 17 | 0 | 554 | 4 | 18 | 31 | 0 | 53 | 936 |
| Grand Total | 69 | 421 | 35 | 0 | 525 | 27 | 42 | 7 | 0 | 76 | 22 | 1049 | 36 | 0 | 1107 | 6 | 30 | 60 | 0 | 96 | 1804 |
| Approach % | 13.1 | 80.2 | 6.7 | 0.0 | | 35.5 | 55.3 | 9.2 | 0.0 | | 2.0 | 94.8 | 3.3 | 0.0 | | 6.3 | 31.3 | 62.5 | 0.0 | | |
| Total % | 3.8 | 23.3 | 1.9 | 0.0 | 29.1 | 1.5 | 2.3 | 0.4 | 0.0 | 4.2 | 1.2 | 58.1 | 2.0 | 0.0 | 61.4 | 0.3 | 1.7 | 3.3 | 0.0 | 5.3 | |
| Exiting Leg Total | | | | | 1136 | | | | | 87 | | | | | 434 | | | | | 147 | 1804 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 8:00 AM | L Street | | | | | East 5th Street | | | | | L Street | | | | | East 5th Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 8:00 AM | 12 | 69 | 1 | 0 | 82 | 2 | 9 | 2 | 0 | 13 | 1 | 140 | 1 | 0 | 142 | 1 | 4 | 4 | 0 | 9 | 246 |
| 8:15 AM | 8 | 61 | 5 | 0 | 74 | 2 | 10 | 0 | 0 | 12 | 3 | 130 | 7 | 0 | 140 | 1 | 4 | 9 | 0 | 14 | 240 |
| 8:30 AM | 8 | 54 | 5 | 0 | 67 | 4 | 5 | 1 | 0 | 10 | 1 | 135 | 4 | 0 | 140 | 0 | 5 | 7 | 0 | 12 | 229 |
| 8:45 AM | 7 | 47 | 7 | 0 | 61 | 4 | 6 | 0 | 0 | 10 | 3 | 124 | 5 | 0 | 132 | 2 | 5 | 11 | 0 | 18 | 221 |
| Total Volume | 35 | 231 | 18 | 0 | 284 | 12 | 30 | 3 | 0 | 45 | 8 | 529 | 17 | 0 | 554 | 4 | 18 | 31 | 0 | 53 | 936 |
| % Approach Total | 12.3 | 81.3 | 6.3 | 0.0 | | 26.7 | 66.7 | 6.7 | 0.0 | | 1.4 | 95.5 | 3.1 | 0.0 | | 7.5 | 34.0 | 58.5 | 0.0 | | |
| PHF | 0.729 | 0.837 | 0.643 | 0.000 | 0.866 | 0.750 | 0.750 | 0.375 | 0.000 | 0.865 | 0.667 | 0.945 | 0.607 | 0.000 | 0.975 | 0.500 | 0.900 | 0.705 | 0.000 | 0.736 | 0.951 |
| Entering Leg | 35 | 231 | 18 | 0 | 284 | 12 | 30 | 3 | 0 | 45 | 8 | 529 | 17 | 0 | 554 | 4 | 18 | 31 | 0 | 53 | 936 |
| Exiting Leg | | | | | 572 | | | | | 44 | | | | | 238 | | | | | 82 | 936 |
| Total | | | | | 856 | | | | | 89 | | | | | 792 | | | | | 135 | 1872 |

PDI File #: **175708 G**
Location: **N: L Street S: L Street**
Location: **E: East 5th Street W: East 5th Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Heavy Vehicles

| | L Street | | | | | East 5th Street | | | | | L Street | | | | | East 5th Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 3 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 6 |
| 8:00 AM | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 4 |
| 8:15 AM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 8:30 AM | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 8:45 AM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| Total | 1 | 5 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 8 |
| Grand Total | 1 | 6 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 3 | 4 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 14 |
| Approach % | 14.3 | 85.7 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | 42.9 | 57.1 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total % | 7.1 | 42.9 | 0.0 | 0.0 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 21.4 | 28.6 | 0.0 | 0.0 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Exiting Leg Total | | | | | 4 | | | | | 3 | | | | | 6 | | | | | 1 | 14 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:15 AM | L Street | | | | | East 5th Street | | | | | L Street | | | | | East 5th Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 3 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:00 AM | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 4 |
| Total Volume | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 8 |
| % Approach Total | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | 40.0 | 60.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | |
| PHF | 0.000 | 0.250 | 0.000 | 0.000 | 0.250 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.250 | 0.750 | 0.000 | 0.000 | 0.417 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.500 |
| Entering Leg | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 8 |
| Exiting Leg | | | | | 3 | | | | | 2 | | | | | 3 | | | | | 0 | 8 |
| Total | | | | | 6 | | | | | 2 | | | | | 8 | | | | | 0 | 16 |

PDI File #: **175708 G**
Location: **N: L Street S: L Street**
Location: **E: East 5th Street W: East 5th Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Buses

| | L Street | | | | | East 5th Street | | | | | L Street | | | | | East 5th Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 3 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 5 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 3 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:45 AM | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| Total | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 9 |
| Grand Total | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 1 | 0 | 1 | 1 | 6 | 1 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 14 |
| Approach % | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 100.0 | 0.0 | | 12.5 | 75.0 | 12.5 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total % | 0.0 | 35.7 | 0.0 | 0.0 | 35.7 | 0.0 | 0.0 | 7.1 | 0.0 | 7.1 | 7.1 | 42.9 | 7.1 | 0.0 | 57.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Exiting Leg Total | | | | | 6 | | | | | 1 | | | | | 6 | | | | | 1 | 14 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 8:00 AM | L Street | | | | | East 5th Street | | | | | L Street | | | | | East 5th Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 3 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:45 AM | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| Total Volume | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 9 |
| % Approach Total | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 75.0 | 25.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | |
| PHF | 0.000 | 0.250 | 0.000 | 0.000 | 0.250 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.375 | 0.250 | 0.000 | 0.333 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.450 |
| Entering Leg | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 9 |
| Exiting Leg | | | | | 3 | | | | | 0 | | | | | 5 | | | | | 1 | 9 |
| Total | | | | | 8 | | | | | 0 | | | | | 9 | | | | | 1 | 18 |

PDI File #: **175708 G**
Location: **N: L Street S: L Street**
Location: **E: East 5th Street W: East 5th Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Bicycles (on Roadway and Crosswalks)

| | L Street North | | | | | | | East 5th Street East | | | | | | | L Street South | | | | | | | East 5th Street West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 3 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 4 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 2 | 0 | 0 | 1 | 3 | 8 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 3 | 0 | 7 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 2 | 0 | 0 | 1 | 3 | 13 |
| Approach % | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 33.3 | 0.0 | 0.0 | 0.0 | 66.7 | | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 66.7 | 0.0 | 0.0 | 33.3 | | |
| Total % | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 7.7 | 0.0 | 0.0 | 0.0 | 15.4 | 23.1 | 0.0 | 53.8 | 0.0 | 0.0 | 0.0 | 0.0 | 53.8 | 0.0 | 0.0 | 15.4 | 0.0 | 0.0 | 7.7 | 23.1 | |
| Exiting Leg Total | | | | | | | 9 | | | | | | | 2 | | | | | | | 0 | | | | | | | 2 | 13 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:00 AM | L Street North | | | | | | | East 5th Street East | | | | | | | L Street South | | | | | | | East 5th Street West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 3 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 4 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 2 | 0 | 0 | 1 | 3 | 8 |
| % Approach Total | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 66.7 | 0.0 | 0.0 | 33.3 | | |
| PHF | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.250 | 0.000 | 0.000 | 0.000 | 0.000 | 0.250 | 0.000 | 0.500 | 0.000 | 0.000 | 0.000 | 0.000 | 0.500 | 0.000 | 0.000 | 0.500 | 0.000 | 0.000 | 0.250 | 0.750 | 0.667 |
| Entering Leg | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 4 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 2 | 0 | 0 | 1 | 3 | 8 |
| Exiting Leg | | | | | | | 6 | | | | | | | 0 | | | | | | | 0 | | | | | | | 2 | 8 |
| Total | | | | | | | 6 | | | | | | | 1 | | | | | | | 4 | | | | | | | 5 | 16 |

PDI File #: **175708 G**
Location: **N: L Street S: L Street**
Location: **E: East 5th Street W: East 5th Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Pedestrians

| | L Street North | | | | | | | East 5th Street East | | | | | | | L Street South | | | | | | | East 5th Street West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:00 AM | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 16 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 2 | 11 | 30 |
| 7:15 AM | 0 | 0 | 0 | 0 | 3 | 3 | 6 | 0 | 0 | 0 | 0 | 3 | 9 | 12 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 12 | 6 | 18 | 39 |
| 7:30 AM | 0 | 0 | 0 | 0 | 3 | 4 | 7 | 0 | 0 | 0 | 0 | 1 | 21 | 22 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 17 | 6 | 23 | 54 |
| 7:45 AM | 0 | 0 | 0 | 0 | 6 | 3 | 9 | 0 | 0 | 0 | 0 | 4 | 19 | 23 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 28 | 10 | 38 | 72 |
| Total | 0 | 0 | 0 | 0 | 13 | 12 | 25 | 0 | 0 | 0 | 0 | 8 | 65 | 73 | 0 | 0 | 0 | 0 | 2 | 5 | 7 | 0 | 0 | 0 | 0 | 66 | 24 | 90 | 195 |
| 8:00 AM | 0 | 0 | 0 | 0 | 2 | 3 | 5 | 0 | 0 | 0 | 0 | 1 | 18 | 19 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 29 | 4 | 33 | 60 |
| 8:15 AM | 0 | 0 | 0 | 0 | 3 | 5 | 8 | 0 | 0 | 0 | 0 | 1 | 24 | 25 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 27 | 3 | 30 | 66 |
| 8:30 AM | 0 | 0 | 0 | 0 | 5 | 7 | 12 | 0 | 0 | 0 | 0 | 0 | 9 | 9 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 19 | 4 | 23 | 46 |
| 8:45 AM | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 2 | 8 | 10 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 14 | 8 | 22 | 38 |
| Total | 0 | 0 | 0 | 0 | 12 | 16 | 28 | 0 | 0 | 0 | 0 | 4 | 59 | 63 | 0 | 0 | 0 | 0 | 8 | 3 | 11 | 0 | 0 | 0 | 0 | 89 | 19 | 108 | 210 |
| Grand Total | 0 | 0 | 0 | 0 | 25 | 28 | 53 | 0 | 0 | 0 | 0 | 12 | 124 | 136 | 0 | 0 | 0 | 0 | 10 | 8 | 18 | 0 | 0 | 0 | 0 | 155 | 43 | 198 | 405 |
| Approach % | 0.0 | 0.0 | 0.0 | 0.0 | 47.2 | 52.8 | | 0.0 | 0.0 | 0.0 | 0.0 | 8.8 | 91.2 | | 0.0 | 0.0 | 0.0 | 0.0 | 55.6 | 44.4 | | 0.0 | 0.0 | 0.0 | 0.0 | 78.3 | 21.7 | | |
| Total % | 0.0 | 0.0 | 0.0 | 0.0 | 6.2 | 6.9 | 13.1 | 0.0 | 0.0 | 0.0 | 0.0 | 3.0 | 30.6 | 33.6 | 0.0 | 0.0 | 0.0 | 0.0 | 2.5 | 2.0 | 4.4 | 0.0 | 0.0 | 0.0 | 0.0 | 38.3 | 10.6 | 48.9 | |
| Exiting Leg Total | | | | | | | 53 | | | | | | | 136 | | | | | | | 18 | | | | | | | 198 | 405 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:30 AM | L Street North | | | | | | | East 5th Street East | | | | | | | L Street South | | | | | | | East 5th Street West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:30 AM | 0 | 0 | 0 | 0 | 3 | 4 | 7 | 0 | 0 | 0 | 0 | 1 | 21 | 22 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 17 | 6 | 23 | 54 |
| 7:45 AM | 0 | 0 | 0 | 0 | 6 | 3 | 9 | 0 | 0 | 0 | 0 | 4 | 19 | 23 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 28 | 10 | 38 | 72 |
| 8:00 AM | 0 | 0 | 0 | 0 | 2 | 3 | 5 | 0 | 0 | 0 | 0 | 1 | 18 | 19 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 29 | 4 | 33 | 60 |
| 8:15 AM | 0 | 0 | 0 | 0 | 3 | 5 | 8 | 0 | 0 | 0 | 0 | 1 | 24 | 25 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 27 | 3 | 30 | 66 |
| Total Volume | 0 | 0 | 0 | 0 | 14 | 15 | 29 | 0 | 0 | 0 | 0 | 7 | 82 | 89 | 0 | 0 | 0 | 0 | 5 | 5 | 10 | 0 | 0 | 0 | 0 | 101 | 23 | 124 | 252 |
| % Approach Total | 0.0 | 0.0 | 0.0 | 0.0 | 48.3 | 51.7 | | 0.0 | 0.0 | 0.0 | 0.0 | 7.9 | 92.1 | | 0.0 | 0.0 | 0.0 | 0.0 | 50.0 | 50.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 81.5 | 18.5 | | |
| PHF | 0.000 | 0.000 | 0.000 | 0.000 | 0.583 | 0.750 | 0.806 | 0.000 | 0.000 | 0.000 | 0.000 | 0.438 | 0.854 | 0.890 | 0.000 | 0.000 | 0.000 | 0.000 | 0.625 | 0.625 | 0.833 | 0.000 | 0.000 | 0.000 | 0.000 | 0.871 | 0.575 | 0.816 | 0.875 |
| Entering Leg | 0 | 0 | 0 | 0 | 14 | 15 | 29 | 0 | 0 | 0 | 0 | 7 | 82 | 89 | 0 | 0 | 0 | 0 | 5 | 5 | 10 | 0 | 0 | 0 | 0 | 101 | 23 | 124 | 252 |
| Exiting Leg | | | | | | | 29 | | | | | | | 89 | | | | | | | 10 | | | | | | | 124 | 252 |
| Total | | | | | | | 58 | | | | | | | 178 | | | | | | | 20 | | | | | | | 248 | 504 |

PDI File #: **175708 GG**
Location: **N: L Street S: L Street**
Location: **E: East 5th Street W: East 5th Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Cars, Heavy Vehicles, and Buses (Combined)

| | L Street | | | | | East 5th Street | | | | | L Street | | | | | East 5th Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 9 | 128 | 4 | 0 | 141 | 3 | 5 | 1 | 0 | 9 | 5 | 80 | 3 | 0 | 88 | 2 | 9 | 4 | 0 | 15 | 253 |
| 4:15 PM | 4 | 154 | 2 | 0 | 160 | 1 | 0 | 1 | 0 | 2 | 3 | 100 | 3 | 0 | 106 | 0 | 6 | 7 | 0 | 13 | 281 |
| 4:30 PM | 7 | 148 | 9 | 0 | 164 | 1 | 8 | 1 | 0 | 10 | 1 | 126 | 3 | 0 | 130 | 1 | 1 | 6 | 0 | 8 | 312 |
| 4:45 PM | 8 | 119 | 2 | 0 | 129 | 2 | 7 | 1 | 0 | 10 | 4 | 90 | 4 | 0 | 98 | 1 | 7 | 4 | 0 | 12 | 249 |
| Total | 28 | 549 | 17 | 0 | 594 | 7 | 20 | 4 | 0 | 31 | 13 | 396 | 13 | 0 | 422 | 4 | 23 | 21 | 0 | 48 | 1095 |
| 5:00 PM | 5 | 124 | 6 | 0 | 135 | 5 | 4 | 3 | 0 | 12 | 5 | 131 | 2 | 0 | 138 | 1 | 5 | 5 | 0 | 11 | 296 |
| 5:15 PM | 2 | 126 | 5 | 0 | 133 | 5 | 3 | 0 | 0 | 8 | 3 | 128 | 7 | 0 | 138 | 0 | 4 | 7 | 0 | 11 | 290 |
| 5:30 PM | 4 | 123 | 4 | 0 | 131 | 6 | 5 | 0 | 0 | 11 | 3 | 127 | 7 | 0 | 137 | 0 | 3 | 3 | 0 | 6 | 285 |
| 5:45 PM | 6 | 119 | 4 | 0 | 129 | 22 | 7 | 0 | 0 | 29 | 2 | 108 | 4 | 0 | 114 | 0 | 7 | 8 | 0 | 15 | 287 |
| Total | 17 | 492 | 19 | 0 | 528 | 38 | 19 | 3 | 0 | 60 | 13 | 494 | 20 | 0 | 527 | 1 | 19 | 23 | 0 | 43 | 1158 |
| Grand Total | 45 | 1041 | 36 | 0 | 1122 | 45 | 39 | 7 | 0 | 91 | 26 | 890 | 33 | 0 | 949 | 5 | 42 | 44 | 0 | 91 | 2253 |
| Approach % | 4.0 | 92.8 | 3.2 | 0.0 | | 49.5 | 42.9 | 7.7 | 0.0 | | 2.7 | 93.8 | 3.5 | 0.0 | | 5.5 | 46.2 | 48.4 | 0.0 | | |
| Total % | 2.0 | 46.2 | 1.6 | 0.0 | 49.8 | 2.0 | 1.7 | 0.3 | 0.0 | 4.0 | 1.2 | 39.5 | 1.5 | 0.0 | 42.1 | 0.2 | 1.9 | 2.0 | 0.0 | 4.0 | |
| Exiting Leg Total | | | | | 979 | | | | | 104 | | | | | 1053 | | | | | 117 | 2253 |
| Cars | 45 | 1035 | 36 | 0 | 1116 | 45 | 39 | 6 | 0 | 90 | 25 | 878 | 33 | 0 | 936 | 5 | 42 | 44 | 0 | 91 | 2233 |
| % Cars | 100.0 | 99.4 | 100.0 | 0.0 | 99.5 | 100.0 | 100.0 | 85.7 | 0.0 | 98.9 | 96.2 | 98.7 | 100.0 | 0.0 | 98.6 | 100.0 | 100.0 | 100.0 | 0.0 | 100.0 | 99.1 |
| Exiting Leg Total | | | | | 967 | | | | | 103 | | | | | 1046 | | | | | 117 | 2233 |
| Heavy Vehicles | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 1 | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 10 |
| % Heavy Vehicles | 0.0 | 0.3 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | 14.3 | 0.0 | 1.1 | 0.0 | 0.7 | 0.0 | 0.0 | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 |
| Exiting Leg Total | | | | | 6 | | | | | 0 | | | | | 4 | | | | | 0 | 10 |
| Buses | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 10 |
| % Buses | 0.0 | 0.3 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.8 | 0.7 | 0.0 | 0.0 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 |
| Exiting Leg Total | | | | | 6 | | | | | 1 | | | | | 3 | | | | | 0 | 10 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 5:00 PM | L Street | | | | | East 5th Street | | | | | L Street | | | | | East 5th Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 5:00 PM | 5 | 124 | 6 | 0 | 135 | 5 | 4 | 3 | 0 | 12 | 5 | 131 | 2 | 0 | 138 | 1 | 5 | 5 | 0 | 11 | 296 |
| 5:15 PM | 2 | 126 | 5 | 0 | 133 | 5 | 3 | 0 | 0 | 8 | 3 | 128 | 7 | 0 | 138 | 0 | 4 | 7 | 0 | 11 | 290 |
| 5:30 PM | 4 | 123 | 4 | 0 | 131 | 6 | 5 | 0 | 0 | 11 | 3 | 127 | 7 | 0 | 137 | 0 | 3 | 3 | 0 | 6 | 285 |
| 5:45 PM | 6 | 119 | 4 | 0 | 129 | 22 | 7 | 0 | 0 | 29 | 2 | 108 | 4 | 0 | 114 | 0 | 7 | 8 | 0 | 15 | 287 |
| Total Volume | 17 | 492 | 19 | 0 | 528 | 38 | 19 | 3 | 0 | 60 | 13 | 494 | 20 | 0 | 527 | 1 | 19 | 23 | 0 | 43 | 1158 |
| % Approach Total | 3.2 | 93.2 | 3.6 | 0.0 | | 63.3 | 31.7 | 5.0 | 0.0 | | 2.5 | 93.7 | 3.8 | 0.0 | | 2.3 | 44.2 | 53.5 | 0.0 | | |
| PHF | 0.708 | 0.976 | 0.792 | 0.000 | 0.978 | 0.432 | 0.679 | 0.250 | 0.000 | 0.517 | 0.650 | 0.943 | 0.714 | 0.000 | 0.955 | 0.250 | 0.679 | 0.719 | 0.000 | 0.717 | 0.978 |
| Cars | 17 | 489 | 19 | 0 | 525 | 38 | 19 | 3 | 0 | 60 | 12 | 490 | 20 | 0 | 522 | 1 | 19 | 23 | 0 | 43 | 1150 |
| Cars % | 100.0 | 99.4 | 100.0 | 0.0 | 99.4 | 100.0 | 100.0 | 100.0 | 0.0 | 100.0 | 92.3 | 99.2 | 100.0 | 0.0 | 99.1 | 100.0 | 100.0 | 100.0 | 0.0 | 100.0 | 99.3 |
| Heavy Vehicles | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 3 |
| Heavy Vehicles % | 0.0 | 0.2 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 |
| Buses | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 5 |
| Buses % | 0.0 | 0.4 | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 7.7 | 0.4 | 0.0 | 0.0 | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 |
| Cars Enter Leg | 17 | 489 | 19 | 0 | 525 | 38 | 19 | 3 | 0 | 60 | 12 | 490 | 20 | 0 | 522 | 1 | 19 | 23 | 0 | 43 | 1150 |
| Heavy Enter Leg | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 3 |
| Bus Enter Leg | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 5 |
| Total Entering Leg | 17 | 492 | 19 | 0 | 528 | 38 | 19 | 3 | 0 | 60 | 13 | 494 | 20 | 0 | 527 | 1 | 19 | 23 | 0 | 43 | 1158 |
| Cars Exiting Leg | | | | | 551 | | | | | 50 | | | | | 493 | | | | | 56 | 1150 |
| Heavy Exiting Leg | | | | | 2 | | | | | 0 | | | | | 1 | | | | | 0 | 3 |
| Buses Exiting Leg | | | | | 2 | | | | | 1 | | | | | 2 | | | | | 0 | 5 |
| Total Exiting Leg | | | | | 555 | | | | | 51 | | | | | 496 | | | | | 56 | 1158 |

PDI File #: **175708 GG**
Location: **N: L Street S: L Street**
Location: **E: East 5th Street W: East 5th Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Class: **Cars**

| | L Street | | | | | East 5th Street | | | | | L Street | | | | | East 5th Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 9 | 127 | 4 | 0 | 140 | 3 | 5 | 1 | 0 | 9 | 5 | 79 | 3 | 0 | 87 | 2 | 9 | 4 | 0 | 15 | 251 |
| 4:15 PM | 4 | 153 | 2 | 0 | 159 | 1 | 0 | 0 | 0 | 1 | 3 | 98 | 3 | 0 | 104 | 0 | 6 | 7 | 0 | 13 | 277 |
| 4:30 PM | 7 | 148 | 9 | 0 | 164 | 1 | 8 | 1 | 0 | 10 | 1 | 122 | 3 | 0 | 126 | 1 | 1 | 6 | 0 | 8 | 308 |
| 4:45 PM | 8 | 118 | 2 | 0 | 128 | 2 | 7 | 1 | 0 | 10 | 4 | 89 | 4 | 0 | 97 | 1 | 7 | 4 | 0 | 12 | 247 |
| Total | 28 | 546 | 17 | 0 | 591 | 7 | 20 | 3 | 0 | 30 | 13 | 388 | 13 | 0 | 414 | 4 | 23 | 21 | 0 | 48 | 1083 |
| 5:00 PM | 5 | 123 | 6 | 0 | 134 | 5 | 4 | 3 | 0 | 12 | 4 | 130 | 2 | 0 | 136 | 1 | 5 | 5 | 0 | 11 | 293 |
| 5:15 PM | 2 | 126 | 5 | 0 | 133 | 5 | 3 | 0 | 0 | 8 | 3 | 128 | 7 | 0 | 138 | 0 | 4 | 7 | 0 | 11 | 290 |
| 5:30 PM | 4 | 123 | 4 | 0 | 131 | 6 | 5 | 0 | 0 | 11 | 3 | 124 | 7 | 0 | 134 | 0 | 3 | 3 | 0 | 6 | 282 |
| 5:45 PM | 6 | 117 | 4 | 0 | 127 | 22 | 7 | 0 | 0 | 29 | 2 | 108 | 4 | 0 | 114 | 0 | 7 | 8 | 0 | 15 | 285 |
| Total | 17 | 489 | 19 | 0 | 525 | 38 | 19 | 3 | 0 | 60 | 12 | 490 | 20 | 0 | 522 | 1 | 19 | 23 | 0 | 43 | 1150 |
| Grand Total | 45 | 1035 | 36 | 0 | 1116 | 45 | 39 | 6 | 0 | 90 | 25 | 878 | 33 | 0 | 936 | 5 | 42 | 44 | 0 | 91 | 2233 |
| Approach % | 4.0 | 92.7 | 3.2 | 0.0 | | 50.0 | 43.3 | 6.7 | 0.0 | | 2.7 | 93.8 | 3.5 | 0.0 | | 5.5 | 46.2 | 48.4 | 0.0 | | |
| Total % | 2.0 | 46.4 | 1.6 | 0.0 | 50.0 | 2.0 | 1.7 | 0.3 | 0.0 | 4.0 | 1.1 | 39.3 | 1.5 | 0.0 | 41.9 | 0.2 | 1.9 | 2.0 | 0.0 | 4.1 | |
| Exiting Leg Total | | | | | 967 | | | | | 103 | | | | | 1046 | | | | | 117 | 2233 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 5:00 PM | L Street | | | | | East 5th Street | | | | | L Street | | | | | East 5th Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 5:00 PM | 5 | 123 | 6 | 0 | 134 | 5 | 4 | 3 | 0 | 12 | 4 | 130 | 2 | 0 | 136 | 1 | 5 | 5 | 0 | 11 | 293 |
| 5:15 PM | 2 | 126 | 5 | 0 | 133 | 5 | 3 | 0 | 0 | 8 | 3 | 128 | 7 | 0 | 138 | 0 | 4 | 7 | 0 | 11 | 290 |
| 5:30 PM | 4 | 123 | 4 | 0 | 131 | 6 | 5 | 0 | 0 | 11 | 3 | 124 | 7 | 0 | 134 | 0 | 3 | 3 | 0 | 6 | 282 |
| 5:45 PM | 6 | 117 | 4 | 0 | 127 | 22 | 7 | 0 | 0 | 29 | 2 | 108 | 4 | 0 | 114 | 0 | 7 | 8 | 0 | 15 | 285 |
| Total Volume | 17 | 489 | 19 | 0 | 525 | 38 | 19 | 3 | 0 | 60 | 12 | 490 | 20 | 0 | 522 | 1 | 19 | 23 | 0 | 43 | 1150 |
| % Approach Total | 3.2 | 93.1 | 3.6 | 0.0 | | 63.3 | 31.7 | 5.0 | 0.0 | | 2.3 | 93.9 | 3.8 | 0.0 | | 2.3 | 44.2 | 53.5 | 0.0 | | |
| PHF | 0.708 | 0.970 | 0.792 | 0.000 | 0.979 | 0.432 | 0.679 | 0.250 | 0.000 | 0.517 | 0.750 | 0.942 | 0.714 | 0.000 | 0.946 | 0.250 | 0.679 | 0.719 | 0.000 | 0.717 | 0.981 |
| Entering Leg | 17 | 489 | 19 | 0 | 525 | 38 | 19 | 3 | 0 | 60 | 12 | 490 | 20 | 0 | 522 | 1 | 19 | 23 | 0 | 43 | 1150 |
| Exiting Leg | | | | | 551 | | | | | 50 | | | | | 493 | | | | | 56 | 1150 |
| Total | | | | | 1076 | | | | | 110 | | | | | 1015 | | | | | 99 | 2300 |

PDI File #: **175708 GG**
Location: **N: L Street S: L Street**
Location: **E: East 5th Street W: East 5th Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Heavy Vehicles

| | L Street | | | | | East 5th Street | | | | | L Street | | | | | East 5th Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 3 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 4:45 PM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 1 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 7 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 |
| 5:45 PM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 3 |
| Grand Total | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 1 | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 10 |
| Approach % | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 100.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total % | 0.0 | 30.0 | 0.0 | 0.0 | 30.0 | 0.0 | 0.0 | 10.0 | 0.0 | 10.0 | 0.0 | 60.0 | 0.0 | 0.0 | 60.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Exiting Leg Total | | | | | 6 | | | | | 0 | | | | | 4 | | | | | 0 | 10 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:00 PM | L Street | | | | | East 5th Street | | | | | L Street | | | | | East 5th Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 3 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 4:45 PM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total Volume | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 1 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 7 |
| % Approach Total | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 100.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | |
| PHF | 0.000 | 0.500 | 0.000 | 0.000 | 0.500 | 0.000 | 0.000 | 0.250 | 0.000 | 0.250 | 0.000 | 0.500 | 0.000 | 0.000 | 0.500 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.583 |
| Entering Leg | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 1 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 7 |
| Exiting Leg | | | | | 4 | | | | | 0 | | | | | 3 | | | | | 0 | 7 |
| Total | | | | | 6 | | | | | 1 | | | | | 7 | | | | | 0 | 14 |

PDI File #: **175708 GG**
Location: **N: L Street S: L Street**
Location: **E: East 5th Street W: East 5th Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Buses

| | L Street | | | | | East 5th Street | | | | | L Street | | | | | East 5th Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:15 PM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 3 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 5 |
| 5:00 PM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 3 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 5:45 PM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 5 |
| Grand Total | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 10 |
| Approach % | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | 14.3 | 85.7 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total % | 0.0 | 30.0 | 0.0 | 0.0 | 30.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 10.0 | 60.0 | 0.0 | 0.0 | 70.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Exiting Leg Total | | | | | 6 | | | | | 1 | | | | | 3 | | | | | 0 | 10 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:00 PM | L Street | | | | | East 5th Street | | | | | L Street | | | | | East 5th Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:15 PM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 3 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total Volume | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 5 |
| % Approach Total | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | |
| PHF | 0.000 | 0.250 | 0.000 | 0.000 | 0.250 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.333 | 0.000 | 0.000 | 0.333 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.417 |
| Entering Leg | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 5 |
| Exiting Leg | | | | | 4 | | | | | 0 | | | | | 1 | | | | | 0 | 5 |
| Total | | | | | 5 | | | | | 0 | | | | | 5 | | | | | 0 | 10 |

PDI File #: **175708 GG**
Location: **N: L Street S: L Street**
Location: **E: East 5th Street W: East 5th Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Bicycles (on Roadway and Crosswalks)

| | L Street North | | | | | | | East 5th Street East | | | | | | | L Street South | | | | | | | East 5th Street West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:15 PM | 0 | 2 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 4:30 PM | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 2 |
| 4:45 PM | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 4 |
| Total | 0 | 6 | 1 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 2 | 10 |
| 5:00 PM | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 5:15 PM | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 5:30 PM | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 5:45 PM | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| Total | 0 | 6 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| Grand Total | 0 | 12 | 1 | 0 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 2 | 18 |
| Approach % | 0.0 | 92.3 | 7.7 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 50.0 | 50.0 | | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 50.0 | 0.0 | 0.0 | 0.0 | 50.0 | | |
| Total % | 0.0 | 66.7 | 5.6 | 0.0 | 0.0 | 0.0 | 72.2 | 0.0 | 0.0 | 0.0 | 0.0 | 5.6 | 5.6 | 11.1 | 0.0 | 5.6 | 0.0 | 0.0 | 0.0 | 0.0 | 5.6 | 0.0 | 5.6 | 0.0 | 0.0 | 0.0 | 5.6 | 11.1 | |
| Exiting Leg Total | | | | | | | 1 | | | | | | | 4 | | | | | | | 12 | | | | | | | 1 | 18 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:15 PM | L Street North | | | | | | | East 5th Street East | | | | | | | L Street South | | | | | | | East 5th Street West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 4:15 PM | 0 | 2 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 4:30 PM | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 2 |
| 4:45 PM | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 4 |
| 5:00 PM | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Total Volume | 0 | 8 | 1 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 2 | 12 |
| % Approach Total | 0.0 | 88.9 | 11.1 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 50.0 | 0.0 | 0.0 | 0.0 | 50.0 | | |
| PHF | 0.000 | 0.667 | 0.250 | 0.000 | 0.000 | 0.000 | 0.750 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.250 | 0.000 | 0.000 | 0.000 | 0.000 | 0.250 | 0.000 | 0.250 | 0.000 | 0.000 | 0.000 | 0.250 | 0.500 | 0.750 |
| Entering Leg | 0 | 8 | 1 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 2 | 12 |
| Exiting Leg | | | | | | | 1 | | | | | | | 2 | | | | | | | 8 | | | | | | | 1 | 12 |
| Total | | | | | | | 10 | | | | | | | 2 | | | | | | | 9 | | | | | | | 3 | 24 |

PDI File #: **175708 GG**
Location: **N: L Street S: L Street**
Location: **E: East 5th Street W: East 5th Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Pedestrians

| | L Street North | | | | | | | East 5th Street East | | | | | | | L Street South | | | | | | | East 5th Street West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 4 | 1 | 5 | 0 | 0 | 0 | 0 | 4 | 3 | 7 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 1 | 14 | 15 | 30 |
| 4:15 PM | 0 | 0 | 0 | 0 | 5 | 4 | 9 | 0 | 0 | 0 | 0 | 3 | 3 | 6 | 0 | 0 | 0 | 0 | 1 | 5 | 6 | 0 | 0 | 0 | 0 | 5 | 14 | 19 | 40 |
| 4:30 PM | 0 | 0 | 0 | 0 | 3 | 4 | 7 | 0 | 0 | 0 | 0 | 2 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 13 | 14 | 27 | 39 |
| 4:45 PM | 0 | 0 | 0 | 0 | 9 | 3 | 12 | 0 | 0 | 0 | 0 | 3 | 7 | 10 | 0 | 0 | 0 | 0 | 4 | 2 | 6 | 0 | 0 | 0 | 0 | 6 | 23 | 29 | 57 |
| Total | 0 | 0 | 0 | 0 | 21 | 12 | 33 | 0 | 0 | 0 | 0 | 12 | 15 | 27 | 0 | 0 | 0 | 0 | 6 | 10 | 16 | 0 | 0 | 0 | 0 | 25 | 65 | 90 | 166 |
| 5:00 PM | 0 | 0 | 0 | 0 | 2 | 3 | 5 | 0 | 0 | 0 | 0 | 6 | 7 | 13 | 0 | 0 | 0 | 0 | 2 | 3 | 5 | 0 | 0 | 0 | 0 | 1 | 16 | 17 | 40 |
| 5:15 PM | 0 | 0 | 0 | 0 | 5 | 4 | 9 | 0 | 0 | 0 | 0 | 11 | 4 | 15 | 0 | 0 | 0 | 0 | 3 | 6 | 9 | 0 | 0 | 0 | 0 | 16 | 26 | 42 | 75 |
| 5:30 PM | 0 | 0 | 0 | 0 | 6 | 3 | 9 | 0 | 0 | 0 | 0 | 11 | 5 | 16 | 0 | 0 | 0 | 0 | 4 | 8 | 12 | 0 | 0 | 0 | 0 | 10 | 30 | 40 | 77 |
| 5:45 PM | 0 | 0 | 0 | 0 | 5 | 5 | 10 | 0 | 0 | 0 | 0 | 8 | 8 | 16 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 8 | 36 | 44 | 73 |
| Total | 0 | 0 | 0 | 0 | 18 | 15 | 33 | 0 | 0 | 0 | 0 | 36 | 24 | 60 | 0 | 0 | 0 | 0 | 10 | 19 | 29 | 0 | 0 | 0 | 0 | 35 | 108 | 143 | 265 |
| Grand Total | 0 | 0 | 0 | 0 | 39 | 27 | 66 | 0 | 0 | 0 | 0 | 48 | 39 | 87 | 0 | 0 | 0 | 0 | 16 | 29 | 45 | 0 | 0 | 0 | 0 | 60 | 173 | 233 | 431 |
| Approach % | 0.0 | 0.0 | 0.0 | 0.0 | 59.1 | 40.9 | | 0.0 | 0.0 | 0.0 | 0.0 | 55.2 | 44.8 | | 0.0 | 0.0 | 0.0 | 0.0 | 35.6 | 64.4 | | 0.0 | 0.0 | 0.0 | 0.0 | 25.8 | 74.2 | | |
| Total % | 0.0 | 0.0 | 0.0 | 0.0 | 9.0 | 6.3 | 15.3 | 0.0 | 0.0 | 0.0 | 0.0 | 11.1 | 9.0 | 20.2 | 0.0 | 0.0 | 0.0 | 0.0 | 3.7 | 6.7 | 10.4 | 0.0 | 0.0 | 0.0 | 0.0 | 13.9 | 40.1 | 54.1 | |
| Exiting Leg Total | | | | | | | 66 | | | | | | | 87 | | | | | | | 45 | | | | | | | 233 | 431 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 5:00 PM | L Street North | | | | | | | East 5th Street East | | | | | | | L Street South | | | | | | | East 5th Street West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 5:00 PM | 0 | 0 | 0 | 0 | 2 | 3 | 5 | 0 | 0 | 0 | 0 | 6 | 7 | 13 | 0 | 0 | 0 | 0 | 2 | 3 | 5 | 0 | 0 | 0 | 0 | 1 | 16 | 17 | 40 |
| 5:15 PM | 0 | 0 | 0 | 0 | 5 | 4 | 9 | 0 | 0 | 0 | 0 | 11 | 4 | 15 | 0 | 0 | 0 | 0 | 3 | 6 | 9 | 0 | 0 | 0 | 0 | 16 | 26 | 42 | 75 |
| 5:30 PM | 0 | 0 | 0 | 0 | 6 | 3 | 9 | 0 | 0 | 0 | 0 | 11 | 5 | 16 | 0 | 0 | 0 | 0 | 4 | 8 | 12 | 0 | 0 | 0 | 0 | 10 | 30 | 40 | 77 |
| 5:45 PM | 0 | 0 | 0 | 0 | 5 | 5 | 10 | 0 | 0 | 0 | 0 | 8 | 8 | 16 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 8 | 36 | 44 | 73 |
| Total Volume | 0 | 0 | 0 | 0 | 18 | 15 | 33 | 0 | 0 | 0 | 0 | 36 | 24 | 60 | 0 | 0 | 0 | 0 | 10 | 19 | 29 | 0 | 0 | 0 | 0 | 35 | 108 | 143 | 265 |
| % Approach Total | 0.0 | 0.0 | 0.0 | 0.0 | 54.5 | 45.5 | | 0.0 | 0.0 | 0.0 | 0.0 | 60.0 | 40.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 34.5 | 65.5 | | 0.0 | 0.0 | 0.0 | 0.0 | 24.5 | 75.5 | | |
| PHF | 0.000 | 0.000 | 0.000 | 0.000 | 0.750 | 0.750 | 0.825 | 0.000 | 0.000 | 0.000 | 0.000 | 0.818 | 0.750 | 0.938 | 0.000 | 0.000 | 0.000 | 0.000 | 0.625 | 0.594 | 0.604 | 0.000 | 0.000 | 0.000 | 0.000 | 0.547 | 0.750 | 0.813 | 0.860 |
| Entering Leg | 0 | 0 | 0 | 0 | 18 | 15 | 33 | 0 | 0 | 0 | 0 | 36 | 24 | 60 | 0 | 0 | 0 | 0 | 10 | 19 | 29 | 0 | 0 | 0 | 0 | 35 | 108 | 143 | 265 |
| Exiting Leg | | | | | | | 33 | | | | | | | 60 | | | | | | | 29 | | | | | | | 143 | 265 |
| Total | | | | | | | 66 | | | | | | | 120 | | | | | | | 58 | | | | | | | 286 | 530 |

PDI File #: **175708 H**
Location: **N: L Street S: L Street**
Location: **E: East 8th Street W: East 8th Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Cars, Heavy Vehicles, and Buses (Combined)

| | L Street | | | | | East 8th Street | | | | | L Street | | | | | East 8th Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 3 | 33 | 3 | 0 | 39 | 3 | 8 | 0 | 0 | 11 | 0 | 127 | 3 | 0 | 130 | 3 | 3 | 5 | 0 | 11 | 191 |
| 7:15 AM | 5 | 32 | 1 | 0 | 38 | 2 | 8 | 4 | 0 | 14 | 2 | 139 | 2 | 0 | 143 | 5 | 8 | 5 | 0 | 18 | 213 |
| 7:30 AM | 3 | 39 | 2 | 0 | 44 | 5 | 6 | 1 | 0 | 12 | 2 | 114 | 5 | 0 | 121 | 0 | 6 | 9 | 0 | 15 | 192 |
| 7:45 AM | 4 | 37 | 4 | 0 | 45 | 5 | 7 | 2 | 0 | 14 | 1 | 98 | 2 | 0 | 101 | 1 | 9 | 7 | 0 | 17 | 177 |
| Total | 15 | 141 | 10 | 0 | 166 | 15 | 29 | 7 | 0 | 51 | 5 | 478 | 12 | 0 | 495 | 9 | 26 | 26 | 0 | 61 | 773 |
| 8:00 AM | 5 | 47 | 3 | 0 | 55 | 2 | 5 | 2 | 0 | 9 | 1 | 126 | 5 | 0 | 132 | 1 | 8 | 6 | 0 | 15 | 211 |
| 8:15 AM | 2 | 41 | 2 | 0 | 45 | 3 | 13 | 1 | 0 | 17 | 1 | 121 | 2 | 0 | 124 | 1 | 4 | 7 | 0 | 12 | 198 |
| 8:30 AM | 3 | 41 | 3 | 0 | 47 | 4 | 6 | 0 | 0 | 10 | 1 | 117 | 1 | 0 | 119 | 0 | 2 | 6 | 0 | 8 | 184 |
| 8:45 AM | 3 | 51 | 3 | 0 | 57 | 2 | 3 | 0 | 0 | 5 | 0 | 118 | 5 | 0 | 123 | 4 | 3 | 5 | 0 | 12 | 197 |
| Total | 13 | 180 | 11 | 0 | 204 | 11 | 27 | 3 | 0 | 41 | 3 | 482 | 13 | 0 | 498 | 6 | 17 | 24 | 0 | 47 | 790 |
| Grand Total | 28 | 321 | 21 | 0 | 370 | 26 | 56 | 10 | 0 | 92 | 8 | 960 | 25 | 0 | 993 | 15 | 43 | 50 | 0 | 108 | 1563 |
| Approach % | 7.6 | 86.8 | 5.7 | 0.0 | | 28.3 | 60.9 | 10.9 | 0.0 | | 0.8 | 96.7 | 2.5 | 0.0 | | 13.9 | 39.8 | 46.3 | 0.0 | | |
| Total % | 1.8 | 20.5 | 1.3 | 0.0 | 23.7 | 1.7 | 3.6 | 0.6 | 0.0 | 5.9 | 0.5 | 61.4 | 1.6 | 0.0 | 63.5 | 1.0 | 2.8 | 3.2 | 0.0 | 6.9 | |
| Exiting Leg Total | | | | | 1036 | | | | | 72 | | | | | 346 | | | | | 109 | 1563 |
| Cars | 27 | 313 | 19 | 0 | 359 | 26 | 41 | 9 | 0 | 76 | 8 | 947 | 25 | 0 | 980 | 15 | 34 | 49 | 0 | 98 | 1513 |
| % Cars | 96.4 | 97.5 | 90.5 | 0.0 | 97.0 | 100.0 | 73.2 | 90.0 | 0.0 | 82.6 | 100.0 | 98.6 | 100.0 | 0.0 | 98.7 | 100.0 | 79.1 | 98.0 | 0.0 | 90.7 | 96.8 |
| Exiting Leg Total | | | | | 1022 | | | | | 61 | | | | | 337 | | | | | 93 | 1513 |
| Heavy Vehicles | 1 | 4 | 1 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 1 | 0 | 1 | 11 |
| % Heavy Vehicles | 3.6 | 1.2 | 4.8 | 0.0 | 1.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 | 2.0 | 0.0 | 0.9 | 0.7 |
| Exiting Leg Total | | | | | 5 | | | | | 1 | | | | | 4 | | | | | 1 | 11 |
| Buses | 0 | 4 | 1 | 0 | 5 | 0 | 15 | 1 | 0 | 16 | 0 | 9 | 0 | 0 | 9 | 0 | 9 | 0 | 0 | 9 | 39 |
| % Buses | 0.0 | 1.2 | 4.8 | 0.0 | 1.4 | 0.0 | 26.8 | 10.0 | 0.0 | 17.4 | 0.0 | 0.9 | 0.0 | 0.0 | 0.9 | 0.0 | 20.9 | 0.0 | 0.0 | 8.3 | 2.5 |
| Exiting Leg Total | | | | | 9 | | | | | 10 | | | | | 5 | | | | | 15 | 39 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:15 AM | L Street | | | | | East 8th Street | | | | | L Street | | | | | East 8th Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:15 AM | 5 | 32 | 1 | 0 | 38 | 2 | 8 | 4 | 0 | 14 | 2 | 139 | 2 | 0 | 143 | 5 | 8 | 5 | 0 | 18 | 213 |
| 7:30 AM | 3 | 39 | 2 | 0 | 44 | 5 | 6 | 1 | 0 | 12 | 2 | 114 | 5 | 0 | 121 | 0 | 6 | 9 | 0 | 15 | 192 |
| 7:45 AM | 4 | 37 | 4 | 0 | 45 | 5 | 7 | 2 | 0 | 14 | 1 | 98 | 2 | 0 | 101 | 1 | 9 | 7 | 0 | 17 | 177 |
| 8:00 AM | 5 | 47 | 3 | 0 | 55 | 2 | 5 | 2 | 0 | 9 | 1 | 126 | 5 | 0 | 132 | 1 | 8 | 6 | 0 | 15 | 211 |
| Total Volume | 17 | 155 | 10 | 0 | 182 | 14 | 26 | 9 | 0 | 49 | 6 | 477 | 14 | 0 | 497 | 7 | 31 | 27 | 0 | 65 | 793 |
| % Approach Total | 9.3 | 85.2 | 5.5 | 0.0 | | 28.6 | 53.1 | 18.4 | 0.0 | | 1.2 | 96.0 | 2.8 | 0.0 | | 10.8 | 47.7 | 41.5 | 0.0 | | |
| PHF | 0.850 | 0.824 | 0.625 | 0.000 | 0.827 | 0.700 | 0.813 | 0.563 | 0.000 | 0.875 | 0.750 | 0.858 | 0.700 | 0.000 | 0.869 | 0.350 | 0.861 | 0.750 | 0.000 | 0.903 | 0.931 |
| Cars | 16 | 154 | 10 | 0 | 180 | 14 | 22 | 8 | 0 | 44 | 6 | 469 | 14 | 0 | 489 | 7 | 26 | 27 | 0 | 60 | 773 |
| Cars % | 94.1 | 99.4 | 100.0 | 0.0 | 98.9 | 100.0 | 84.6 | 88.9 | 0.0 | 89.8 | 100.0 | 98.3 | 100.0 | 0.0 | 98.4 | 100.0 | 83.9 | 100.0 | 0.0 | 92.3 | 97.5 |
| Heavy Vehicles | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 5 |
| Heavy Vehicles % | 5.9 | 0.6 | 0.0 | 0.0 | 1.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | 0.0 | 0.0 | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 |
| Buses | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 0 | 5 | 0 | 5 | 0 | 0 | 5 | 0 | 5 | 0 | 0 | 5 | 15 |
| Buses % | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 15.4 | 11.1 | 0.0 | 10.2 | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 | 16.1 | 0.0 | 0.0 | 7.7 | 1.9 |
| Cars Enter Leg | 16 | 154 | 10 | 0 | 180 | 14 | 22 | 8 | 0 | 44 | 6 | 469 | 14 | 0 | 489 | 7 | 26 | 27 | 0 | 60 | 773 |
| Heavy Enter Leg | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 5 |
| Bus Enter Leg | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 0 | 5 | 0 | 5 | 0 | 0 | 5 | 0 | 5 | 0 | 0 | 5 | 15 |
| Total Entering Leg | 17 | 155 | 10 | 0 | 182 | 14 | 26 | 9 | 0 | 49 | 6 | 477 | 14 | 0 | 497 | 7 | 31 | 27 | 0 | 65 | 793 |
| Cars Exiting Leg | | | | | 510 | | | | | 42 | | | | | 169 | | | | | 52 | 773 |
| Heavy Exiting Leg | | | | | 3 | | | | | 0 | | | | | 1 | | | | | 1 | 5 |
| Buses Exiting Leg | | | | | 5 | | | | | 5 | | | | | 1 | | | | | 4 | 15 |
| Total Exiting Leg | | | | | 518 | | | | | 47 | | | | | 171 | | | | | 57 | 793 |

PDI File #: **175708 H**
Location: **N: L Street S: L Street**
Location: **E: East 8th Street W: East 8th Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Cars

| | L Street | | | | | East 8th Street | | | | | L Street | | | | | East 8th Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 3 | 33 | 2 | 0 | 38 | 3 | 6 | 0 | 0 | 9 | 0 | 126 | 3 | 0 | 129 | 3 | 2 | 5 | 0 | 10 | 186 |
| 7:15 AM | 5 | 32 | 1 | 0 | 38 | 2 | 6 | 4 | 0 | 12 | 2 | 137 | 2 | 0 | 141 | 5 | 6 | 5 | 0 | 16 | 207 |
| 7:30 AM | 3 | 39 | 2 | 0 | 44 | 5 | 5 | 0 | 0 | 10 | 2 | 110 | 5 | 0 | 117 | 0 | 5 | 9 | 0 | 14 | 185 |
| 7:45 AM | 4 | 37 | 4 | 0 | 45 | 5 | 6 | 2 | 0 | 13 | 1 | 97 | 2 | 0 | 100 | 1 | 9 | 7 | 0 | 17 | 175 |
| Total | 15 | 141 | 9 | 0 | 165 | 15 | 23 | 6 | 0 | 44 | 5 | 470 | 12 | 0 | 487 | 9 | 22 | 26 | 0 | 57 | 753 |
| 8:00 AM | 4 | 46 | 3 | 0 | 53 | 2 | 5 | 2 | 0 | 9 | 1 | 125 | 5 | 0 | 131 | 1 | 6 | 6 | 0 | 13 | 206 |
| 8:15 AM | 2 | 40 | 2 | 0 | 44 | 3 | 8 | 1 | 0 | 12 | 1 | 117 | 2 | 0 | 120 | 1 | 2 | 7 | 0 | 10 | 186 |
| 8:30 AM | 3 | 40 | 3 | 0 | 46 | 4 | 4 | 0 | 0 | 8 | 1 | 117 | 1 | 0 | 119 | 0 | 2 | 6 | 0 | 8 | 181 |
| 8:45 AM | 3 | 46 | 2 | 0 | 51 | 2 | 1 | 0 | 0 | 3 | 0 | 118 | 5 | 0 | 123 | 4 | 2 | 4 | 0 | 10 | 187 |
| Total | 12 | 172 | 10 | 0 | 194 | 11 | 18 | 3 | 0 | 32 | 3 | 477 | 13 | 0 | 493 | 6 | 12 | 23 | 0 | 41 | 760 |
| Grand Total | 27 | 313 | 19 | 0 | 359 | 26 | 41 | 9 | 0 | 76 | 8 | 947 | 25 | 0 | 980 | 15 | 34 | 49 | 0 | 98 | 1513 |
| Approach % | 7.5 | 87.2 | 5.3 | 0.0 | | 34.2 | 53.9 | 11.8 | 0.0 | | 0.8 | 96.6 | 2.6 | 0.0 | | 15.3 | 34.7 | 50.0 | 0.0 | | |
| Total % | 1.8 | 20.7 | 1.3 | 0.0 | 23.7 | 1.7 | 2.7 | 0.6 | 0.0 | 5.0 | 0.5 | 62.6 | 1.7 | 0.0 | 64.8 | 1.0 | 2.2 | 3.2 | 0.0 | 6.5 | |
| Exiting Leg Total | | | | | 1022 | | | | | 61 | | | | | 337 | | | | | 93 | 1513 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:15 AM | L Street | | | | | East 8th Street | | | | | L Street | | | | | East 8th Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:15 AM | 5 | 32 | 1 | 0 | 38 | 2 | 6 | 4 | 0 | 12 | 2 | 137 | 2 | 0 | 141 | 5 | 6 | 5 | 0 | 16 | 207 |
| 7:30 AM | 3 | 39 | 2 | 0 | 44 | 5 | 5 | 0 | 0 | 10 | 2 | 110 | 5 | 0 | 117 | 0 | 5 | 9 | 0 | 14 | 185 |
| 7:45 AM | 4 | 37 | 4 | 0 | 45 | 5 | 6 | 2 | 0 | 13 | 1 | 97 | 2 | 0 | 100 | 1 | 9 | 7 | 0 | 17 | 175 |
| 8:00 AM | 4 | 46 | 3 | 0 | 53 | 2 | 5 | 2 | 0 | 9 | 1 | 125 | 5 | 0 | 131 | 1 | 6 | 6 | 0 | 13 | 206 |
| Total Volume | 16 | 154 | 10 | 0 | 180 | 14 | 22 | 8 | 0 | 44 | 6 | 469 | 14 | 0 | 489 | 7 | 26 | 27 | 0 | 60 | 773 |
| % Approach Total | 8.9 | 85.6 | 5.6 | 0.0 | | 31.8 | 50.0 | 18.2 | 0.0 | | 1.2 | 95.9 | 2.9 | 0.0 | | 11.7 | 43.3 | 45.0 | 0.0 | | |
| PHF | 0.800 | 0.837 | 0.625 | 0.000 | 0.849 | 0.700 | 0.917 | 0.500 | 0.000 | 0.846 | 0.750 | 0.856 | 0.700 | 0.000 | 0.867 | 0.350 | 0.722 | 0.750 | 0.000 | 0.882 | 0.934 |
| Entering Leg | 16 | 154 | 10 | 0 | 180 | 14 | 22 | 8 | 0 | 44 | 6 | 469 | 14 | 0 | 489 | 7 | 26 | 27 | 0 | 60 | 773 |
| Exiting Leg | | | | | 510 | | | | | 42 | | | | | 169 | | | | | 52 | 773 |
| Total | | | | | 690 | | | | | 86 | | | | | 658 | | | | | 112 | 1546 |

PDI File #: **175708 H**
Location: **N: L Street S: L Street**
Location: **E: East 8th Street W: East 8th Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Heavy Vehicles

| | L Street | | | | | East 8th Street | | | | | L Street | | | | | East 8th Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 4 |
| 8:00 AM | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 8:15 AM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| 8:30 AM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 8:45 AM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 |
| Total | 1 | 4 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 7 |
| Grand Total | 1 | 4 | 1 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 1 | 0 | 1 | 11 |
| Approach % | 16.7 | 66.7 | 16.7 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 100.0 | 0.0 | | |
| Total % | 9.1 | 36.4 | 9.1 | 0.0 | 54.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 36.4 | 0.0 | 0.0 | 36.4 | 0.0 | 0.0 | 9.1 | 0.0 | 9.1 | |
| Exiting Leg Total | | | | | 5 | | | | | 1 | | | | | 4 | | | | | 1 | 11 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 8:00 AM | L Street | | | | | East 8th Street | | | | | L Street | | | | | East 8th Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 8:00 AM | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 8:15 AM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| 8:30 AM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 8:45 AM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 |
| Total Volume | 1 | 4 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 7 |
| % Approach Total | 20.0 | 80.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 100.0 | 0.0 | | |
| PHF | 0.250 | 1.000 | 0.000 | 0.000 | 0.625 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.250 | 0.000 | 0.000 | 0.250 | 0.000 | 0.000 | 0.250 | 0.000 | 0.250 | 0.875 |
| Entering Leg | 1 | 4 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 7 |
| Exiting Leg | | | | | 2 | | | | | 0 | | | | | 4 | | | | | 1 | 7 |
| Total | | | | | 7 | | | | | 0 | | | | | 5 | | | | | 2 | 14 |

PDI File #: **175708 H**
Location: **N: L Street S: L Street**
Location: **E: East 8th Street W: East 8th Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Buses

| | L Street | | | | | East 8th Street | | | | | L Street | | | | | East 8th Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 4 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 2 | 5 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 5 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 1 | 0 | 7 | 0 | 5 | 0 | 0 | 5 | 0 | 4 | 0 | 0 | 4 | 16 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 2 | 3 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 3 | 0 | 0 | 3 | 0 | 2 | 0 | 0 | 2 | 10 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 8:45 AM | 0 | 4 | 1 | 0 | 5 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 8 |
| Total | 0 | 4 | 1 | 0 | 5 | 0 | 9 | 0 | 0 | 9 | 0 | 4 | 0 | 0 | 4 | 0 | 5 | 0 | 0 | 5 | 23 |
| Grand Total | 0 | 4 | 1 | 0 | 5 | 0 | 15 | 1 | 0 | 16 | 0 | 9 | 0 | 0 | 9 | 0 | 9 | 0 | 0 | 9 | 39 |
| Approach % | 0.0 | 80.0 | 20.0 | 0.0 | | 0.0 | 93.8 | 6.3 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | |
| Total % | 0.0 | 10.3 | 2.6 | 0.0 | 12.8 | 0.0 | 38.5 | 2.6 | 0.0 | 41.0 | 0.0 | 23.1 | 0.0 | 0.0 | 23.1 | 0.0 | 23.1 | 0.0 | 0.0 | 23.1 | |
| Exiting Leg Total | | | | | 9 | | | | | 10 | | | | | 5 | | | | | 15 | 39 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 8:00 AM | L Street | | | | | East 8th Street | | | | | L Street | | | | | East 8th Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 2 | 3 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 3 | 0 | 0 | 3 | 0 | 2 | 0 | 0 | 2 | 10 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 8:45 AM | 0 | 4 | 1 | 0 | 5 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 8 |
| Total Volume | 0 | 4 | 1 | 0 | 5 | 0 | 9 | 0 | 0 | 9 | 0 | 4 | 0 | 0 | 4 | 0 | 5 | 0 | 0 | 5 | 23 |
| % Approach Total | 0.0 | 80.0 | 20.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | |
| PHF | 0.000 | 0.250 | 0.250 | 0.000 | 0.250 | 0.000 | 0.450 | 0.000 | 0.000 | 0.450 | 0.000 | 0.333 | 0.000 | 0.000 | 0.333 | 0.000 | 0.625 | 0.000 | 0.000 | 0.625 | 0.575 |
| Entering Leg | 0 | 4 | 1 | 0 | 5 | 0 | 9 | 0 | 0 | 9 | 0 | 4 | 0 | 0 | 4 | 0 | 5 | 0 | 0 | 5 | 23 |
| Exiting Leg | | | | | 4 | | | | | 6 | | | | | 4 | | | | | 9 | 23 |
| Total | | | | | 9 | | | | | 15 | | | | | 8 | | | | | 14 | 46 |

PDI File #: **175708 H**
Location: **N: L Street S: L Street**
Location: **E: East 8th Street W: East 8th Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Bicycles (on Roadway and Crosswalks)

| | L Street | | | | | | | East 8th Street | | | | | | | L Street | | | | | | | East 8th Street | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | East | | | | | | | South | | | | | | | West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| Approach % | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 33.3 | 66.7 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total % | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 20.0 | 40.0 | 0.0 | 0.0 | 0.0 | 0.0 | 60.0 | 0.0 | 40.0 | 0.0 | 0.0 | 0.0 | 0.0 | 40.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Exiting Leg Total | | | | | | | 3 | | | | | | | 0 | | | | | | | 0 | | | | | | | 2 | 5 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:45 AM | L Street | | | | | | | East 8th Street | | | | | | | L Street | | | | | | | East 8th Street | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | East | | | | | | | South | | | | | | | West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| % Approach Total | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 33.3 | 66.7 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| PHF | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.250 | 0.500 | 0.000 | 0.000 | 0.000 | 0.000 | 0.750 | 0.000 | 0.250 | 0.000 | 0.000 | 0.000 | 0.000 | 0.250 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.500 |
| Entering Leg | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| Exiting Leg | | | | | | | 2 | | | | | | | 0 | | | | | | | 0 | | | | | | | 2 | 4 |
| Total | | | | | | | 2 | | | | | | | 3 | | | | | | | 1 | | | | | | | 2 | 8 |

PDI File #: **175708 H**
Location: **N: L Street S: L Street**
Location: **E: East 8th Street W: East 8th Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Pedestrians

| | L Street North | | | | | | | East 8th Street East | | | | | | | L Street South | | | | | | | East 8th Street West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:00 AM | 0 | 0 | 0 | 0 | 3 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 6 | 6 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 4 | 3 | 7 | 19 |
| 7:15 AM | 0 | 0 | 0 | 0 | 5 | 2 | 7 | 0 | 0 | 0 | 0 | 2 | 3 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 6 | 3 | 9 | 22 |
| 7:30 AM | 0 | 0 | 0 | 0 | 2 | 2 | 4 | 0 | 0 | 0 | 0 | 3 | 5 | 8 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 3 | 5 | 8 | 22 |
| 7:45 AM | 0 | 0 | 0 | 0 | 5 | 4 | 9 | 0 | 0 | 0 | 0 | 1 | 8 | 9 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 9 | 3 | 12 | 33 |
| Total | 0 | 0 | 0 | 0 | 15 | 9 | 24 | 0 | 0 | 0 | 0 | 6 | 22 | 28 | 0 | 0 | 0 | 0 | 3 | 5 | 8 | 0 | 0 | 0 | 0 | 22 | 14 | 36 | 96 |
| 8:00 AM | 0 | 0 | 0 | 0 | 5 | 1 | 6 | 0 | 0 | 0 | 0 | 1 | 4 | 5 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 9 | 0 | 9 | 21 |
| 8:15 AM | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 5 | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 3 | 2 | 5 | 14 |
| 8:30 AM | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 10 | 1 | 11 | 15 |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 3 | 4 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 3 | 7 | 15 |
| Total | 0 | 0 | 0 | 0 | 8 | 3 | 11 | 0 | 0 | 0 | 0 | 6 | 13 | 19 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 26 | 6 | 32 | 65 |
| Grand Total | 0 | 0 | 0 | 0 | 23 | 12 | 35 | 0 | 0 | 0 | 0 | 12 | 35 | 47 | 0 | 0 | 0 | 0 | 4 | 7 | 11 | 0 | 0 | 0 | 0 | 48 | 20 | 68 | 161 |
| Approach % | 0.0 | 0.0 | 0.0 | 0.0 | 65.7 | 34.3 | | 0.0 | 0.0 | 0.0 | 0.0 | 25.5 | 74.5 | | 0.0 | 0.0 | 0.0 | 0.0 | 36.4 | 63.6 | | 0.0 | 0.0 | 0.0 | 0.0 | 70.6 | 29.4 | | |
| Total % | 0.0 | 0.0 | 0.0 | 0.0 | 14.3 | 7.5 | 21.7 | 0.0 | 0.0 | 0.0 | 0.0 | 7.5 | 21.7 | 29.2 | 0.0 | 0.0 | 0.0 | 0.0 | 2.5 | 4.3 | 6.8 | 0.0 | 0.0 | 0.0 | 0.0 | 29.8 | 12.4 | 42.2 | |
| Exiting Leg Total | | | | | | | 35 | | | | | | | 47 | | | | | | | 11 | | | | | | | 68 | 161 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:15 AM | L Street North | | | | | | | East 8th Street East | | | | | | | L Street South | | | | | | | East 8th Street West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:15 AM | 0 | 0 | 0 | 0 | 5 | 2 | 7 | 0 | 0 | 0 | 0 | 2 | 3 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 6 | 3 | 9 | 22 |
| 7:30 AM | 0 | 0 | 0 | 0 | 2 | 2 | 4 | 0 | 0 | 0 | 0 | 3 | 5 | 8 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 3 | 5 | 8 | 22 |
| 7:45 AM | 0 | 0 | 0 | 0 | 5 | 4 | 9 | 0 | 0 | 0 | 0 | 1 | 8 | 9 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 9 | 3 | 12 | 33 |
| 8:00 AM | 0 | 0 | 0 | 0 | 5 | 1 | 6 | 0 | 0 | 0 | 0 | 1 | 4 | 5 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 9 | 0 | 9 | 21 |
| Total Volume | 0 | 0 | 0 | 0 | 17 | 9 | 26 | 0 | 0 | 0 | 0 | 7 | 20 | 27 | 0 | 0 | 0 | 0 | 3 | 4 | 7 | 0 | 0 | 0 | 0 | 27 | 11 | 38 | 98 |
| % Approach Total | 0.0 | 0.0 | 0.0 | 0.0 | 65.4 | 34.6 | | 0.0 | 0.0 | 0.0 | 0.0 | 25.9 | 74.1 | | 0.0 | 0.0 | 0.0 | 0.0 | 42.9 | 57.1 | | 0.0 | 0.0 | 0.0 | 0.0 | 71.1 | 28.9 | | |
| PHF | 0.000 | 0.000 | 0.000 | 0.000 | 0.850 | 0.563 | 0.722 | 0.000 | 0.000 | 0.000 | 0.000 | 0.583 | 0.625 | 0.750 | 0.000 | 0.000 | 0.000 | 0.000 | 0.750 | 0.500 | 0.583 | 0.000 | 0.000 | 0.000 | 0.000 | 0.750 | 0.550 | 0.792 | 0.742 |
| Entering Leg | 0 | 0 | 0 | 0 | 17 | 9 | 26 | 0 | 0 | 0 | 0 | 7 | 20 | 27 | 0 | 0 | 0 | 0 | 3 | 4 | 7 | 0 | 0 | 0 | 0 | 27 | 11 | 38 | 98 |
| Exiting Leg | | | | | | | 26 | | | | | | | 27 | | | | | | | 7 | | | | | | | 38 | 98 |
| Total | | | | | | | 52 | | | | | | | 54 | | | | | | | 14 | | | | | | | 76 | 196 |

PDI File #: **175708 HH**
Location: **N: L Street S: L Street**
Location: **E: East 8th Street W: East 8th Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Cars, Heavy Vehicles, and Buses (Combined)

| | L Street | | | | | East 8th Street | | | | | L Street | | | | | East 8th Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 5 | 114 | 2 | 0 | 121 | 4 | 4 | 0 | 0 | 8 | 2 | 70 | 1 | 0 | 73 | 0 | 8 | 5 | 0 | 13 | 215 |
| 4:15 PM | 5 | 143 | 3 | 0 | 151 | 1 | 4 | 0 | 0 | 5 | 1 | 97 | 0 | 0 | 98 | 1 | 8 | 5 | 0 | 14 | 268 |
| 4:30 PM | 6 | 117 | 8 | 0 | 131 | 4 | 10 | 1 | 0 | 15 | 1 | 124 | 1 | 0 | 126 | 2 | 8 | 3 | 0 | 13 | 285 |
| 4:45 PM | 2 | 103 | 0 | 0 | 105 | 2 | 6 | 0 | 0 | 8 | 1 | 104 | 3 | 0 | 108 | 5 | 7 | 4 | 0 | 16 | 237 |
| Total | 18 | 477 | 13 | 0 | 508 | 11 | 24 | 1 | 0 | 36 | 5 | 395 | 5 | 0 | 405 | 8 | 31 | 17 | 0 | 56 | 1005 |
| 5:00 PM | 6 | 104 | 3 | 0 | 113 | 2 | 5 | 0 | 0 | 7 | 3 | 131 | 3 | 0 | 137 | 3 | 4 | 4 | 0 | 11 | 268 |
| 5:15 PM | 6 | 110 | 5 | 0 | 121 | 1 | 4 | 2 | 0 | 7 | 3 | 113 | 8 | 0 | 124 | 2 | 7 | 6 | 0 | 15 | 267 |
| 5:30 PM | 4 | 100 | 3 | 0 | 107 | 4 | 1 | 1 | 0 | 6 | 5 | 111 | 4 | 0 | 120 | 4 | 7 | 6 | 0 | 17 | 250 |
| 5:45 PM | 7 | 79 | 8 | 0 | 94 | 2 | 3 | 0 | 0 | 5 | 3 | 91 | 2 | 0 | 96 | 4 | 8 | 5 | 0 | 17 | 212 |
| Total | 23 | 393 | 19 | 0 | 435 | 9 | 13 | 3 | 0 | 25 | 14 | 446 | 17 | 0 | 477 | 13 | 26 | 21 | 0 | 60 | 997 |
| Grand Total | 41 | 870 | 32 | 0 | 943 | 20 | 37 | 4 | 0 | 61 | 19 | 841 | 22 | 0 | 882 | 21 | 57 | 38 | 0 | 116 | 2002 |
| Approach % | 4.3 | 92.3 | 3.4 | 0.0 | | 32.8 | 60.7 | 6.6 | 0.0 | | 2.2 | 95.4 | 2.5 | 0.0 | | 18.1 | 49.1 | 32.8 | 0.0 | | |
| Total % | 2.0 | 43.5 | 1.6 | 0.0 | 47.1 | 1.0 | 1.8 | 0.2 | 0.0 | 3.0 | 0.9 | 42.0 | 1.1 | 0.0 | 44.1 | 1.0 | 2.8 | 1.9 | 0.0 | 5.8 | |
| Exiting Leg Total | | | | | 899 | | | | | 108 | | | | | 895 | | | | | 100 | 2002 |
| Cars | 40 | 863 | 32 | 0 | 935 | 20 | 31 | 4 | 0 | 55 | 19 | 833 | 22 | 0 | 874 | 21 | 49 | 36 | 0 | 106 | 1970 |
| % Cars | 97.6 | 99.2 | 100.0 | 0.0 | 99.2 | 100.0 | 83.8 | 100.0 | 0.0 | 90.2 | 100.0 | 99.0 | 100.0 | 0.0 | 99.1 | 100.0 | 86.0 | 94.7 | 0.0 | 91.4 | 98.4 |
| Exiting Leg Total | | | | | 889 | | | | | 100 | | | | | 888 | | | | | 93 | 1970 |
| Heavy Vehicles | 0 | 4 | 0 | 0 | 4 | 0 | 1 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 1 | 9 |
| % Heavy Vehicles | 0.0 | 0.5 | 0.0 | 0.0 | 0.4 | 0.0 | 2.7 | 0.0 | 0.0 | 1.6 | 0.0 | 0.4 | 0.0 | 0.0 | 0.3 | 0.0 | 1.8 | 0.0 | 0.0 | 0.9 | 0.4 |
| Exiting Leg Total | | | | | 3 | | | | | 1 | | | | | 4 | | | | | 1 | 9 |
| Buses | 1 | 3 | 0 | 0 | 4 | 0 | 5 | 0 | 0 | 5 | 0 | 5 | 0 | 0 | 5 | 0 | 7 | 2 | 0 | 9 | 23 |
| % Buses | 2.4 | 0.3 | 0.0 | 0.0 | 0.4 | 0.0 | 13.5 | 0.0 | 0.0 | 8.2 | 0.0 | 0.6 | 0.0 | 0.0 | 0.6 | 0.0 | 12.3 | 5.3 | 0.0 | 7.8 | 1.1 |
| Exiting Leg Total | | | | | 7 | | | | | 7 | | | | | 3 | | | | | 6 | 23 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:15 PM | L Street | | | | | East 8th Street | | | | | L Street | | | | | East 8th Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:15 PM | 5 | 143 | 3 | 0 | 151 | 1 | 4 | 0 | 0 | 5 | 1 | 97 | 0 | 0 | 98 | 1 | 8 | 5 | 0 | 14 | 268 |
| 4:30 PM | 6 | 117 | 8 | 0 | 131 | 4 | 10 | 1 | 0 | 15 | 1 | 124 | 1 | 0 | 126 | 2 | 8 | 3 | 0 | 13 | 285 |
| 4:45 PM | 2 | 103 | 0 | 0 | 105 | 2 | 6 | 0 | 0 | 8 | 1 | 104 | 3 | 0 | 108 | 5 | 7 | 4 | 0 | 16 | 237 |
| 5:00 PM | 6 | 104 | 3 | 0 | 113 | 2 | 5 | 0 | 0 | 7 | 3 | 131 | 3 | 0 | 137 | 3 | 4 | 4 | 0 | 11 | 268 |
| Total Volume | 19 | 467 | 14 | 0 | 500 | 9 | 25 | 1 | 0 | 35 | 6 | 456 | 7 | 0 | 469 | 11 | 27 | 16 | 0 | 54 | 1058 |
| % Approach Total | 3.8 | 93.4 | 2.8 | 0.0 | | 25.7 | 71.4 | 2.9 | 0.0 | | 1.3 | 97.2 | 1.5 | 0.0 | | 20.4 | 50.0 | 29.6 | 0.0 | | |
| PHF | 0.792 | 0.816 | 0.438 | 0.000 | 0.828 | 0.563 | 0.625 | 0.250 | 0.000 | 0.583 | 0.500 | 0.870 | 0.583 | 0.000 | 0.856 | 0.550 | 0.844 | 0.800 | 0.000 | 0.844 | 0.928 |
| Cars | 18 | 462 | 14 | 0 | 494 | 9 | 21 | 1 | 0 | 31 | 6 | 448 | 7 | 0 | 461 | 11 | 23 | 15 | 0 | 49 | 1035 |
| Cars % | 94.7 | 98.9 | 100.0 | 0.0 | 98.8 | 100.0 | 84.0 | 100.0 | 0.0 | 88.6 | 100.0 | 98.2 | 100.0 | 0.0 | 98.3 | 100.0 | 85.2 | 93.8 | 0.0 | 90.7 | 97.8 |
| Heavy Vehicles | 0 | 3 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 1 | 8 |
| Heavy Vehicles % | 0.0 | 0.6 | 0.0 | 0.0 | 0.6 | 0.0 | 4.0 | 0.0 | 0.0 | 2.9 | 0.0 | 0.7 | 0.0 | 0.0 | 0.6 | 0.0 | 3.7 | 0.0 | 0.0 | 1.9 | 0.8 |
| Buses | 1 | 2 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 3 | 0 | 5 | 0 | 0 | 5 | 0 | 3 | 1 | 0 | 4 | 15 |
| Buses % | 5.3 | 0.4 | 0.0 | 0.0 | 0.6 | 0.0 | 12.0 | 0.0 | 0.0 | 8.6 | 0.0 | 1.1 | 0.0 | 0.0 | 1.1 | 0.0 | 11.1 | 6.3 | 0.0 | 7.4 | 1.4 |
| Cars Enter Leg | 18 | 462 | 14 | 0 | 494 | 9 | 21 | 1 | 0 | 31 | 6 | 448 | 7 | 0 | 461 | 11 | 23 | 15 | 0 | 49 | 1035 |
| Heavy Enter Leg | 0 | 3 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 1 | 8 |
| Bus Enter Leg | 1 | 2 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 3 | 0 | 5 | 0 | 0 | 5 | 0 | 3 | 1 | 0 | 4 | 15 |
| Total Entering Leg | 19 | 467 | 14 | 0 | 500 | 9 | 25 | 1 | 0 | 35 | 6 | 456 | 7 | 0 | 469 | 11 | 27 | 16 | 0 | 54 | 1058 |
| Cars Exiting Leg | | | | | 472 | | | | | 43 | | | | | 474 | | | | | 46 | 1035 |
| Heavy Exiting Leg | | | | | 3 | | | | | 1 | | | | | 3 | | | | | 1 | 8 |
| Buses Exiting Leg | | | | | 6 | | | | | 3 | | | | | 2 | | | | | 4 | 15 |
| Total Exiting Leg | | | | | 481 | | | | | 47 | | | | | 479 | | | | | 51 | 1058 |

PDI File #: **175708 HH**
Location: **N: L Street S: L Street**
Location: **E: East 8th Street W: East 8th Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Cars

| | L Street | | | | | East 8th Street | | | | | L Street | | | | | East 8th Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 5 | 114 | 2 | 0 | 121 | 4 | 3 | 0 | 0 | 7 | 2 | 70 | 1 | 0 | 73 | 0 | 7 | 5 | 0 | 12 | 213 |
| 4:15 PM | 5 | 141 | 3 | 0 | 149 | 1 | 3 | 0 | 0 | 4 | 1 | 95 | 0 | 0 | 96 | 1 | 7 | 5 | 0 | 13 | 262 |
| 4:30 PM | 6 | 117 | 8 | 0 | 131 | 4 | 8 | 1 | 0 | 13 | 1 | 120 | 1 | 0 | 122 | 2 | 7 | 3 | 0 | 12 | 278 |
| 4:45 PM | 2 | 101 | 0 | 0 | 103 | 2 | 5 | 0 | 0 | 7 | 1 | 103 | 3 | 0 | 107 | 5 | 5 | 4 | 0 | 14 | 231 |
| Total | 18 | 473 | 13 | 0 | 504 | 11 | 19 | 1 | 0 | 31 | 5 | 388 | 5 | 0 | 398 | 8 | 26 | 17 | 0 | 51 | 984 |
| 5:00 PM | 5 | 103 | 3 | 0 | 111 | 2 | 5 | 0 | 0 | 7 | 3 | 130 | 3 | 0 | 136 | 3 | 4 | 3 | 0 | 10 | 264 |
| 5:15 PM | 6 | 110 | 5 | 0 | 121 | 1 | 4 | 2 | 0 | 7 | 3 | 113 | 8 | 0 | 124 | 2 | 5 | 6 | 0 | 13 | 265 |
| 5:30 PM | 4 | 100 | 3 | 0 | 107 | 4 | 0 | 1 | 0 | 5 | 5 | 111 | 4 | 0 | 120 | 4 | 7 | 5 | 0 | 16 | 248 |
| 5:45 PM | 7 | 77 | 8 | 0 | 92 | 2 | 3 | 0 | 0 | 5 | 3 | 91 | 2 | 0 | 96 | 4 | 7 | 5 | 0 | 16 | 209 |
| Total | 22 | 390 | 19 | 0 | 431 | 9 | 12 | 3 | 0 | 24 | 14 | 445 | 17 | 0 | 476 | 13 | 23 | 19 | 0 | 55 | 986 |
| Grand Total | 40 | 863 | 32 | 0 | 935 | 20 | 31 | 4 | 0 | 55 | 19 | 833 | 22 | 0 | 874 | 21 | 49 | 36 | 0 | 106 | 1970 |
| Approach % | 4.3 | 92.3 | 3.4 | 0.0 | | 36.4 | 56.4 | 7.3 | 0.0 | | 2.2 | 95.3 | 2.5 | 0.0 | | 19.8 | 46.2 | 34.0 | 0.0 | | |
| Total % | 2.0 | 43.8 | 1.6 | 0.0 | 47.5 | 1.0 | 1.6 | 0.2 | 0.0 | 2.8 | 1.0 | 42.3 | 1.1 | 0.0 | 44.4 | 1.1 | 2.5 | 1.8 | 0.0 | 5.4 | |
| Exiting Leg Total | | | | | 889 | | | | | 100 | | | | | 888 | | | | | 93 | 1970 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:30 PM | L Street | | | | | East 8th Street | | | | | L Street | | | | | East 8th Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:30 PM | 6 | 117 | 8 | 0 | 131 | 4 | 8 | 1 | 0 | 13 | 1 | 120 | 1 | 0 | 122 | 2 | 7 | 3 | 0 | 12 | 278 |
| 4:45 PM | 2 | 101 | 0 | 0 | 103 | 2 | 5 | 0 | 0 | 7 | 1 | 103 | 3 | 0 | 107 | 5 | 5 | 4 | 0 | 14 | 231 |
| 5:00 PM | 5 | 103 | 3 | 0 | 111 | 2 | 5 | 0 | 0 | 7 | 3 | 130 | 3 | 0 | 136 | 3 | 4 | 3 | 0 | 10 | 264 |
| 5:15 PM | 6 | 110 | 5 | 0 | 121 | 1 | 4 | 2 | 0 | 7 | 3 | 113 | 8 | 0 | 124 | 2 | 5 | 6 | 0 | 13 | 265 |
| Total Volume | 19 | 431 | 16 | 0 | 466 | 9 | 22 | 3 | 0 | 34 | 8 | 466 | 15 | 0 | 489 | 12 | 21 | 16 | 0 | 49 | 1038 |
| % Approach Total | 4.1 | 92.5 | 3.4 | 0.0 | | 26.5 | 64.7 | 8.8 | 0.0 | | 1.6 | 95.3 | 3.1 | 0.0 | | 24.5 | 42.9 | 32.7 | 0.0 | | |
| PHF | 0.792 | 0.921 | 0.500 | 0.000 | 0.889 | 0.563 | 0.688 | 0.375 | 0.000 | 0.654 | 0.667 | 0.896 | 0.469 | 0.000 | 0.899 | 0.600 | 0.750 | 0.667 | 0.000 | 0.875 | 0.933 |
| Entering Leg | 19 | 431 | 16 | 0 | 466 | 9 | 22 | 3 | 0 | 34 | 8 | 466 | 15 | 0 | 489 | 12 | 21 | 16 | 0 | 49 | 1038 |
| Exiting Leg | | | | | 491 | | | | | 45 | | | | | 446 | | | | | 56 | 1038 |
| Total | | | | | 957 | | | | | 79 | | | | | 935 | | | | | 105 | 2076 |

PDI File #: **175708 HH**
Location: **N: L Street S: L Street**
Location: **E: East 8th Street W: East 8th Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Heavy Vehicles

| | L Street | | | | | East 8th Street | | | | | L Street | | | | | East 8th Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:15 PM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 3 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| 4:45 PM | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 3 |
| Total | 0 | 3 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 1 | 8 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:45 PM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Grand Total | 0 | 4 | 0 | 0 | 4 | 0 | 1 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 1 | 9 |
| Approach % | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | |
| Total % | 0.0 | 44.4 | 0.0 | 0.0 | 44.4 | 0.0 | 11.1 | 0.0 | 0.0 | 11.1 | 0.0 | 33.3 | 0.0 | 0.0 | 33.3 | 0.0 | 11.1 | 0.0 | 0.0 | 11.1 | |
| Exiting Leg Total | | | | | 3 | | | | | 1 | | | | | 4 | | | | | 1 | 9 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:00 PM | L Street | | | | | East 8th Street | | | | | L Street | | | | | East 8th Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:15 PM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 3 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| 4:45 PM | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 3 |
| Total Volume | 0 | 3 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 1 | 8 |
| % Approach Total | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | |
| PHF | 0.000 | 0.375 | 0.000 | 0.000 | 0.375 | 0.000 | 0.250 | 0.000 | 0.000 | 0.250 | 0.000 | 0.375 | 0.000 | 0.000 | 0.375 | 0.000 | 0.250 | 0.000 | 0.000 | 0.250 | 0.667 |
| Entering Leg | 0 | 3 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 1 | 8 |
| Exiting Leg | | | | | 3 | | | | | 1 | | | | | 3 | | | | | 1 | 8 |
| Total | | | | | 6 | | | | | 2 | | | | | 6 | | | | | 2 | 16 |

PDI File #: **175708 HH**
Location: **N: L Street S: L Street**
Location: **E: East 8th Street W: East 8th Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Buses

| | L Street | | | | | East 8th Street | | | | | L Street | | | | | East 8th Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 2 |
| 4:15 PM | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 3 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 1 | 5 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 3 |
| Total | 0 | 1 | 0 | 0 | 1 | 0 | 4 | 0 | 0 | 4 | 0 | 4 | 0 | 0 | 4 | 0 | 4 | 0 | 0 | 4 | 13 |
| 5:00 PM | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 4 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 2 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 |
| 5:45 PM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 2 |
| Total | 1 | 2 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 3 | 2 | 0 | 5 | 10 |
| Grand Total | 1 | 3 | 0 | 0 | 4 | 0 | 5 | 0 | 0 | 5 | 0 | 5 | 0 | 0 | 5 | 0 | 7 | 2 | 0 | 9 | 23 |
| Approach % | 25.0 | 75.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 77.8 | 22.2 | 0.0 | | |
| Total % | 4.3 | 13.0 | 0.0 | 0.0 | 17.4 | 0.0 | 21.7 | 0.0 | 0.0 | 21.7 | 0.0 | 21.7 | 0.0 | 0.0 | 21.7 | 0.0 | 30.4 | 8.7 | 0.0 | 39.1 | |
| Exiting Leg Total | | | | | 7 | | | | | 7 | | | | | 3 | | | | | 6 | 23 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:00 PM | L Street | | | | | East 8th Street | | | | | L Street | | | | | East 8th Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 2 |
| 4:15 PM | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 3 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 1 | 5 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 3 |
| Total Volume | 0 | 1 | 0 | 0 | 1 | 0 | 4 | 0 | 0 | 4 | 0 | 4 | 0 | 0 | 4 | 0 | 4 | 0 | 0 | 4 | 13 |
| % Approach Total | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | |
| PHF | 0.000 | 0.250 | 0.000 | 0.000 | 0.250 | 0.000 | 1.000 | 0.000 | 0.000 | 1.000 | 0.000 | 0.333 | 0.000 | 0.000 | 0.333 | 0.000 | 1.000 | 0.000 | 0.000 | 1.000 | 0.650 |
| Entering Leg | 0 | 1 | 0 | 0 | 1 | 0 | 4 | 0 | 0 | 4 | 0 | 4 | 0 | 0 | 4 | 0 | 4 | 0 | 0 | 4 | 13 |
| Exiting Leg | | | | | 4 | | | | | 4 | | | | | 1 | | | | | 4 | 13 |
| Total | | | | | 5 | | | | | 8 | | | | | 5 | | | | | 8 | 26 |

PDI File #: **175708 HH**
Location: **N: L Street S: L Street**
Location: **E: East 8th Street W: East 8th Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Bicycles (on Roadway and Crosswalks)

| | L Street North | | | | | | | East 8th Street East | | | | | | | L Street South | | | | | | | East 8th Street West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:15 PM | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| 4:45 PM | 1 | 2 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| Total | 1 | 2 | 2 | 0 | 0 | 0 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 7 |
| 5:00 PM | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| 5:45 PM | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 3 |
| Grand Total | 1 | 4 | 2 | 0 | 0 | 0 | 7 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 10 |
| Approach % | 14.3 | 57.1 | 28.6 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 50.0 | 50.0 | | |
| Total % | 10.0 | 40.0 | 20.0 | 0.0 | 0.0 | 0.0 | 70.0 | 0.0 | 0.0 | 10.0 | 0.0 | 0.0 | 0.0 | 10.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 10.0 | 10.0 | 20.0 | |
| Exiting Leg Total | | | | | | | 0 | | | | | | | 2 | | | | | | | 5 | | | | | | | 3 | 10 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:15 PM | L Street North | | | | | | | East 8th Street East | | | | | | | L Street South | | | | | | | East 8th Street West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 4:15 PM | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| 4:45 PM | 1 | 2 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 5:00 PM | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total Volume | 1 | 3 | 2 | 0 | 0 | 0 | 6 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 8 |
| % Approach Total | 16.7 | 50.0 | 33.3 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | | |
| PHF | 0.250 | 0.375 | 0.250 | 0.000 | 0.000 | 0.000 | 0.500 | 0.000 | 0.000 | 0.250 | 0.000 | 0.000 | 0.000 | 0.250 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.250 | 0.250 | 0.500 |
| Entering Leg | 1 | 3 | 2 | 0 | 0 | 0 | 6 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 8 |
| Exiting Leg | | | | | | | 0 | | | | | | | 2 | | | | | | | 4 | | | | | | | 2 | 8 |
| Total | | | | | | | 6 | | | | | | | 3 | | | | | | | 4 | | | | | | | 3 | 16 |

PDI File #: **175708 HH**
Location: **N: L Street S: L Street**
Location: **E: East 8th Street W: East 8th Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Pedestrians

| | L Street North | | | | | | | East 8th Street East | | | | | | | L Street South | | | | | | | East 8th Street West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 3 | 2 | 5 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 3 | 9 | 12 | 22 |
| 4:15 PM | 0 | 0 | 0 | 0 | 2 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 3 | 7 | 10 | 17 |
| 4:30 PM | 0 | 0 | 0 | 0 | 6 | 2 | 8 | 0 | 0 | 0 | 0 | 5 | 3 | 8 | 0 | 0 | 0 | 0 | 6 | 1 | 7 | 0 | 0 | 0 | 0 | 10 | 6 | 16 | 39 |
| 4:45 PM | 0 | 0 | 0 | 0 | 2 | 2 | 4 | 0 | 0 | 0 | 0 | 6 | 6 | 12 | 0 | 0 | 0 | 0 | 3 | 6 | 9 | 0 | 0 | 0 | 0 | 9 | 10 | 19 | 44 |
| Total | 0 | 0 | 0 | 0 | 11 | 8 | 19 | 0 | 0 | 0 | 0 | 14 | 13 | 27 | 0 | 0 | 0 | 0 | 10 | 9 | 19 | 0 | 0 | 0 | 0 | 25 | 32 | 57 | 122 |
| 5:00 PM | 0 | 0 | 0 | 0 | 2 | 4 | 6 | 0 | 0 | 0 | 0 | 4 | 2 | 6 | 0 | 0 | 0 | 0 | 6 | 1 | 7 | 0 | 0 | 0 | 0 | 2 | 3 | 5 | 24 |
| 5:15 PM | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 4 | 2 | 6 | 0 | 0 | 0 | 0 | 4 | 6 | 10 | 0 | 0 | 0 | 0 | 1 | 17 | 18 | 36 |
| 5:30 PM | 0 | 0 | 0 | 0 | 3 | 2 | 5 | 0 | 0 | 0 | 0 | 6 | 3 | 9 | 0 | 0 | 0 | 0 | 3 | 4 | 7 | 0 | 0 | 0 | 0 | 6 | 9 | 15 | 36 |
| 5:45 PM | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 7 | 4 | 11 | 0 | 0 | 0 | 0 | 5 | 9 | 14 | 0 | 0 | 0 | 0 | 7 | 13 | 20 | 47 |
| Total | 0 | 0 | 0 | 0 | 8 | 7 | 15 | 0 | 0 | 0 | 0 | 21 | 11 | 32 | 0 | 0 | 0 | 0 | 18 | 20 | 38 | 0 | 0 | 0 | 0 | 16 | 42 | 58 | 143 |
| Grand Total | 0 | 0 | 0 | 0 | 19 | 15 | 34 | 0 | 0 | 0 | 0 | 35 | 24 | 59 | 0 | 0 | 0 | 0 | 28 | 29 | 57 | 0 | 0 | 0 | 0 | 41 | 74 | 115 | 265 |
| Approach % | 0.0 | 0.0 | 0.0 | 0.0 | 55.9 | 44.1 | | 0.0 | 0.0 | 0.0 | 0.0 | 59.3 | 40.7 | | 0.0 | 0.0 | 0.0 | 0.0 | 49.1 | 50.9 | | 0.0 | 0.0 | 0.0 | 0.0 | 35.7 | 64.3 | | |
| Total % | 0.0 | 0.0 | 0.0 | 0.0 | 7.2 | 5.7 | 12.8 | 0.0 | 0.0 | 0.0 | 0.0 | 13.2 | 9.1 | 22.3 | 0.0 | 0.0 | 0.0 | 0.0 | 10.6 | 10.9 | 21.5 | 0.0 | 0.0 | 0.0 | 0.0 | 15.5 | 27.9 | 43.4 | |
| Exiting Leg Total | | | | | | | 34 | | | | | | | 59 | | | | | | | 57 | | | | | | | 115 | 265 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:30 PM | L Street North | | | | | | | East 8th Street East | | | | | | | L Street South | | | | | | | East 8th Street West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 4:30 PM | 0 | 0 | 0 | 0 | 6 | 2 | 8 | 0 | 0 | 0 | 0 | 5 | 3 | 8 | 0 | 0 | 0 | 0 | 6 | 1 | 7 | 0 | 0 | 0 | 0 | 10 | 6 | 16 | 39 |
| 4:45 PM | 0 | 0 | 0 | 0 | 2 | 2 | 4 | 0 | 0 | 0 | 0 | 6 | 6 | 12 | 0 | 0 | 0 | 0 | 3 | 6 | 9 | 0 | 0 | 0 | 0 | 9 | 10 | 19 | 44 |
| 5:00 PM | 0 | 0 | 0 | 0 | 2 | 4 | 6 | 0 | 0 | 0 | 0 | 4 | 2 | 6 | 0 | 0 | 0 | 0 | 6 | 1 | 7 | 0 | 0 | 0 | 0 | 2 | 3 | 5 | 24 |
| 5:15 PM | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 4 | 2 | 6 | 0 | 0 | 0 | 0 | 4 | 6 | 10 | 0 | 0 | 0 | 0 | 1 | 17 | 18 | 36 |
| Total Volume | 0 | 0 | 0 | 0 | 12 | 8 | 20 | 0 | 0 | 0 | 0 | 19 | 13 | 32 | 0 | 0 | 0 | 0 | 19 | 14 | 33 | 0 | 0 | 0 | 0 | 22 | 36 | 58 | 143 |
| % Approach Total | 0.0 | 0.0 | 0.0 | 0.0 | 60.0 | 40.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 59.4 | 40.6 | | 0.0 | 0.0 | 0.0 | 0.0 | 57.6 | 42.4 | | 0.0 | 0.0 | 0.0 | 0.0 | 37.9 | 62.1 | | |
| PHF | 0.000 | 0.000 | 0.000 | 0.000 | 0.500 | 0.500 | 0.625 | 0.000 | 0.000 | 0.000 | 0.000 | 0.792 | 0.542 | 0.667 | 0.000 | 0.000 | 0.000 | 0.000 | 0.792 | 0.583 | 0.825 | 0.000 | 0.000 | 0.000 | 0.000 | 0.550 | 0.529 | 0.763 | 0.813 |
| Entering Leg | 0 | 0 | 0 | 0 | 12 | 8 | 20 | 0 | 0 | 0 | 0 | 19 | 13 | 32 | 0 | 0 | 0 | 0 | 19 | 14 | 33 | 0 | 0 | 0 | 0 | 22 | 36 | 58 | 143 |
| Exiting Leg | | | | | | | 20 | | | | | | | 32 | | | | | | | 33 | | | | | | | 58 | 143 |
| Total | | | | | | | 40 | | | | | | | 64 | | | | | | | 66 | | | | | | | 116 | 286 |

PDI File #: **175708 I**
Location: **N: L Street NE: Columbia Road NW: Columbia Road**
Location: **E: William J. Day Boulevard W: William J. Day Boulevard**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Cars, Heavy Vehicles, and Buses (Combined)

| | L Street | | | | | | Columbia Road | | | | | | William J. Day Boulevard | | | | | | William J. Day Boulevard | | | | | | Columbia Road | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | Northeast | | | | | | East | | | | | | West | | | | | | Northwest | | | | | | |
| | Hard Righ | Right | Left | Hard Left | U-Turn | Total | Hard Righ | Right | Bear Righ | Hard Left | U-Turn | Total | Hard Righ | Right | Bear Righ | Thru | U-Turn | Total | Thru | Bear Left | Left | Hard Left | U-Turn | Total | Hard Righ | Bear Left | Left | Hard Left | U-Turn | Total | Total |
| 7:00 AM | 3 | 24 | 0 | 1 | 0 | 28 | 1 | 5 | 0 | 0 | 0 | 6 | 0 | 1 | 0 | 64 | 0 | 65 | 71 | 1 | 108 | 2 | 0 | 182 | 4 | 0 | 0 | 2 | 0 | 6 | 287 |
| 7:15 AM | 3 | 36 | 0 | 3 | 0 | 42 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 5 | 0 | 67 | 0 | 72 | 86 | 0 | 122 | 6 | 0 | 214 | 0 | 2 | 2 | 4 | 0 | 8 | 337 |
| 7:30 AM | 1 | 38 | 1 | 1 | 0 | 41 | 5 | 3 | 0 | 0 | 0 | 8 | 0 | 1 | 0 | 76 | 0 | 77 | 78 | 1 | 114 | 6 | 1 | 200 | 1 | 0 | 1 | 7 | 0 | 9 | 335 |
| 7:45 AM | 4 | 27 | 0 | 2 | 0 | 33 | 5 | 5 | 0 | 0 | 0 | 10 | 1 | 6 | 0 | 89 | 0 | 96 | 94 | 1 | 80 | 5 | 0 | 180 | 3 | 0 | 4 | 6 | 0 | 13 | 332 |
| Total | 11 | 125 | 1 | 7 | 0 | 144 | 11 | 14 | 0 | 0 | 0 | 25 | 1 | 13 | 0 | 296 | 0 | 310 | 329 | 3 | 424 | 19 | 1 | 776 | 8 | 2 | 7 | 19 | 0 | 36 | 1291 |
| 8:00 AM | 4 | 34 | 0 | 1 | 0 | 39 | 2 | 3 | 1 | 0 | 0 | 6 | 0 | 3 | 0 | 71 | 0 | 74 | 110 | 2 | 112 | 9 | 0 | 233 | 0 | 0 | 0 | 0 | 0 | 0 | 352 |
| 8:15 AM | 3 | 28 | 1 | 0 | 0 | 32 | 0 | 4 | 0 | 3 | 0 | 7 | 1 | 0 | 0 | 100 | 0 | 101 | 89 | 1 | 109 | 6 | 0 | 205 | 2 | 0 | 2 | 0 | 0 | 4 | 349 |
| 8:30 AM | 4 | 30 | 6 | 0 | 0 | 40 | 1 | 5 | 0 | 0 | 0 | 6 | 0 | 2 | 0 | 60 | 0 | 62 | 75 | 0 | 107 | 6 | 0 | 188 | 1 | 0 | 1 | 0 | 0 | 2 | 298 |
| 8:45 AM | 3 | 40 | 0 | 1 | 0 | 44 | 1 | 2 | 0 | 0 | 1 | 4 | 0 | 1 | 0 | 56 | 0 | 57 | 61 | 1 | 104 | 2 | 0 | 168 | 4 | 0 | 0 | 0 | 0 | 4 | 277 |
| Total | 14 | 132 | 7 | 2 | 0 | 155 | 4 | 14 | 1 | 3 | 1 | 23 | 1 | 6 | 0 | 287 | 0 | 294 | 335 | 4 | 432 | 23 | 0 | 794 | 7 | 0 | 3 | 0 | 0 | 10 | 1276 |
| Grand Total | 25 | 257 | 8 | 9 | 0 | 299 | 15 | 28 | 1 | 3 | 1 | 48 | 2 | 19 | 0 | 583 | 0 | 604 | 664 | 7 | 856 | 42 | 1 | 1570 | 15 | 2 | 10 | 19 | 0 | 46 | 2567 |
| Approach % | 8.4 | 86.0 | 2.7 | 3.0 | 0.0 | | 31.3 | 58.3 | 2.1 | 6.3 | 2.1 | | 0.3 | 3.1 | 0.0 | 96.5 | 0.0 | | 42.3 | 0.4 | 54.5 | 2.7 | 0.1 | | 32.6 | 4.3 | 21.7 | 41.3 | 0.0 | | |
| Total % | 1.0 | 10.0 | 0.3 | 0.4 | 0.0 | 11.6 | 0.6 | 1.1 | 0.0 | 0.1 | 0.0 | 1.9 | 0.1 | 0.7 | 0.0 | 22.7 | 0.0 | 23.5 | 25.9 | 0.3 | 33.3 | 1.6 | 0.0 | 61.2 | 0.6 | 0.1 | 0.4 | 0.7 | 0.0 | 1.8 | |
| Exiting Leg Total | | | | | | 909 | | | | | | 29 | | | | | | 677 | | | | | | 857 | | | | | | 95 | 2567 |
| Cars | 23 | 252 | 8 | 8 | 0 | 291 | 15 | 25 | 1 | 3 | 1 | 45 | 2 | 19 | 0 | 578 | 0 | 599 | 653 | 7 | 844 | 41 | 1 | 1546 | 15 | 2 | 10 | 19 | 0 | 46 | 2527 |
| % Cars | 92.0 | 98.1 | 100.0 | 88.9 | 0.0 | 97.3 | 100.0 | 89.3 | 100.0 | 100.0 | 100.0 | 93.8 | 100.0 | 100.0 | 0.0 | 99.1 | 0.0 | 99.2 | 98.3 | 100.0 | 98.6 | 97.6 | 100.0 | 98.5 | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 | 100.0 | 98.4 |
| Exiting Leg Total | | | | | | 897 | | | | | | 28 | | | | | | 666 | | | | | | 847 | | | | | | 89 | 2527 |
| Heavy Vehicles | 1 | 3 | 0 | 0 | 0 | 4 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 2 | 6 | 0 | 3 | 1 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| % Heavy Vehicles | 4.0 | 1.2 | 0.0 | 0.0 | 0.0 | 1.3 | 0.0 | 7.1 | 0.0 | 0.0 | 0.0 | 4.2 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.3 | 0.9 | 0.0 | 0.4 | 2.4 | 0.0 | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 |
| Exiting Leg Total | | | | | | 3 | | | | | | 0 | | | | | | 6 | | | | | | 5 | | | | | | 4 | 18 |
| Buses | 1 | 2 | 0 | 1 | 0 | 4 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 3 | 5 | 0 | 9 | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 22 |
| % Buses | 4.0 | 0.8 | 0.0 | 11.1 | 0.0 | 1.3 | 0.0 | 3.6 | 0.0 | 0.0 | 0.0 | 2.1 | 0.0 | 0.0 | 0.0 | 0.5 | 0.0 | 0.5 | 0.8 | 0.0 | 1.1 | 0.0 | 0.0 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.9 |
| Exiting Leg Total | | | | | | 9 | | | | | | 1 | | | | | | 5 | | | | | | 5 | | | | | | 2 | 22 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:30 AM | L Street | | | | | | Columbia Road | | | | | | William J. Day Boulevard | | | | | | William J. Day Boulevard | | | | | | Columbia Road | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | Northeast | | | | | | East | | | | | | West | | | | | | Northwest | | | | | | |
| | Hard Righ | Right | Left | Hard Left | U-Turn | Total | Hard Righ | Right | Bear Righ | Hard Left | U-Turn | Total | Hard Righ | Right | Bear Righ | Thru | U-Turn | Total | Thru | Bear Left | Left | Hard Left | U-Turn | Total | Hard Righ | Bear Left | Left | Hard Left | U-Turn | Total | Total |
| 7:30 AM | 1 | 38 | 1 | 1 | 0 | 41 | 5 | 3 | 0 | 0 | 0 | 8 | 0 | 1 | 0 | 76 | 0 | 77 | 78 | 1 | 114 | 6 | 1 | 200 | 1 | 0 | 1 | 7 | 0 | 9 | 335 |
| 7:45 AM | 4 | 27 | 0 | 2 | 0 | 33 | 5 | 5 | 0 | 0 | 0 | 10 | 1 | 6 | 0 | 89 | 0 | 96 | 94 | 1 | 80 | 5 | 0 | 180 | 3 | 0 | 4 | 6 | 0 | 13 | 332 |
| 8:00 AM | 4 | 34 | 0 | 1 | 0 | 39 | 2 | 3 | 1 | 0 | 0 | 6 | 0 | 3 | 0 | 71 | 0 | 74 | 110 | 2 | 112 | 9 | 0 | 233 | 0 | 0 | 0 | 0 | 0 | 0 | 352 |
| 8:15 AM | 3 | 28 | 1 | 0 | 0 | 32 | 0 | 4 | 0 | 3 | 0 | 7 | 1 | 0 | 0 | 100 | 0 | 101 | 89 | 1 | 109 | 6 | 0 | 205 | 2 | 0 | 2 | 0 | 0 | 4 | 349 |
| Total Volume | 12 | 127 | 2 | 4 | 0 | 145 | 12 | 15 | 1 | 3 | 0 | 31 | 2 | 10 | 0 | 336 | 0 | 348 | 371 | 5 | 415 | 26 | 1 | 818 | 6 | 0 | 7 | 13 | 0 | 26 | 1368 |
| % Approach Total | 8.3 | 87.6 | 1.4 | 2.8 | 0.0 | | 38.7 | 48.4 | 3.2 | 9.7 | 0.0 | | 0.6 | 2.9 | 0.0 | 96.6 | 0.0 | | 45.4 | 0.6 | 50.7 | 3.2 | 0.1 | | 23.1 | 0.0 | 26.9 | 50.0 | 0.0 | | |
| PHF | 0.750 | 0.836 | 0.500 | 0.500 | 0.000 | 0.884 | 0.600 | 0.750 | 0.250 | 0.250 | 0.000 | 0.775 | 0.500 | 0.417 | 0.000 | 0.840 | 0.000 | 0.861 | 0.843 | 0.625 | 0.910 | 0.722 | 0.250 | 0.878 | 0.500 | 0.000 | 0.438 | 0.464 | 0.000 | 0.500 | 0.972 |
| Cars | 11 | 125 | 2 | 4 | 0 | 142 | 12 | 13 | 1 | 3 | 0 | 29 | 2 | 10 | 0 | 333 | 0 | 345 | 365 | 5 | 405 | 25 | 1 | 801 | 6 | 0 | 7 | 13 | 0 | 26 | 1343 |
| Cars % | 91.7 | 98.4 | 100.0 | 100.0 | 0.0 | 97.9 | 100.0 | 86.7 | 100.0 | 100.0 | 0.0 | 93.5 | 100.0 | 100.0 | 0.0 | 99.1 | 0.0 | 99.1 | 98.4 | 100.0 | 97.6 | 96.2 | 100.0 | 97.9 | 100.0 | 0.0 | 100.0 | 100.0 | 0.0 | 100.0 | 98.2 |
| Heavy Vehicles | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 2 | 4 | 0 | 2 | 1 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| Heavy Vehicles % | 0.0 | 1.6 | 0.0 | 0.0 | 0.0 | 1.4 | 0.0 | 6.7 | 0.0 | 0.0 | 0.0 | 3.2 | 0.0 | 0.0 | 0.0 | 0.6 | 0.0 | 0.6 | 1.1 | 0.0 | 0.5 | 3.8 | 0.0 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.9 |
| Buses | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 2 | 0 | 8 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| Buses % | 8.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 0.0 | 6.7 | 0.0 | 0.0 | 0.0 | 3.2 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.3 | 0.5 | 0.0 | 1.9 | 0.0 | 0.0 | 1.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 |
| Cars Enter Leg | 11 | 125 | 2 | 4 | 0 | 142 | 12 | 13 | 1 | 3 | 0 | 29 | 2 | 10 | 0 | 333 | 0 | 345 | 365 | 5 | 405 | 25 | 1 | 801 | 6 | 0 | 7 | 13 | 0 | 26 | 1343 |

PDI File #: **175708 I**
Location: **N: L Street NE: Columbia Road NW: Columbia Road**
Location: **E: William J. Day Boulevard W: William J. Day Boulevard**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Cars, Heavy Vehicles, and Buses (Combined)

| | L Street | | | | | | Columbia Road | | | | | | William J. Day Boulevard | | | | | | William J. Day Boulevard | | | | | | Columbia Road | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | Northeast | | | | | | East | | | | | | West | | | | | | Northwest | | | | | | |
| | Hard Righ | Right | Left | Hard Left | U-Turn | Total | Hard Righ | Right | Bear Righ | Hard Left | U-Turn | Total | Hard Righ | Right | Bear Righ | Thru | U-Turn | Total | Thru | Bear Left | Left | Hard Left | U-Turn | Total | Hard Righ | Bear Left | Left | Hard Left | U-Turn | Total | Total |
| Heavy Enter Leg | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 2 | 4 | 0 | 2 | 1 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| Bus Enter Leg | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 2 | 0 | 8 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| Total Entering Leg | 12 | 127 | 2 | 4 | 0 | 145 | 12 | 15 | 1 | 3 | 0 | 31 | 2 | 10 | 0 | 336 | 0 | 348 | 371 | 5 | 415 | 26 | 1 | 818 | 6 | 0 | 7 | 13 | 0 | 26 | 1368 |
| Cars Exiting Leg | | | | | | 440 | | | | | | 18 | | | | | | 370 | | | | | | 466 | | | | | | 49 | 1343 |
| Heavy Exiting Leg | | | | | | 2 | | | | | | 0 | | | | | | 4 | | | | | | 4 | | | | | | 2 | 12 |
| Buses Exiting Leg | | | | | | 8 | | | | | | 0 | | | | | | 2 | | | | | | 1 | | | | | | 2 | 13 |
| Total Exiting Leg | | | | | | 450 | | | | | | 18 | | | | | | 376 | | | | | | 471 | | | | | | 53 | 1368 |

PDI File #: **175708 I**
Location: **N: L Street NE: Columbia Road NW: Columbia Road**
Location: **E: William J. Day Boulevard W: William J. Day Boulevard**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Cars

| | L Street | | | | | | Columbia Road | | | | | | William J. Day Boulevard | | | | | | William J. Day Boulevard | | | | | | Columbia Road | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | Northeast | | | | | | East | | | | | | West | | | | | | Northwest | | | | | | |
| | Hard Righ | Right | Left | Hard Left | U-Turn | Total | Hard Righ | Right | Bear Righ | Hard Left | U-Turn | Total | Hard Righ | Right | Bear Righ | Thru | U-Turn | Total | Thru | Bear Left | Left | Hard Left | U-Turn | Total | Hard Righ | Bear Left | Left | Hard Left | U-Turn | Total | Total |
| 7:00 AM | 3 | 24 | 0 | 1 | 0 | 28 | 1 | 4 | 0 | 0 | 0 | 5 | 0 | 1 | 0 | 64 | 0 | 65 | 70 | 1 | 108 | 2 | 0 | 181 | 4 | 0 | 0 | 2 | 0 | 6 | 285 |
| 7:15 AM | 2 | 36 | 0 | 3 | 0 | 41 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 5 | 0 | 67 | 0 | 72 | 84 | 0 | 120 | 6 | 0 | 210 | 0 | 2 | 2 | 4 | 0 | 8 | 332 |
| 7:30 AM | 1 | 38 | 1 | 1 | 0 | 41 | 5 | 2 | 0 | 0 | 0 | 7 | 0 | 1 | 0 | 76 | 0 | 77 | 75 | 1 | 111 | 5 | 1 | 193 | 1 | 0 | 1 | 7 | 0 | 9 | 327 |
| 7:45 AM | 4 | 27 | 0 | 2 | 0 | 33 | 5 | 5 | 0 | 0 | 0 | 10 | 1 | 6 | 0 | 88 | 0 | 95 | 94 | 1 | 79 | 5 | 0 | 179 | 3 | 0 | 4 | 6 | 0 | 13 | 330 |
| Total | 10 | 125 | 1 | 7 | 0 | 143 | 11 | 12 | 0 | 0 | 0 | 23 | 1 | 13 | 0 | 295 | 0 | 309 | 323 | 3 | 418 | 18 | 1 | 763 | 8 | 2 | 7 | 19 | 0 | 36 | 1274 |
| 8:00 AM | 4 | 33 | 0 | 1 | 0 | 38 | 2 | 2 | 1 | 0 | 0 | 5 | 0 | 3 | 0 | 71 | 0 | 74 | 107 | 2 | 111 | 9 | 0 | 229 | 0 | 0 | 0 | 0 | 0 | 0 | 346 |
| 8:15 AM | 2 | 27 | 1 | 0 | 0 | 30 | 0 | 4 | 0 | 3 | 0 | 7 | 1 | 0 | 0 | 98 | 0 | 99 | 89 | 1 | 104 | 6 | 0 | 200 | 2 | 0 | 2 | 0 | 0 | 4 | 340 |
| 8:30 AM | 4 | 29 | 6 | 0 | 0 | 39 | 1 | 5 | 0 | 0 | 0 | 6 | 0 | 2 | 0 | 59 | 0 | 61 | 73 | 0 | 107 | 6 | 0 | 186 | 1 | 0 | 1 | 0 | 0 | 2 | 294 |
| 8:45 AM | 3 | 38 | 0 | 0 | 0 | 41 | 1 | 2 | 0 | 0 | 1 | 4 | 0 | 1 | 0 | 55 | 0 | 56 | 61 | 1 | 104 | 2 | 0 | 168 | 4 | 0 | 0 | 0 | 0 | 4 | 273 |
| Total | 13 | 127 | 7 | 1 | 0 | 148 | 4 | 13 | 1 | 3 | 1 | 22 | 1 | 6 | 0 | 283 | 0 | 290 | 330 | 4 | 426 | 23 | 0 | 783 | 7 | 0 | 3 | 0 | 0 | 10 | 1253 |
| Grand Total | 23 | 252 | 8 | 8 | 0 | 291 | 15 | 25 | 1 | 3 | 1 | 45 | 2 | 19 | 0 | 578 | 0 | 599 | 653 | 7 | 844 | 41 | 1 | 1546 | 15 | 2 | 10 | 19 | 0 | 46 | 2527 |
| Approach % | 7.9 | 86.6 | 2.7 | 2.7 | 0.0 | | 33.3 | 55.6 | 2.2 | 6.7 | 2.2 | | 0.3 | 3.2 | 0.0 | 96.5 | 0.0 | | 42.2 | 0.5 | 54.6 | 2.7 | 0.1 | | 32.6 | 4.3 | 21.7 | 41.3 | 0.0 | | |
| Total % | 0.9 | 10.0 | 0.3 | 0.3 | 0.0 | 11.5 | 0.6 | 1.0 | 0.0 | 0.1 | 0.0 | 1.8 | 0.1 | 0.8 | 0.0 | 22.9 | 0.0 | 23.7 | 25.8 | 0.3 | 33.4 | 1.6 | 0.0 | 61.2 | 0.6 | 0.1 | 0.4 | 0.8 | 0.0 | 1.8 | |
| Exiting Leg Total | | | | | | 897 | | | | | | 28 | | | | | | 666 | | | | | | 847 | | | | | | 89 | 2527 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:30 AM | L Street | | | | | | Columbia Road | | | | | | William J. Day Boulevard | | | | | | William J. Day Boulevard | | | | | | Columbia Road | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | Northeast | | | | | | East | | | | | | West | | | | | | Northwest | | | | | | |
| | Hard Righ | Right | Left | Hard Left | U-Turn | Total | Hard Righ | Right | Bear Righ | Hard Left | U-Turn | Total | Hard Righ | Right | Bear Righ | Thru | U-Turn | Total | Thru | Bear Left | Left | Hard Left | U-Turn | Total | Hard Righ | Bear Left | Left | Hard Left | U-Turn | Total | Total |
| 7:30 AM | 1 | 38 | 1 | 1 | 0 | 41 | 5 | 2 | 0 | 0 | 0 | 7 | 0 | 1 | 0 | 76 | 0 | 77 | 75 | 1 | 111 | 5 | 1 | 193 | 1 | 0 | 1 | 7 | 0 | 9 | 327 |
| 7:45 AM | 4 | 27 | 0 | 2 | 0 | 33 | 5 | 5 | 0 | 0 | 0 | 10 | 1 | 6 | 0 | 88 | 0 | 95 | 94 | 1 | 79 | 5 | 0 | 179 | 3 | 0 | 4 | 6 | 0 | 13 | 330 |
| 8:00 AM | 4 | 33 | 0 | 1 | 0 | 38 | 2 | 2 | 1 | 0 | 0 | 5 | 0 | 3 | 0 | 71 | 0 | 74 | 107 | 2 | 111 | 9 | 0 | 229 | 0 | 0 | 0 | 0 | 0 | 0 | 346 |
| 8:15 AM | 2 | 27 | 1 | 0 | 0 | 30 | 0 | 4 | 0 | 3 | 0 | 7 | 1 | 0 | 0 | 98 | 0 | 99 | 89 | 1 | 104 | 6 | 0 | 200 | 2 | 0 | 2 | 0 | 0 | 4 | 340 |
| Total Volume | 11 | 125 | 2 | 4 | 0 | 142 | 12 | 13 | 1 | 3 | 0 | 29 | 2 | 10 | 0 | 333 | 0 | 345 | 365 | 5 | 405 | 25 | 1 | 801 | 6 | 0 | 7 | 13 | 0 | 26 | 1343 |
| % Approach Total | 7.7 | 88.0 | 1.4 | 2.8 | 0.0 | | 41.4 | 44.8 | 3.4 | 10.3 | 0.0 | | 0.6 | 2.9 | 0.0 | 96.5 | 0.0 | | 45.6 | 0.6 | 50.6 | 3.1 | 0.1 | | 23.1 | 0.0 | 26.9 | 50.0 | 0.0 | | |
| PHF | 0.688 | 0.822 | 0.500 | 0.500 | 0.000 | 0.866 | 0.600 | 0.650 | 0.250 | 0.250 | 0.000 | 0.725 | 0.500 | 0.417 | 0.000 | 0.849 | 0.000 | 0.871 | 0.853 | 0.625 | 0.912 | 0.694 | 0.250 | 0.874 | 0.500 | 0.000 | 0.438 | 0.464 | 0.000 | 0.500 | 0.970 |
| Entering Leg | 11 | 125 | 2 | 4 | 0 | 142 | 12 | 13 | 1 | 3 | 0 | 29 | 2 | 10 | 0 | 333 | 0 | 345 | 365 | 5 | 405 | 25 | 1 | 801 | 6 | 0 | 7 | 13 | 0 | 26 | 1343 |
| Exiting Leg | | | | | | 440 | | | | | | 18 | | | | | | 370 | | | | | | 466 | | | | | | 49 | 1343 |
| Total | | | | | | 582 | | | | | | 47 | | | | | | 715 | | | | | | 1267 | | | | | | 75 | 2686 |

PDI File #: **175708 I**
Location: **N: L Street NE: Columbia Road NW: Columbia Road**
Location: **E: William J. Day Boulevard W: William J. Day Boulevard**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Heavy Vehicles

| | L Street | | | | | | Columbia Road | | | | | | William J. Day Boulevard | | | | | | William J. Day Boulevard | | | | | | Columbia Road | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | Northeast | | | | | | East | | | | | | West | | | | | | Northwest | | | | | | |
| | Hard Righ | Right | Left | Hard Left | U-Turn | Total | Hard Righ | Right | Bear Righ | Hard Left | U-Turn | Total | Hard Righ | Right | Bear Righ | Thru | U-Turn | Total | Thru | Bear Left | Left | Hard Left | U-Turn | Total | Hard Righ | Bear Left | Left | Hard Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 7:15 AM | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 3 | 0 | 2 | 1 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 8:00 AM | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 8:15 AM | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 8:30 AM | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 3 | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 3 | 0 | 1 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| Grand Total | 1 | 3 | 0 | 0 | 0 | 4 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 2 | 6 | 0 | 3 | 1 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| Approach % | 25.0 | 75.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 100.0 | 0.0 | | 60.0 | 0.0 | 30.0 | 10.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total % | 5.6 | 16.7 | 0.0 | 0.0 | 0.0 | 22.2 | 0.0 | 11.1 | 0.0 | 0.0 | 0.0 | 11.1 | 0.0 | 0.0 | 0.0 | 11.1 | 0.0 | 11.1 | 33.3 | 0.0 | 16.7 | 5.6 | 0.0 | 55.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Exiting Leg Total | | | | | | 3 | | | | | | 0 | | | | | | 6 | | | | | | 5 | | | | | | 4 | 18 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:30 AM | L Street | | | | | | Columbia Road | | | | | | William J. Day Boulevard | | | | | | William J. Day Boulevard | | | | | | Columbia Road | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | Northeast | | | | | | East | | | | | | West | | | | | | Northwest | | | | | | |
| | Hard Righ | Right | Left | Hard Left | U-Turn | Total | Hard Righ | Right | Bear Righ | Hard Left | U-Turn | Total | Hard Righ | Right | Bear Righ | Thru | U-Turn | Total | Thru | Bear Left | Left | Hard Left | U-Turn | Total | Hard Righ | Bear Left | Left | Hard Left | U-Turn | Total | Total |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 8:00 AM | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 8:15 AM | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Total Volume | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 2 | 4 | 0 | 2 | 1 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| % Approach Total | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 100.0 | 0.0 | | 57.1 | 0.0 | 28.6 | 14.3 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| PHF | 0.000 | 0.500 | 0.000 | 0.000 | 0.000 | 0.500 | 0.000 | 0.250 | 0.000 | 0.000 | 0.000 | 0.250 | 0.000 | 0.000 | 0.000 | 0.500 | 0.000 | 0.500 | 0.500 | 0.000 | 0.500 | 0.250 | 0.000 | 0.438 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.750 |
| Entering Leg | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 2 | 4 | 0 | 2 | 1 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| Exiting Leg | | | | | | 2 | | | | | | 0 | | | | | | 4 | | | | | | 4 | | | | | | 2 | 12 |
| Total | | | | | | 4 | | | | | | 1 | | | | | | 6 | | | | | | 11 | | | | | | 2 | 24 |

PDI File #: **175708 I**
Location: **N: L Street NE: Columbia Road NW: Columbia Road**
Location: **E: William J. Day Boulevard W: William J. Day Boulevard**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Buses

| | L Street | | | | | | Columbia Road | | | | | | William J. Day Boulevard | | | | | | William J. Day Boulevard | | | | | | Columbia Road | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | Northeast | | | | | | East | | | | | | West | | | | | | Northwest | | | | | | |
| | Hard Righ | Right | Left | Hard Left | U-Turn | Total | Hard Righ | Right | Bear Righ | Hard Left | U-Turn | Total | Hard Righ | Right | Bear Righ | Thru | U-Turn | Total | Thru | Bear Left | Left | Hard Left | U-Turn | Total | Hard Righ | Bear Left | Left | Hard Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 4 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 8:15 AM | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 8:45 AM | 0 | 2 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| Total | 1 | 2 | 0 | 1 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 2 | 0 | 5 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| Grand Total | 1 | 2 | 0 | 1 | 0 | 4 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 3 | 5 | 0 | 9 | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 22 |
| Approach % | 25.0 | 50.0 | 0.0 | 25.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 100.0 | 0.0 | | 35.7 | 0.0 | 64.3 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total % | 4.5 | 9.1 | 0.0 | 4.5 | 0.0 | 18.2 | 0.0 | 4.5 | 0.0 | 0.0 | 0.0 | 4.5 | 0.0 | 0.0 | 0.0 | 13.6 | 0.0 | 13.6 | 22.7 | 0.0 | 40.9 | 0.0 | 0.0 | 63.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Exiting Leg Total | | | | | | 9 | | | | | | 1 | | | | | | 5 | | | | | | 5 | | | | | | 2 | 22 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 8:00 AM | L Street | | | | | | Columbia Road | | | | | | William J. Day Boulevard | | | | | | William J. Day Boulevard | | | | | | Columbia Road | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | Northeast | | | | | | East | | | | | | West | | | | | | Northwest | | | | | | |
| | Hard Righ | Right | Left | Hard Left | U-Turn | Total | Hard Righ | Right | Bear Righ | Hard Left | U-Turn | Total | Hard Righ | Right | Bear Righ | Thru | U-Turn | Total | Thru | Bear Left | Left | Hard Left | U-Turn | Total | Hard Righ | Bear Left | Left | Hard Left | U-Turn | Total | Total |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 8:15 AM | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 8:45 AM | 0 | 2 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| Total Volume | 1 | 2 | 0 | 1 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 2 | 0 | 5 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| % Approach Total | 25.0 | 50.0 | 0.0 | 25.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 100.0 | 0.0 | | 28.6 | 0.0 | 71.4 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| PHF | 0.250 | 0.250 | 0.000 | 0.250 | 0.000 | 0.333 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.750 | 0.000 | 0.750 | 0.500 | 0.000 | 0.313 | 0.000 | 0.000 | 0.438 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.583 |
| Entering Leg | 1 | 2 | 0 | 1 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 2 | 0 | 5 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| Exiting Leg | | | | | | 5 | | | | | | 1 | | | | | | 2 | | | | | | 5 | | | | | | 1 | 14 |
| Total | | | | | | 9 | | | | | | 1 | | | | | | 5 | | | | | | 12 | | | | | | 1 | 28 |

PDI File #: **175708 I**
Location: **N: L Street NE: Columbia Road NW: Columbia Road**
Location: **E: William J. Day Boulevard W: William J. Day Boulevard**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
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Class:

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46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Bicycles (on Roadway and Crosswalks)

| | L Street | | | | | | | | Columbia Road | | | | | | | | William J. Day Boulevard | | | | | | | | William J. Day Boulevard | | | | | | | | Columbia Road | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | | Northeast | | | | | | | | East | | | | | | | | West | | | | | | | | Northwest | | | | | | | | |
| | Hard Righ | Right | Left | Hard Left | U-Turn | CW-EB | CW-WB | Total | Hard Righ | Right | Bear Righ | Hard Left | U-Turn | CW-SEB | CW-NWB | Total | Hard Righ | Right | Bear Righ | Thru | U-Turn | CW-SB | CW-NB | Total | Thru | Bear Left | Left | Hard Left | U-Turn | CW-NB | CW-SB | Total | Hard Righ | Bear Left | Left | Hard Left | U-Turn | CW-NEB | CW-SWB | Total | Total |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Total | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 6 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 4 | 0 | 0 | 0 | 0 | 1 | 1 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 11 |
| Approach % | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | | 66.7 | 0.0 | 0.0 | 0.0 | 0.0 | 16.7 | 16.7 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | | |
| Total % | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 9.1 | 0.0 | 9.1 | 0.0 | 9.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 9.1 | 0.0 | 0.0 | 0.0 | 18.2 | 0.0 | 0.0 | 0.0 | 18.2 | 36.4 | 0.0 | 0.0 | 0.0 | 0.0 | 9.1 | 9.1 | 54.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 9.1 | 9.1 | |
| Exiting Leg Total | | | | | | | | 1 | | | | | | | | 0 | | | | | | | | 4 | | | | | | | | 4 | | | | | | | | 2 | 11 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:15 AM | L Street | | | | | | | | Columbia Road | | | | | | | | William J. Day Boulevard | | | | | | | | William J. Day Boulevard | | | | | | | | Columbia Road | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | | Northeast | | | | | | | | East | | | | | | | | West | | | | | | | | Northwest | | | | | | | | |
| | Hard Righ | Right | Left | Hard Left | U-Turn | CW-EB | CW-WB | Total | Hard Righ | Right | Bear Righ | Hard Left | U-Turn | CW-SEB | CW-NWB | Total | Hard Righ | Right | Bear Righ | Thru | U-Turn | CW-SB | CW-NB | Total | Thru | Bear Left | Left | Hard Left | U-Turn | CW-NB | CW-SB | Total | Hard Righ | Bear Left | Left | Hard Left | U-Turn | CW-NEB | CW-SWB | Total | Total |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 8 |
| % Approach Total | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | | 75.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 25.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | | |
| PHF | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.250 | 0.000 | 0.250 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.500 | 0.000 | 0.000 | 0.000 | 0.500 | 0.375 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.250 | 0.500 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.250 | 0.250 | 0.667 |
| Entering Leg | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 8 |
| Exiting Leg | | | | | | | | 1 | | | | | | | | 0 | | | | | | | | 3 | | | | | | | | 3 | | | | | | | | 1 | 8 |
| Total | | | | | | | | 2 | | | | | | | | 0 | | | | | | | | 5 | | | | | | | | 7 | | | | | | | | 2 | 16 |

PDI File #: **175708 I**
Location: **N: L Street NE: Columbia Road NW: Columbia Road**
Location: **E: William J. Day Boulevard W: William J. Day Boulevard**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Pedestrians

| | L Street | | | | | | | | Columbia Road | | | | | | | | William J. Day Boulevard | | | | | | | | William J. Day Boulevard | | | | | | | | Columbia Road | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | | Northeast | | | | | | | | East | | | | | | | | West | | | | | | | | Northwest | | | | | | | | |
| | Hard Righ | Right | Left | Hard Left | U-Turn | CW-EB | CW-WB | Total | Hard Righ | Right | Bear Righ | Hard Left | U-Turn | CW-SEB | CW-NWB | Total | Hard Righ | Right | Bear Righ | Thru | U-Turn | CW-SB | CW-NB | Total | Thru | Bear Left | Left | Hard Left | U-Turn | CW-NB | CW-SB | Total | Hard Righ | Bear Left | Left | Hard Left | U-Turn | CW-NEB | CW-SWB | Total | Total |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 3 | 4 | 7 | 0 | 0 | 0 | 0 | 0 | 4 | 3 | 7 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 21 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 5 | 21 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 14 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 4 | 18 |
| Total | 0 | 0 | 0 | 0 | 0 | 7 | 6 | 13 | 0 | 0 | 0 | 0 | 0 | 6 | 9 | 15 | 0 | 0 | 0 | 0 | 0 | 8 | 14 | 22 | 0 | 0 | 0 | 0 | 0 | 4 | 7 | 11 | 0 | 0 | 0 | 0 | 0 | 5 | 8 | 13 | 74 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 4 | 2 | 6 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 17 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 11 |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| Total | 0 | 0 | 0 | 0 | 0 | 3 | 5 | 8 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 6 | 0 | 0 | 0 | 0 | 0 | 8 | 6 | 14 | 0 | 0 | 0 | 0 | 0 | 5 | 4 | 9 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 5 | 42 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 10 | 11 | 21 | 0 | 0 | 0 | 0 | 0 | 8 | 13 | 21 | 0 | 0 | 0 | 0 | 0 | 16 | 20 | 36 | 0 | 0 | 0 | 0 | 0 | 9 | 11 | 20 | 0 | 0 | 0 | 0 | 0 | 8 | 10 | 18 | 116 |
| Approach % | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 47.6 | 52.4 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 38.1 | 61.9 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 44.4 | 55.6 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 45.0 | 55.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 44.4 | 55.6 | | |
| Total % | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 8.6 | 9.5 | 18.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 6.9 | 11.2 | 18.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 13.8 | 17.2 | 31.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 7.8 | 9.5 | 17.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 6.9 | 8.6 | 15.5 | |
| Exiting Leg Total | | | | | | | | 21 | | | | | | | | 21 | | | | | | | | 36 | | | | | | | | 20 | | | | | | | | 18 | 116 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:00 AM | L Street | | | | | | | | Columbia Road | | | | | | | | William J. Day Boulevard | | | | | | | | William J. Day Boulevard | | | | | | | | Columbia Road | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | | Northeast | | | | | | | | East | | | | | | | | West | | | | | | | | Northwest | | | | | | | | |
| | Hard Righ | Right | Left | Hard Left | U-Turn | CW-EB | CW-WB | Total | Hard Righ | Right | Bear Righ | Hard Left | U-Turn | CW-SEB | CW-NWB | Total | Hard Righ | Right | Bear Righ | Thru | U-Turn | CW-SB | CW-NB | Total | Thru | Bear Left | Left | Hard Left | U-Turn | CW-NB | CW-SB | Total | Hard Righ | Bear Left | Left | Hard Left | U-Turn | CW-NEB | CW-SWB | Total | Total |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 3 | 4 | 7 | 0 | 0 | 0 | 0 | 0 | 4 | 3 | 7 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 21 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 5 | 21 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 14 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 4 | 18 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 7 | 6 | 13 | 0 | 0 | 0 | 0 | 0 | 6 | 9 | 15 | 0 | 0 | 0 | 0 | 0 | 8 | 14 | 22 | 0 | 0 | 0 | 0 | 0 | 4 | 7 | 11 | 0 | 0 | 0 | 0 | 0 | 5 | 8 | 13 | 74 |
| % Approach Total | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 53.8 | 46.2 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 40.0 | 60.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 36.4 | 63.6 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 36.4 | 63.6 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 38.5 | 61.5 | | |
| PHF | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.438 | 0.500 | 0.813 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.500 | 0.563 | 0.536 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.500 | 0.700 | 0.786 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.500 | 0.583 | 0.688 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.625 | 0.667 | 0.650 | 0.881 |
| Entering Leg | 0 | 0 | 0 | 0 | 0 | 7 | 6 | 13 | 0 | 0 | 0 | 0 | 0 | 6 | 9 | 15 | 0 | 0 | 0 | 0 | 0 | 8 | 14 | 22 | 0 | 0 | 0 | 0 | 0 | 4 | 7 | 11 | 0 | 0 | 0 | 0 | 0 | 5 | 8 | 13 | 74 |
| Exiting Leg | | | | | | | | 13 | | | | | | | | 15 | | | | | | | | 22 | | | | | | | | 11 | | | | | | | | 13 | 74 |
| Total | | | | | | | | 26 | | | | | | | | 30 | | | | | | | | 44 | | | | | | | | 22 | | | | | | | | 26 | 148 |

PDI File #: **175708 II**
Location: **N: L Street NE: Columbia Road NW: Columbia Road**
Location: **E: William J. Day Boulevard W: William J. Day Boulevard**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Cars, Heavy Vehicles, and Buses (Combined)

| | L Street | | | | | | Columbia Road | | | | | | William J. Day Boulevard | | | | | | William J. Day Boulevard | | | | | | Columbia Road | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | Northeast | | | | | | East | | | | | | West | | | | | | Northwest | | | | | | |
| | Hard Righ | Right | Left | Hard Left | U-Turn | Total | Hard Righ | Right | Bear Righ | Hard Left | U-Turn | Total | Hard Righ | Right | Bear Righ | Thru | U-Turn | Total | Thru | Bear Left | Left | Hard Left | U-Turn | Total | Hard Righ | Bear Left | Left | Hard Left | U-Turn | Total | Total |
| 4:00 PM | 3 | 107 | 1 | 0 | 0 | 111 | 4 | 5 | 2 | 0 | 0 | 11 | 0 | 4 | 0 | 71 | 0 | 75 | 73 | 5 | 55 | 1 | 1 | 135 | 0 | 0 | 0 | 1 | 0 | 1 | 333 |
| 4:15 PM | 2 | 125 | 2 | 1 | 1 | 131 | 6 | 5 | 1 | 0 | 0 | 12 | 0 | 1 | 0 | 81 | 0 | 82 | 73 | 0 | 88 | 2 | 0 | 163 | 0 | 0 | 1 | 0 | 0 | 1 | 389 |
| 4:30 PM | 4 | 110 | 2 | 2 | 0 | 118 | 1 | 7 | 0 | 0 | 0 | 8 | 0 | 1 | 0 | 88 | 0 | 89 | 64 | 0 | 117 | 0 | 0 | 181 | 0 | 1 | 0 | 2 | 0 | 3 | 399 |
| 4:45 PM | 1 | 90 | 2 | 1 | 0 | 94 | 4 | 5 | 0 | 0 | 0 | 9 | 1 | 1 | 0 | 83 | 0 | 85 | 82 | 1 | 93 | 0 | 0 | 176 | 0 | 1 | 2 | 1 | 0 | 4 | 368 |
| Total | 10 | 432 | 7 | 4 | 1 | 454 | 15 | 22 | 3 | 0 | 0 | 40 | 1 | 7 | 0 | 323 | 0 | 331 | 292 | 6 | 353 | 3 | 1 | 655 | 0 | 2 | 3 | 4 | 0 | 9 | 1489 |
| 5:00 PM | 4 | 94 | 2 | 0 | 0 | 100 | 5 | 4 | 0 | 0 | 0 | 9 | 0 | 5 | 0 | 92 | 0 | 97 | 95 | 0 | 125 | 1 | 0 | 221 | 0 | 0 | 1 | 4 | 0 | 5 | 432 |
| 5:15 PM | 6 | 99 | 3 | 0 | 0 | 108 | 6 | 3 | 2 | 0 | 0 | 11 | 0 | 2 | 0 | 96 | 0 | 98 | 84 | 2 | 109 | 0 | 0 | 195 | 0 | 0 | 3 | 0 | 0 | 3 | 415 |
| 5:30 PM | 6 | 88 | 9 | 2 | 0 | 105 | 4 | 6 | 0 | 0 | 0 | 10 | 0 | 3 | 1 | 80 | 0 | 84 | 110 | 0 | 109 | 0 | 0 | 219 | 0 | 0 | 0 | 2 | 0 | 2 | 420 |
| 5:45 PM | 2 | 74 | 2 | 1 | 0 | 79 | 2 | 4 | 0 | 0 | 0 | 6 | 0 | 1 | 1 | 82 | 0 | 84 | 95 | 1 | 89 | 2 | 0 | 187 | 0 | 0 | 0 | 0 | 0 | 0 | 356 |
| Total | 18 | 355 | 16 | 3 | 0 | 392 | 17 | 17 | 2 | 0 | 0 | 36 | 0 | 11 | 2 | 350 | 0 | 363 | 384 | 3 | 432 | 3 | 0 | 822 | 0 | 0 | 4 | 6 | 0 | 10 | 1623 |
| Grand Total | 28 | 787 | 23 | 7 | 1 | 846 | 32 | 39 | 5 | 0 | 0 | 76 | 1 | 18 | 2 | 673 | 0 | 694 | 676 | 9 | 785 | 6 | 1 | 1477 | 0 | 2 | 7 | 10 | 0 | 19 | 3112 |
| Approach % | 3.3 | 93.0 | 2.7 | 0.8 | 0.1 | | 42.1 | 51.3 | 6.6 | 0.0 | 0.0 | | 0.1 | 2.6 | 0.3 | 97.0 | 0.0 | | 45.8 | 0.6 | 53.1 | 0.4 | 0.1 | | 0.0 | 10.5 | 36.8 | 52.6 | 0.0 | | |
| Total % | 0.9 | 25.3 | 0.7 | 0.2 | 0.0 | 27.2 | 1.0 | 1.3 | 0.2 | 0.0 | 0.0 | 2.4 | 0.0 | 0.6 | 0.1 | 21.6 | 0.0 | 22.3 | 21.7 | 0.3 | 25.2 | 0.2 | 0.0 | 47.5 | 0.0 | 0.1 | 0.2 | 0.3 | 0.0 | 0.6 | |
| Exiting Leg Total | | | | | | 846 | | | | | | 24 | | | | | | 701 | | | | | | 1466 | | | | | | 75 | 3112 |
| Cars | 28 | 784 | 23 | 7 | 1 | 843 | 32 | 39 | 5 | 0 | 0 | 76 | 1 | 18 | 2 | 665 | 0 | 686 | 674 | 9 | 776 | 6 | 1 | 1466 | 0 | 2 | 7 | 10 | 0 | 19 | 3090 |
| % Cars | 100.0 | 99.6 | 100.0 | 100.0 | 100.0 | 99.6 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 | 100.0 | 100.0 | 100.0 | 100.0 | 98.8 | 0.0 | 98.8 | 99.7 | 100.0 | 98.9 | 100.0 | 100.0 | 99.3 | 0.0 | 100.0 | 100.0 | 100.0 | 0.0 | 100.0 | 99.3 |
| Exiting Leg Total | | | | | | 837 | | | | | | 24 | | | | | | 699 | | | | | | 1455 | | | | | | 75 | 3090 |
| Heavy Vehicles | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 2 | 0 | 4 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| % Heavy Vehicles | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | 0.0 | 0.4 | 0.3 | 0.0 | 0.5 | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 |
| Exiting Leg Total | | | | | | 4 | | | | | | 0 | | | | | | 2 | | | | | | 5 | | | | | | 0 | 11 |
| Buses | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| % Buses | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 0.0 | 0.7 | 0.0 | 0.0 | 0.6 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 |
| Exiting Leg Total | | | | | | 5 | | | | | | 0 | | | | | | 0 | | | | | | 6 | | | | | | 0 | 11 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:45 PM | L Street | | | | | | Columbia Road | | | | | | William J. Day Boulevard | | | | | | William J. Day Boulevard | | | | | | Columbia Road | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | Northeast | | | | | | East | | | | | | West | | | | | | Northwest | | | | | | |
| | Hard Righ | Right | Left | Hard Left | U-Turn | Total | Hard Righ | Right | Bear Righ | Hard Left | U-Turn | Total | Hard Righ | Right | Bear Righ | Thru | U-Turn | Total | Thru | Bear Left | Left | Hard Left | U-Turn | Total | Hard Righ | Bear Left | Left | Hard Left | U-Turn | Total | Total |
| 4:45 PM | 1 | 90 | 2 | 1 | 0 | 94 | 4 | 5 | 0 | 0 | 0 | 9 | 1 | 1 | 0 | 83 | 0 | 85 | 82 | 1 | 93 | 0 | 0 | 176 | 0 | 1 | 2 | 1 | 0 | 4 | 368 |
| 5:00 PM | 4 | 94 | 2 | 0 | 0 | 100 | 5 | 4 | 0 | 0 | 0 | 9 | 0 | 5 | 0 | 92 | 0 | 97 | 95 | 0 | 125 | 1 | 0 | 221 | 0 | 0 | 1 | 4 | 0 | 5 | 432 |
| 5:15 PM | 6 | 99 | 3 | 0 | 0 | 108 | 6 | 3 | 2 | 0 | 0 | 11 | 0 | 2 | 0 | 96 | 0 | 98 | 84 | 2 | 109 | 0 | 0 | 195 | 0 | 0 | 3 | 0 | 0 | 3 | 415 |
| 5:30 PM | 6 | 88 | 9 | 2 | 0 | 105 | 4 | 6 | 0 | 0 | 0 | 10 | 0 | 3 | 1 | 80 | 0 | 84 | 110 | 0 | 109 | 0 | 0 | 219 | 0 | 0 | 0 | 2 | 0 | 2 | 420 |
| Total Volume | 17 | 371 | 16 | 3 | 0 | 407 | 19 | 18 | 2 | 0 | 0 | 39 | 1 | 11 | 1 | 351 | 0 | 364 | 371 | 3 | 436 | 1 | 0 | 811 | 0 | 1 | 6 | 7 | 0 | 14 | 1635 |
| % Approach Total | 4.2 | 91.2 | 3.9 | 0.7 | 0.0 | | 48.7 | 46.2 | 5.1 | 0.0 | 0.0 | | 0.3 | 3.0 | 0.3 | 96.4 | 0.0 | | 45.7 | 0.4 | 53.8 | 0.1 | 0.0 | | 0.0 | 7.1 | 42.9 | 50.0 | 0.0 | | |
| PHF | 0.708 | 0.937 | 0.444 | 0.375 | 0.000 | 0.942 | 0.792 | 0.750 | 0.250 | 0.000 | 0.000 | 0.886 | 0.250 | 0.550 | 0.250 | 0.914 | 0.000 | 0.929 | 0.843 | 0.375 | 0.872 | 0.250 | 0.000 | 0.917 | 0.000 | 0.250 | 0.500 | 0.438 | 0.000 | 0.700 | 0.946 |
| Cars | 17 | 370 | 16 | 3 | 0 | 406 | 19 | 18 | 2 | 0 | 0 | 39 | 1 | 11 | 1 | 348 | 0 | 361 | 371 | 3 | 434 | 1 | 0 | 809 | 0 | 1 | 6 | 7 | 0 | 14 | 1629 |
| Cars % | 100.0 | 99.7 | 100.0 | 100.0 | 0.0 | 99.8 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 | 100.0 | 100.0 | 100.0 | 100.0 | 99.1 | 0.0 | 99.2 | 100.0 | 100.0 | 99.5 | 100.0 | 0.0 | 99.8 | 0.0 | 100.0 | 100.0 | 100.0 | 0.0 | 100.0 | 99.6 |
| Heavy Vehicles | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Heavy Vehicles % | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | 0.0 | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 |
| Buses | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Buses % | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.3 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 |
| Cars Enter Leg | 17 | 370 | 16 | 3 | 0 | 406 | 19 | 18 | 2 | 0 | 0 | 39 | 1 | 11 | 1 | 348 | 0 | 361 | 371 | 3 | 434 | 1 | 0 | 809 | 0 | 1 | 6 | 7 | 0 | 14 | 1629 |

PDI File #: **175708 II**
Location: **N: L Street NE: Columbia Road NW: Columbia Road**
Location: **E: William J. Day Boulevard W: William J. Day Boulevard**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Cars, Heavy Vehicles, and Buses (Combined)

| | L Street | | | | | | Columbia Road | | | | | | William J. Day Boulevard | | | | | | William J. Day Boulevard | | | | | | Columbia Road | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | Northeast | | | | | | East | | | | | | West | | | | | | Northwest | | | | | | |
| | Hard Righ | Right | Left | Hard Left | U-Turn | Total | Hard Righ | Right | Bear Righ | Hard Left | U-Turn | Total | Hard Righ | Right | Bear Righ | Thru | U-Turn | Total | Thru | Bear Left | Left | Hard Left | U-Turn | Total | Hard Righ | Bear Left | Left | Hard Left | U-Turn | Total | Total |
| Heavy Enter Leg | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Bus Enter Leg | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Total Entering Leg | 17 | 371 | 16 | 3 | 0 | 407 | 19 | 18 | 2 | 0 | 0 | 39 | 1 | 11 | 1 | 351 | 0 | 364 | 371 | 3 | 436 | 1 | 0 | 811 | 0 | 1 | 6 | 7 | 0 | 14 | 1635 |
| Cars Exiting Leg | | | | | | 471 | | | | | | 13 | | | | | | 388 | | | | | | 720 | | | | | | 37 | 1629 |
| Heavy Exiting Leg | | | | | | 0 | | | | | | 0 | | | | | | 0 | | | | | | 3 | | | | | | 0 | 3 |
| Buses Exiting Leg | | | | | | 2 | | | | | | 0 | | | | | | 0 | | | | | | 1 | | | | | | 0 | 3 |
| Total Exiting Leg | | | | | | 473 | | | | | | 13 | | | | | | 388 | | | | | | 724 | | | | | | 37 | 1635 |

PDI File #: **175708 II**
Location: **N: L Street NE: Columbia Road NW: Columbia Road**
Location: **E: William J. Day Boulevard W: William J. Day Boulevard**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Cars

| | L Street | | | | | | Columbia Road | | | | | | William J. Day Boulevard | | | | | | William J. Day Boulevard | | | | | | Columbia Road | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | Northeast | | | | | | East | | | | | | West | | | | | | Northwest | | | | | | |
| | Hard Righ | Right | Left | Hard Left | U-Turn | Total | Hard Righ | Right | Bear Righ | Hard Left | U-Turn | Total | Hard Righ | Right | Bear Righ | Thru | U-Turn | Total | Thru | Bear Left | Left | Hard Left | U-Turn | Total | Hard Righ | Bear Left | Left | Hard Left | U-Turn | Total | Total |
| 4:00 PM | 3 | 107 | 1 | 0 | 0 | 111 | 4 | 5 | 2 | 0 | 0 | 11 | 0 | 4 | 0 | 71 | 0 | 75 | 73 | 5 | 54 | 1 | 1 | 134 | 0 | 0 | 0 | 1 | 0 | 1 | 332 |
| 4:15 PM | 2 | 124 | 2 | 1 | 1 | 130 | 6 | 5 | 1 | 0 | 0 | 12 | 0 | 1 | 0 | 79 | 0 | 80 | 72 | 0 | 85 | 2 | 0 | 159 | 0 | 0 | 1 | 0 | 0 | 1 | 382 |
| 4:30 PM | 4 | 110 | 2 | 2 | 0 | 118 | 1 | 7 | 0 | 0 | 0 | 8 | 0 | 1 | 0 | 86 | 0 | 87 | 63 | 0 | 114 | 0 | 0 | 177 | 0 | 1 | 0 | 2 | 0 | 3 | 393 |
| 4:45 PM | 1 | 89 | 2 | 1 | 0 | 93 | 4 | 5 | 0 | 0 | 0 | 9 | 1 | 1 | 0 | 82 | 0 | 84 | 82 | 1 | 92 | 0 | 0 | 175 | 0 | 1 | 2 | 1 | 0 | 4 | 365 |
| Total | 10 | 430 | 7 | 4 | 1 | 452 | 15 | 22 | 3 | 0 | 0 | 40 | 1 | 7 | 0 | 318 | 0 | 326 | 290 | 6 | 345 | 3 | 1 | 645 | 0 | 2 | 3 | 4 | 0 | 9 | 1472 |
| 5:00 PM | 4 | 94 | 2 | 0 | 0 | 100 | 5 | 4 | 0 | 0 | 0 | 9 | 0 | 5 | 0 | 92 | 0 | 97 | 95 | 0 | 124 | 1 | 0 | 220 | 0 | 0 | 1 | 4 | 0 | 5 | 431 |
| 5:15 PM | 6 | 99 | 3 | 0 | 0 | 108 | 6 | 3 | 2 | 0 | 0 | 11 | 0 | 2 | 0 | 95 | 0 | 97 | 84 | 2 | 109 | 0 | 0 | 195 | 0 | 0 | 3 | 0 | 0 | 3 | 414 |
| 5:30 PM | 6 | 88 | 9 | 2 | 0 | 105 | 4 | 6 | 0 | 0 | 0 | 10 | 0 | 3 | 1 | 79 | 0 | 83 | 110 | 0 | 109 | 0 | 0 | 219 | 0 | 0 | 0 | 2 | 0 | 2 | 419 |
| 5:45 PM | 2 | 73 | 2 | 1 | 0 | 78 | 2 | 4 | 0 | 0 | 0 | 6 | 0 | 1 | 1 | 81 | 0 | 83 | 95 | 1 | 89 | 2 | 0 | 187 | 0 | 0 | 0 | 0 | 0 | 0 | 354 |
| Total | 18 | 354 | 16 | 3 | 0 | 391 | 17 | 17 | 2 | 0 | 0 | 36 | 0 | 11 | 2 | 347 | 0 | 360 | 384 | 3 | 431 | 3 | 0 | 821 | 0 | 0 | 4 | 6 | 0 | 10 | 1618 |
| Grand Total | 28 | 784 | 23 | 7 | 1 | 843 | 32 | 39 | 5 | 0 | 0 | 76 | 1 | 18 | 2 | 665 | 0 | 686 | 674 | 9 | 776 | 6 | 1 | 1466 | 0 | 2 | 7 | 10 | 0 | 19 | 3090 |
| Approach % | 3.3 | 93.0 | 2.7 | 0.8 | 0.1 | | 42.1 | 51.3 | 6.6 | 0.0 | 0.0 | | 0.1 | 2.6 | 0.3 | 96.9 | 0.0 | | 46.0 | 0.6 | 52.9 | 0.4 | 0.1 | | 0.0 | 10.5 | 36.8 | 52.6 | 0.0 | | |
| Total % | 0.9 | 25.4 | 0.7 | 0.2 | 0.0 | 27.3 | 1.0 | 1.3 | 0.2 | 0.0 | 0.0 | 2.5 | 0.0 | 0.6 | 0.1 | 21.5 | 0.0 | 22.2 | 21.8 | 0.3 | 25.1 | 0.2 | 0.0 | 47.4 | 0.0 | 0.1 | 0.2 | 0.3 | 0.0 | 0.6 | |
| Exiting Leg Total | | | | | | 837 | | | | | | 24 | | | | | | 699 | | | | | | 1455 | | | | | | 75 | 3090 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:45 PM | L Street | | | | | | Columbia Road | | | | | | William J. Day Boulevard | | | | | | William J. Day Boulevard | | | | | | Columbia Road | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | Northeast | | | | | | East | | | | | | West | | | | | | Northwest | | | | | | |
| | Hard Righ | Right | Left | Hard Left | U-Turn | Total | Hard Righ | Right | Bear Righ | Hard Left | U-Turn | Total | Hard Righ | Right | Bear Righ | Thru | U-Turn | Total | Thru | Bear Left | Left | Hard Left | U-Turn | Total | Hard Righ | Bear Left | Left | Hard Left | U-Turn | Total | Total |
| 4:45 PM | 1 | 89 | 2 | 1 | 0 | 93 | 4 | 5 | 0 | 0 | 0 | 9 | 1 | 1 | 0 | 82 | 0 | 84 | 82 | 1 | 92 | 0 | 0 | 175 | 0 | 1 | 2 | 1 | 0 | 4 | 365 |
| 5:00 PM | 4 | 94 | 2 | 0 | 0 | 100 | 5 | 4 | 0 | 0 | 0 | 9 | 0 | 5 | 0 | 92 | 0 | 97 | 95 | 0 | 124 | 1 | 0 | 220 | 0 | 0 | 1 | 4 | 0 | 5 | 431 |
| 5:15 PM | 6 | 99 | 3 | 0 | 0 | 108 | 6 | 3 | 2 | 0 | 0 | 11 | 0 | 2 | 0 | 95 | 0 | 97 | 84 | 2 | 109 | 0 | 0 | 195 | 0 | 0 | 3 | 0 | 0 | 3 | 414 |
| 5:30 PM | 6 | 88 | 9 | 2 | 0 | 105 | 4 | 6 | 0 | 0 | 0 | 10 | 0 | 3 | 1 | 79 | 0 | 83 | 110 | 0 | 109 | 0 | 0 | 219 | 0 | 0 | 0 | 2 | 0 | 2 | 419 |
| Total Volume | 17 | 370 | 16 | 3 | 0 | 406 | 19 | 18 | 2 | 0 | 0 | 39 | 1 | 11 | 1 | 348 | 0 | 361 | 371 | 3 | 434 | 1 | 0 | 809 | 0 | 1 | 6 | 7 | 0 | 14 | 1629 |
| % Approach Total | 4.2 | 91.1 | 3.9 | 0.7 | 0.0 | | 48.7 | 46.2 | 5.1 | 0.0 | 0.0 | | 0.3 | 3.0 | 0.3 | 96.4 | 0.0 | | 45.9 | 0.4 | 53.6 | 0.1 | 0.0 | | 0.0 | 7.1 | 42.9 | 50.0 | 0.0 | | |
| PHF | 0.708 | 0.934 | 0.444 | 0.375 | 0.000 | 0.940 | 0.792 | 0.750 | 0.250 | 0.000 | 0.000 | 0.886 | 0.250 | 0.550 | 0.250 | 0.916 | 0.000 | 0.930 | 0.843 | 0.375 | 0.875 | 0.250 | 0.000 | 0.919 | 0.000 | 0.250 | 0.500 | 0.438 | 0.000 | 0.700 | 0.945 |
| Entering Leg | 17 | 370 | 16 | 3 | 0 | 406 | 19 | 18 | 2 | 0 | 0 | 39 | 1 | 11 | 1 | 348 | 0 | 361 | 371 | 3 | 434 | 1 | 0 | 809 | 0 | 1 | 6 | 7 | 0 | 14 | 1629 |
| Exiting Leg | | | | | | 471 | | | | | | 13 | | | | | | 388 | | | | | | 720 | | | | | | 37 | 1629 |
| Total | | | | | | 877 | | | | | | 52 | | | | | | 749 | | | | | | 1529 | | | | | | 51 | 3258 |

PDI File #: **175708 II**
Location: **N: L Street NE: Columbia Road NW: Columbia Road**
Location: **E: William J. Day Boulevard W: William J. Day Boulevard**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Heavy Vehicles

| | L Street | | | | | | Columbia Road | | | | | | William J. Day Boulevard | | | | | | William J. Day Boulevard | | | | | | Columbia Road | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | Northeast | | | | | | East | | | | | | West | | | | | | Northwest | | | | | | |
| | Hard Righ | Right | Left | Hard Left | U-Turn | Total | Hard Righ | Right | Bear Righ | Hard Left | U-Turn | Total | Hard Righ | Right | Bear Righ | Thru | U-Turn | Total | Thru | Bear Left | Left | Hard Left | U-Turn | Total | Hard Righ | Bear Left | Left | Hard Left | U-Turn | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 4:15 PM | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 4:45 PM | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Total | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 2 | 0 | 4 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Grand Total | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 2 | 0 | 4 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| Approach % | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 100.0 | 0.0 | | 33.3 | 0.0 | 66.7 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total % | 0.0 | 18.2 | 0.0 | 0.0 | 0.0 | 18.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 27.3 | 0.0 | 27.3 | 18.2 | 0.0 | 36.4 | 0.0 | 0.0 | 54.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Exiting Leg Total | | | | | | 4 | | | | | | 0 | | | | | | 2 | | | | | | 5 | | | | | | 0 | 11 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:00 PM | L Street | | | | | | Columbia Road | | | | | | William J. Day Boulevard | | | | | | William J. Day Boulevard | | | | | | Columbia Road | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | Northeast | | | | | | East | | | | | | West | | | | | | Northwest | | | | | | |
| | Hard Righ | Right | Left | Hard Left | U-Turn | Total | Hard Righ | Right | Bear Righ | Hard Left | U-Turn | Total | Hard Righ | Right | Bear Righ | Thru | U-Turn | Total | Thru | Bear Left | Left | Hard Left | U-Turn | Total | Hard Righ | Bear Left | Left | Hard Left | U-Turn | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 4:15 PM | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 4:45 PM | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Total Volume | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 2 | 0 | 4 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| % Approach Total | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 100.0 | 0.0 | | 33.3 | 0.0 | 66.7 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| PHF | 0.000 | 0.500 | 0.000 | 0.000 | 0.000 | 0.500 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.500 | 0.000 | 0.500 | 0.500 | 0.000 | 0.500 | 0.000 | 0.000 | 0.500 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.500 |
| Entering Leg | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 2 | 0 | 4 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| Exiting Leg | | | | | | 4 | | | | | | 0 | | | | | | 2 | | | | | | 4 | | | | | | 0 | 10 |
| Total | | | | | | 6 | | | | | | 0 | | | | | | 4 | | | | | | 10 | | | | | | 0 | 20 |

PDI File #: **175708 II**
Location: **N: L Street NE: Columbia Road NW: Columbia Road**
Location: **E: William J. Day Boulevard W: William J. Day Boulevard**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Buses

| | L Street | | | | | | Columbia Road | | | | | | William J. Day Boulevard | | | | | | William J. Day Boulevard | | | | | | Columbia Road | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | Northeast | | | | | | East | | | | | | West | | | | | | Northwest | | | | | | |
| | Hard Righ | Right | Left | Hard Left | U-Turn | Total | Hard Righ | Right | Bear Righ | Hard Left | U-Turn | Total | Hard Righ | Right | Bear Righ | Thru | U-Turn | Total | Thru | Bear Left | Left | Hard Left | U-Turn | Total | Hard Righ | Bear Left | Left | Hard Left | U-Turn | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 5:45 PM | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Total | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| Grand Total | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| Approach % | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 100.0 | 0.0 | | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total % | 0.0 | 9.1 | 0.0 | 0.0 | 0.0 | 9.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 45.5 | 0.0 | 45.5 | 0.0 | 0.0 | 45.5 | 0.0 | 0.0 | 45.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Exiting Leg Total | | | | | | 5 | | | | | | 0 | | | | | | 0 | | | | | | 6 | | | | | | 0 | 11 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:00 PM | L Street | | | | | | Columbia Road | | | | | | William J. Day Boulevard | | | | | | William J. Day Boulevard | | | | | | Columbia Road | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | Northeast | | | | | | East | | | | | | West | | | | | | Northwest | | | | | | |
| | Hard Righ | Right | Left | Hard Left | U-Turn | Total | Hard Righ | Right | Bear Righ | Hard Left | U-Turn | Total | Hard Righ | Right | Bear Righ | Thru | U-Turn | Total | Thru | Bear Left | Left | Hard Left | U-Turn | Total | Hard Righ | Bear Left | Left | Hard Left | U-Turn | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| % Approach Total | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 100.0 | 0.0 | | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| PHF | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.375 | 0.000 | 0.375 | 0.000 | 0.000 | 0.500 | 0.000 | 0.000 | 0.500 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.438 |
| Entering Leg | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| Exiting Leg | | | | | | 4 | | | | | | 0 | | | | | | 0 | | | | | | 3 | | | | | | 0 | 7 |
| Total | | | | | | 4 | | | | | | 0 | | | | | | 3 | | | | | | 7 | | | | | | 0 | 14 |

PDI File #: **175708 II**
Location: **N: L Street NE: Columbia Road NW: Columbia Road**
Location: **E: William J. Day Boulevard W: William J. Day Boulevard**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Bicycles (on Roadway and Crosswalks)

| | L Street | | | | | | | | Columbia Road | | | | | | | | William J. Day Boulevard | | | | | | | | William J. Day Boulevard | | | | | | | | Columbia Road | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | | Northeast | | | | | | | | East | | | | | | | | West | | | | | | | | Northwest | | | | | | | | |
| | Hard Righ | Right | Left | Hard Left | U-Turn | CW-EB | CW-WB | Total | Hard Righ | Right | Bear Righ | Hard Left | U-Turn | CW-SEB | CW-NWB | Total | Hard Righ | Right | Bear Righ | Thru | U-Turn | CW-SB | CW-NB | Total | Thru | Bear Left | Left | Hard Left | U-Turn | CW-NB | CW-SB | Total | Hard Righ | Bear Left | Left | Hard Left | U-Turn | CW-NEB | CW-SWB | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 |
| 4:45 PM | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 3 |
| Total | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 3 | 6 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 5 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 4 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 5:45 PM | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| Total | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 4 | 0 | 0 | 0 | 0 | 1 | 5 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 3 | 2 | 0 | 0 | 0 | 0 | 1 | 3 | 6 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 19 |
| Grand Total | 0 | 3 | 0 | 0 | 0 | 0 | 1 | 4 | 0 | 4 | 0 | 0 | 0 | 0 | 1 | 5 | 0 | 0 | 0 | 4 | 0 | 0 | 1 | 5 | 2 | 0 | 0 | 0 | 0 | 1 | 3 | 6 | 0 | 0 | 1 | 0 | 0 | 0 | 4 | 5 | 25 |
| Approach % | 0.0 | 75.0 | 0.0 | 0.0 | 0.0 | 0.0 | 25.0 | | 0.0 | 80.0 | 0.0 | 0.0 | 0.0 | 0.0 | 20.0 | | 0.0 | 0.0 | 0.0 | 80.0 | 0.0 | 0.0 | 20.0 | | 33.3 | 0.0 | 0.0 | 0.0 | 0.0 | 16.7 | 50.0 | | 0.0 | 0.0 | 20.0 | 0.0 | 0.0 | 0.0 | 80.0 | | |
| Total % | 0.0 | 12.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.0 | 16.0 | 0.0 | 16.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.0 | 20.0 | 0.0 | 0.0 | 0.0 | 16.0 | 0.0 | 0.0 | 4.0 | 20.0 | 8.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.0 | 12.0 | 24.0 | 0.0 | 0.0 | 4.0 | 0.0 | 0.0 | 0.0 | 16.0 | 20.0 | |
| Exiting Leg Total | | | | | | | | 1 | | | | | | | | 2 | | | | | | | | 3 | | | | | | | | 11 | | | | | | | | 8 | 25 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 5:00 PM | L Street | | | | | | | | Columbia Road | | | | | | | | William J. Day Boulevard | | | | | | | | William J. Day Boulevard | | | | | | | | Columbia Road | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | | Northeast | | | | | | | | East | | | | | | | | West | | | | | | | | Northwest | | | | | | | | |
| | Hard Righ | Right | Left | Hard Left | U-Turn | CW-EB | CW-WB | Total | Hard Righ | Right | Bear Righ | Hard Left | U-Turn | CW-SEB | CW-NWB | Total | Hard Righ | Right | Bear Righ | Thru | U-Turn | CW-SB | CW-NB | Total | Thru | Bear Left | Left | Hard Left | U-Turn | CW-NB | CW-SB | Total | Hard Righ | Bear Left | Left | Hard Left | U-Turn | CW-NEB | CW-SWB | Total | Total |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 5 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 4 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 5:45 PM | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| Total Volume | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 4 | 0 | 0 | 0 | 0 | 1 | 5 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 3 | 2 | 0 | 0 | 0 | 0 | 1 | 3 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 19 |
| % Approach Total | 0.0 | 66.7 | 0.0 | 0.0 | 0.0 | 0.0 | 33.3 | | 0.0 | 80.0 | 0.0 | 0.0 | 0.0 | 0.0 | 20.0 | | 0.0 | 0.0 | 0.0 | 66.7 | 0.0 | 0.0 | 33.3 | | 33.3 | 0.0 | 0.0 | 0.0 | 0.0 | 16.7 | 50.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | | |
| PHF | 0.000 | 0.250 | 0.000 | 0.000 | 0.000 | 0.000 | 0.250 | 0.375 | 0.000 | 0.500 | 0.000 | 0.000 | 0.000 | 0.000 | 0.250 | 0.625 | 0.000 | 0.000 | 0.000 | 0.500 | 0.000 | 0.000 | 0.250 | 0.375 | 0.500 | 0.000 | 0.000 | 0.000 | 0.000 | 0.250 | 0.750 | 0.750 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.500 | 0.500 | 0.679 |
| Entering Leg | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 4 | 0 | 0 | 0 | 0 | 1 | 5 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 3 | 2 | 0 | 0 | 0 | 0 | 1 | 3 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 19 |
| Exiting Leg | | | | | | | | 1 | | | | | | | | 1 | | | | | | | | 3 | | | | | | | | 8 | | | | | | | | 6 | 19 |
| Total | | | | | | | | 4 | | | | | | | | 6 | | | | | | | | 6 | | | | | | | | 14 | | | | | | | | 8 | 38 |

PDI File #: **175708 II**
Location: **N: L Street NE: Columbia Road NW: Columbia Road**
Location: **E: William J. Day Boulevard W: William J. Day Boulevard**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Pedestrians

| | L Street | | | | | | | | Columbia Road | | | | | | | | William J. Day Boulevard | | | | | | | | William J. Day Boulevard | | | | | | | | Columbia Road | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | | Northeast | | | | | | | | East | | | | | | | | West | | | | | | | | Northwest | | | | | | | | |
| | Hard Righ | Right | Left | Hard Left | U-Turn | CW-EB | CW-WB | Total | Hard Righ | Right | Bear Righ | Hard Left | U-Turn | CW-SEB | CW-NWB | Total | Hard Righ | Right | Bear Righ | Thru | U-Turn | CW-SB | CW-NB | Total | Thru | Bear Left | Left | Hard Left | U-Turn | CW-NB | CW-SB | Total | Hard Righ | Bear Left | Left | Hard Left | U-Turn | CW-NEB | CW-SWB | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 4 | 5 | 9 | 0 | 0 | 0 | 0 | 0 | 4 | 5 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 30 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 4 | 2 | 6 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 20 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 7 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 6 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 7 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 26 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 5 | 1 | 6 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 20 |
| Total | 0 | 0 | 0 | 0 | 0 | 6 | 13 | 19 | 0 | 0 | 0 | 0 | 0 | 9 | 12 | 21 | 0 | 0 | 0 | 0 | 0 | 13 | 13 | 26 | 0 | 0 | 0 | 0 | 0 | 5 | 11 | 16 | 0 | 0 | 0 | 0 | 0 | 4 | 10 | 14 | 96 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 6 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 7 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 21 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 5 | 4 | 9 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 5 | 26 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 19 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 5 | 5 | 10 | 0 | 0 | 0 | 0 | 0 | 6 | 8 | 14 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 6 | 36 |
| Total | 0 | 0 | 0 | 0 | 0 | 5 | 5 | 10 | 0 | 0 | 0 | 0 | 0 | 11 | 12 | 23 | 0 | 0 | 0 | 0 | 0 | 12 | 16 | 28 | 0 | 0 | 0 | 0 | 0 | 7 | 16 | 23 | 0 | 0 | 0 | 0 | 0 | 5 | 13 | 18 | 102 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 11 | 18 | 29 | 0 | 0 | 0 | 0 | 0 | 20 | 24 | 44 | 0 | 0 | 0 | 0 | 0 | 25 | 29 | 54 | 0 | 0 | 0 | 0 | 0 | 12 | 27 | 39 | 0 | 0 | 0 | 0 | 0 | 9 | 23 | 32 | 198 |
| Approach % | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 37.9 | 62.1 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 45.5 | 54.5 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 46.3 | 53.7 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 30.8 | 69.2 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 28.1 | 71.9 | | |
| Total % | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.6 | 9.1 | 14.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 10.1 | 12.1 | 22.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 12.6 | 14.6 | 27.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 6.1 | 13.6 | 19.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.5 | 11.6 | 16.2 | |
| Exiting Leg Total | | | | | | | | 29 | | | | | | | | 44 | | | | | | | | 54 | | | | | | | | 39 | | | | | | | | 32 | 198 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 5:00 PM | L Street | | | | | | | | Columbia Road | | | | | | | | William J. Day Boulevard | | | | | | | | William J. Day Boulevard | | | | | | | | Columbia Road | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | | Northeast | | | | | | | | East | | | | | | | | West | | | | | | | | Northwest | | | | | | | | |
| | Hard Righ | Right | Left | Hard Left | U-Turn | CW-EB | CW-WB | Total | Hard Righ | Right | Bear Righ | Hard Left | U-Turn | CW-SEB | CW-NWB | Total | Hard Righ | Right | Bear Righ | Thru | U-Turn | CW-SB | CW-NB | Total | Thru | Bear Left | Left | Hard Left | U-Turn | CW-NB | CW-SB | Total | Hard Righ | Bear Left | Left | Hard Left | U-Turn | CW-NEB | CW-SWB | Total | Total |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 6 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 7 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 21 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 5 | 4 | 9 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 5 | 26 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 19 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 5 | 5 | 10 | 0 | 0 | 0 | 0 | 0 | 6 | 8 | 14 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 6 | 36 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 5 | 5 | 10 | 0 | 0 | 0 | 0 | 0 | 11 | 12 | 23 | 0 | 0 | 0 | 0 | 0 | 12 | 16 | 28 | 0 | 0 | 0 | 0 | 0 | 7 | 16 | 23 | 0 | 0 | 0 | 0 | 0 | 5 | 13 | 18 | 102 |
| % Approach Total | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 50.0 | 50.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 47.8 | 52.2 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 42.9 | 57.1 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 30.4 | 69.6 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 27.8 | 72.2 | | |
| PHF | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.625 | 0.625 | 0.625 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.550 | 0.600 | 0.575 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.500 | 0.500 | 0.500 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.350 | 0.571 | 0.639 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.625 | 0.813 | 0.750 | 0.708 |
| Entering Leg | 0 | 0 | 0 | 0 | 0 | 5 | 5 | 10 | 0 | 0 | 0 | 0 | 0 | 11 | 12 | 23 | 0 | 0 | 0 | 0 | 0 | 12 | 16 | 28 | 0 | 0 | 0 | 0 | 0 | 7 | 16 | 23 | 0 | 0 | 0 | 0 | 0 | 5 | 13 | 18 | 102 |
| Exiting Leg | | | | | | | | 10 | | | | | | | | 23 | | | | | | | | 28 | | | | | | | | 23 | | | | | | | | 18 | 102 |
| Total | | | | | | | | 20 | | | | | | | | 46 | | | | | | | | 56 | | | | | | | | 46 | | | | | | | | 36 | 204 |

PDI File #: **175708 J**
Location: **S: M Street**
Location: **E: East 1st Street W: East 1st Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Class:

## Cars, Heavy Vehicles, and Buses (Combined)

| | East 1st Street | | | | M Street | | | | East 1st Street | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | East | | | | South | | | | West | | | | |
| | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Total |
| 7:00 AM | 81 | 0 | 0 | 81 | 6 | 28 | 0 | 34 | 0 | 56 | 0 | 56 | 171 |
| 7:15 AM | 97 | 0 | 0 | 97 | 2 | 33 | 0 | 35 | 0 | 51 | 0 | 51 | 183 |
| 7:30 AM | 81 | 0 | 0 | 81 | 2 | 26 | 0 | 28 | 0 | 46 | 1 | 47 | 156 |
| 7:45 AM | 109 | 0 | 0 | 109 | 3 | 30 | 0 | 33 | 0 | 69 | 0 | 69 | 211 |
| Total | 368 | 0 | 0 | 368 | 13 | 117 | 0 | 130 | 0 | 222 | 1 | 223 | 721 |
| 8:00 AM | 116 | 0 | 1 | 117 | 2 | 26 | 0 | 28 | 0 | 62 | 2 | 64 | 209 |
| 8:15 AM | 102 | 0 | 0 | 102 | 2 | 35 | 0 | 37 | 0 | 66 | 0 | 66 | 205 |
| 8:30 AM | 70 | 0 | 0 | 70 | 4 | 16 | 0 | 20 | 0 | 42 | 0 | 42 | 132 |
| 8:45 AM | 70 | 0 | 0 | 70 | 3 | 15 | 0 | 18 | 0 | 50 | 0 | 50 | 138 |
| Total | 358 | 0 | 1 | 359 | 11 | 92 | 0 | 103 | 0 | 220 | 2 | 222 | 684 |
| Grand Total | 726 | 0 | 1 | 727 | 24 | 209 | 0 | 233 | 0 | 442 | 3 | 445 | 1405 |
| Approach % | 99.9 | 0.0 | 0.1 | | 10.3 | 89.7 | 0.0 | | 0.0 | 99.3 | 0.7 | | |
| Total % | 51.7 | 0.0 | 0.1 | 51.7 | 1.7 | 14.9 | 0.0 | 16.6 | 0.0 | 31.5 | 0.2 | 31.7 | |
| Exiting Leg Total | | | | 467 | | | | 0 | | | | 938 | 1405 |
| Cars | 668 | 0 | 1 | 669 | 24 | 206 | 0 | 230 | 0 | 309 | 3 | 312 | 1211 |
| % Cars | 92.0 | 0.0 | 100.0 | 92.0 | 100.0 | 98.6 | 0.0 | 98.7 | 0.0 | 69.9 | 100.0 | 70.1 | 86.2 |
| Exiting Leg Total | | | | 334 | | | | 0 | | | | 877 | 1211 |
| Heavy Vehicles | 55 | 0 | 0 | 55 | 0 | 3 | 0 | 3 | 0 | 79 | 0 | 79 | 137 |
| % Heavy Vehicles | 7.6 | 0.0 | 0.0 | 7.6 | 0.0 | 1.4 | 0.0 | 1.3 | 0.0 | 17.9 | 0.0 | 17.8 | 9.8 |
| Exiting Leg Total | | | | 79 | | | | 0 | | | | 58 | 137 |
| Buses | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 54 | 0 | 54 | 57 |
| % Buses | 0.4 | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 12.2 | 0.0 | 12.1 | 4.1 |
| Exiting Leg Total | | | | 54 | | | | 0 | | | | 3 | 57 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:30 AM | East 1st Street | | | | M Street | | | | East 1st Street | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | East | | | | South | | | | West | | | | |
| | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Total |
| 7:30 AM | 81 | 0 | 0 | 81 | 2 | 26 | 0 | 28 | 0 | 46 | 1 | 47 | 156 |
| 7:45 AM | 109 | 0 | 0 | 109 | 3 | 30 | 0 | 33 | 0 | 69 | 0 | 69 | 211 |
| 8:00 AM | 116 | 0 | 1 | 117 | 2 | 26 | 0 | 28 | 0 | 62 | 2 | 64 | 209 |
| 8:15 AM | 102 | 0 | 0 | 102 | 2 | 35 | 0 | 37 | 0 | 66 | 0 | 66 | 205 |
| Total Volume | 408 | 0 | 1 | 409 | 9 | 117 | 0 | 126 | 0 | 243 | 3 | 246 | 781 |
| % Approach Total | 99.8 | 0.0 | 0.2 | | 7.1 | 92.9 | 0.0 | | 0.0 | 98.8 | 1.2 | | |
| PHF | 0.879 | 0.000 | 0.250 | 0.874 | 0.750 | 0.836 | 0.000 | 0.851 | 0.000 | 0.880 | 0.375 | 0.891 | 0.925 |
| Cars | 392 | 0 | 1 | 393 | 9 | 115 | 0 | 124 | 0 | 173 | 3 | 176 | 693 |
| Cars % | 96.1 | 0.0 | 100.0 | 96.1 | 100.0 | 98.3 | 0.0 | 98.4 | 0.0 | 71.2 | 100.0 | 71.5 | 88.7 |
| Heavy Vehicles | 14 | 0 | 0 | 14 | 0 | 2 | 0 | 2 | 0 | 42 | 0 | 42 | 58 |
| Heavy Vehicles % | 3.4 | 0.0 | 0.0 | 3.4 | 0.0 | 1.7 | 0.0 | 1.6 | 0.0 | 17.3 | 0.0 | 17.1 | 7.4 |
| Buses | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 28 | 0 | 28 | 30 |
| Buses % | 0.5 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 11.5 | 0.0 | 11.4 | 3.8 |
| Cars Enter Leg | 392 | 0 | 1 | 393 | 9 | 115 | 0 | 124 | 0 | 173 | 3 | 176 | 693 |
| Heavy Enter Leg | 14 | 0 | 0 | 14 | 0 | 2 | 0 | 2 | 0 | 42 | 0 | 42 | 58 |
| Bus Enter Leg | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 28 | 0 | 28 | 30 |
| Total Entering Leg | 408 | 0 | 1 | 409 | 9 | 117 | 0 | 126 | 0 | 243 | 3 | 246 | 781 |
| Cars Exiting Leg | | | | 183 | | | | 0 | | | | 510 | 693 |
| Heavy Exiting Leg | | | | 42 | | | | 0 | | | | 16 | 58 |
| Buses Exiting Leg | | | | 28 | | | | 0 | | | | 2 | 30 |
| Total Exiting Leg | | | | 253 | | | | 0 | | | | 528 | 781 |

PDI File #: **175708 J**
Location: **S: M Street**
Location: **E: East 1st Street W: East 1st Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Class:

## Cars

| | East 1st Street | | | | M Street | | | | East 1st Street | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | East | | | | South | | | | West | | | | |
| | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Total |
| 7:00 AM | 78 | 0 | 0 | 78 | 6 | 28 | 0 | 34 | 0 | 44 | 0 | 44 | 156 |
| 7:15 AM | 90 | 0 | 0 | 90 | 2 | 33 | 0 | 35 | 0 | 34 | 0 | 34 | 159 |
| 7:30 AM | 78 | 0 | 0 | 78 | 2 | 26 | 0 | 28 | 0 | 29 | 1 | 30 | 136 |
| 7:45 AM | 106 | 0 | 0 | 106 | 3 | 29 | 0 | 32 | 0 | 53 | 0 | 53 | 191 |
| Total | 352 | 0 | 0 | 352 | 13 | 116 | 0 | 129 | 0 | 160 | 1 | 161 | 642 |
| 8:00 AM | 113 | 0 | 1 | 114 | 2 | 26 | 0 | 28 | 0 | 43 | 2 | 45 | 187 |
| 8:15 AM | 95 | 0 | 0 | 95 | 2 | 34 | 0 | 36 | 0 | 48 | 0 | 48 | 179 |
| 8:30 AM | 53 | 0 | 0 | 53 | 4 | 15 | 0 | 19 | 0 | 26 | 0 | 26 | 98 |
| 8:45 AM | 55 | 0 | 0 | 55 | 3 | 15 | 0 | 18 | 0 | 32 | 0 | 32 | 105 |
| Total | 316 | 0 | 1 | 317 | 11 | 90 | 0 | 101 | 0 | 149 | 2 | 151 | 569 |
| Grand Total | 668 | 0 | 1 | 669 | 24 | 206 | 0 | 230 | 0 | 309 | 3 | 312 | 1211 |
| Approach % | 99.9 | 0.0 | 0.1 | | 10.4 | 89.6 | 0.0 | | 0.0 | 99.0 | 1.0 | | |
| Total % | 55.2 | 0.0 | 0.1 | 55.2 | 2.0 | 17.0 | 0.0 | 19.0 | 0.0 | 25.5 | 0.2 | 25.8 | |
| Exiting Leg Total | | | | 334 | | | | 0 | | | | 877 | 1211 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:30 AM | East 1st Street | | | | M Street | | | | East 1st Street | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | East | | | | South | | | | West | | | | |
| | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Total |
| 7:30 AM | 78 | 0 | 0 | 78 | 2 | 26 | 0 | 28 | 0 | 29 | 1 | 30 | 136 |
| 7:45 AM | 106 | 0 | 0 | 106 | 3 | 29 | 0 | 32 | 0 | 53 | 0 | 53 | 191 |
| 8:00 AM | 113 | 0 | 1 | 114 | 2 | 26 | 0 | 28 | 0 | 43 | 2 | 45 | 187 |
| 8:15 AM | 95 | 0 | 0 | 95 | 2 | 34 | 0 | 36 | 0 | 48 | 0 | 48 | 179 |
| Total Volume | 392 | 0 | 1 | 393 | 9 | 115 | 0 | 124 | 0 | 173 | 3 | 176 | 693 |
| % Approach Total | 99.7 | 0.0 | 0.3 | | 7.3 | 92.7 | 0.0 | | 0.0 | 98.3 | 1.7 | | |
| PHF | 0.867 | 0.000 | 0.250 | 0.862 | 0.750 | 0.846 | 0.000 | 0.861 | 0.000 | 0.816 | 0.375 | 0.830 | 0.907 |
| Entering Leg | 392 | 0 | 1 | 393 | 9 | 115 | 0 | 124 | 0 | 173 | 3 | 176 | 693 |
| Exiting Leg | | | | 183 | | | | 0 | | | | 510 | 693 |
| Total | | | | 576 | | | | 124 | | | | 686 | 1386 |

PDI File #: **175708 J**
Location: **S: M Street**
Location: **E: East 1st Street W: East 1st Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Class:

## Heavy Vehicles

| | East 1st Street | | | | M Street | | | | East 1st Street | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | East | | | | South | | | | West | | | | |
| | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Total |
| 7:00 AM | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 5 | 8 |
| 7:15 AM | 7 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 10 | 17 |
| 7:30 AM | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 11 | 13 |
| 7:45 AM | 3 | 0 | 0 | 3 | 0 | 1 | 0 | 1 | 0 | 8 | 0 | 8 | 12 |
| Total | 15 | 0 | 0 | 15 | 0 | 1 | 0 | 1 | 0 | 34 | 0 | 34 | 50 |
| 8:00 AM | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 14 | 16 |
| 8:15 AM | 7 | 0 | 0 | 7 | 0 | 1 | 0 | 1 | 0 | 9 | 0 | 9 | 17 |
| 8:30 AM | 16 | 0 | 0 | 16 | 0 | 1 | 0 | 1 | 0 | 10 | 0 | 10 | 27 |
| 8:45 AM | 15 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 12 | 27 |
| Total | 40 | 0 | 0 | 40 | 0 | 2 | 0 | 2 | 0 | 45 | 0 | 45 | 87 |
| Grand Total | 55 | 0 | 0 | 55 | 0 | 3 | 0 | 3 | 0 | 79 | 0 | 79 | 137 |
| Approach % | 100.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | | 0.0 | 100.0 | 0.0 | | |
| Total % | 40.1 | 0.0 | 0.0 | 40.1 | 0.0 | 2.2 | 0.0 | 2.2 | 0.0 | 57.7 | 0.0 | 57.7 | |
| Exiting Leg Total | | | | 79 | | | | 0 | | | | 58 | 137 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 8:00 AM | East 1st Street | | | | M Street | | | | East 1st Street | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | East | | | | South | | | | West | | | | |
| | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Total |
| 8:00 AM | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 14 | 16 |
| 8:15 AM | 7 | 0 | 0 | 7 | 0 | 1 | 0 | 1 | 0 | 9 | 0 | 9 | 17 |
| 8:30 AM | 16 | 0 | 0 | 16 | 0 | 1 | 0 | 1 | 0 | 10 | 0 | 10 | 27 |
| 8:45 AM | 15 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 12 | 27 |
| Total Volume | 40 | 0 | 0 | 40 | 0 | 2 | 0 | 2 | 0 | 45 | 0 | 45 | 87 |
| % Approach Total | 100.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | | 0.0 | 100.0 | 0.0 | | |
| PHF | 0.625 | 0.000 | 0.000 | 0.625 | 0.000 | 0.500 | 0.000 | 0.500 | 0.000 | 0.804 | 0.000 | 0.804 | 0.806 |
| Entering Leg | 40 | 0 | 0 | 40 | 0 | 2 | 0 | 2 | 0 | 45 | 0 | 45 | 87 |
| Exiting Leg | | | | 45 | | | | 0 | | | | 42 | 87 |
| Total | | | | 85 | | | | 2 | | | | 87 | 174 |

PDI File #: **175708 J**
Location: **S: M Street**
Location: **E: East 1st Street W: East 1st Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Buses

| | East 1st Street | | | | M Street | | | | East 1st Street | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | East | | | | South | | | | West | | | | |
| | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Total |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 7 | 7 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 7 | 7 |
| 7:30 AM | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 6 | 7 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 8 | 8 |
| Total | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 28 | 0 | 28 | 29 |
| 8:00 AM | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 5 | 6 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 9 | 9 |
| 8:30 AM | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 6 | 7 |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 6 | 6 |
| Total | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 26 | 0 | 26 | 28 |
| Grand Total | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 54 | 0 | 54 | 57 |
| Approach % | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | | |
| Total % | 5.3 | 0.0 | 0.0 | 5.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 94.7 | 0.0 | 94.7 | |
| Exiting Leg Total | | | | 54 | | | | 0 | | | | 3 | 57 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:30 AM | East 1st Street | | | | M Street | | | | East 1st Street | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | East | | | | South | | | | West | | | | |
| | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Total |
| 7:30 AM | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 6 | 7 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 8 | 8 |
| 8:00 AM | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 5 | 6 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 9 | 9 |
| Total Volume | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 28 | 0 | 28 | 30 |
| % Approach Total | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | | |
| PHF | 0.500 | 0.000 | 0.000 | 0.500 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.778 | 0.000 | 0.778 | 0.833 |
| Entering Leg | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 28 | 0 | 28 | 30 |
| Exiting Leg | | | | 28 | | | | 0 | | | | 2 | 30 |
| Total | | | | 30 | | | | 0 | | | | 30 | 60 |

PDI File #: **175708 J**
Location: **S: M Street**
Location: **E: East 1st Street W: East 1st Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Bicycles (on Roadway and Crosswalks)

| | East 1st Street | | | | | | M Street | | | | | | East 1st Street | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | East | | | | | | South | | | | | | West | | | | | | |
| | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:00 AM | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 7:15 AM | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 7:30 AM | 4 | 0 | 0 | 0 | 0 | 4 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 6 |
| 7:45 AM | 5 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| Total | 11 | 0 | 0 | 0 | 0 | 11 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 1 | 14 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 |
| 8:15 AM | 6 | 0 | 0 | 0 | 0 | 6 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 8:30 AM | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 8:45 AM | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Total | 8 | 0 | 0 | 0 | 0 | 8 | 0 | 3 | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 1 | 12 |
| Grand Total | 19 | 0 | 0 | 0 | 0 | 19 | 0 | 5 | 0 | 0 | 0 | 5 | 0 | 2 | 0 | 0 | 0 | 2 | 26 |
| Approach % | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | | |
| Total % | 73.1 | 0.0 | 0.0 | 0.0 | 0.0 | 73.1 | 0.0 | 19.2 | 0.0 | 0.0 | 0.0 | 19.2 | 0.0 | 7.7 | 0.0 | 0.0 | 0.0 | 7.7 | |
| Exiting Leg Total | | | | | | 2 | | | | | | 0 | | | | | | 24 | 26 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:30 AM | East 1st Street | | | | | | M Street | | | | | | East 1st Street | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | East | | | | | | South | | | | | | West | | | | | | |
| | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:30 AM | 4 | 0 | 0 | 0 | 0 | 4 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 6 |
| 7:45 AM | 5 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 |
| 8:15 AM | 6 | 0 | 0 | 0 | 0 | 6 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| Total Volume | 15 | 0 | 0 | 0 | 0 | 15 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 2 | 19 |
| % Approach Total | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | | |
| PHF | 0.625 | 0.000 | 0.000 | 0.000 | 0.000 | 0.625 | 0.000 | 0.500 | 0.000 | 0.000 | 0.000 | 0.500 | 0.000 | 0.500 | 0.000 | 0.000 | 0.000 | 0.500 | 0.679 |
| Entering Leg | 15 | 0 | 0 | 0 | 0 | 15 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 2 | 19 |
| Exiting Leg | | | | | | 2 | | | | | | 0 | | | | | | 17 | 19 |
| Total | | | | | | 17 | | | | | | 2 | | | | | | 19 | 38 |

PDI File #: **175708 J**
Location: **S: M Street**
Location: **E: East 1st Street W: East 1st Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Pedestrians

| | East 1st Street | | | | | | M Street | | | | | | East 1st Street | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | East | | | | | | South | | | | | | West | | | | | | |
| | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 4 | 0 | 0 | 0 | 1 | 0 | 1 | 5 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 5 | 0 | 0 | 0 | 1 | 0 | 1 | 6 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 2 | 0 | 2 | 3 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 5 | 13 | 0 | 0 | 0 | 4 | 0 | 4 | 17 |
| 8:00 AM | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 8:30 AM | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 3 | 0 | 3 | 7 |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| Total | 0 | 0 | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 6 | 4 | 10 | 0 | 0 | 0 | 3 | 0 | 3 | 16 |
| Grand Total | 0 | 0 | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 14 | 9 | 23 | 0 | 0 | 0 | 7 | 0 | 7 | 33 |
| Approach % | 0.0 | 0.0 | 0.0 | 66.7 | 33.3 | | 0.0 | 0.0 | 0.0 | 60.9 | 39.1 | | 0.0 | 0.0 | 0.0 | 100.0 | 0.0 | | |
| Total % | 0.0 | 0.0 | 0.0 | 6.1 | 3.0 | 9.1 | 0.0 | 0.0 | 0.0 | 42.4 | 27.3 | 69.7 | 0.0 | 0.0 | 0.0 | 21.2 | 0.0 | 21.2 | |
| Exiting Leg Total | | | | | | 3 | | | | | | 23 | | | | | | 7 | 33 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:00 AM | East 1st Street | | | | | | M Street | | | | | | East 1st Street | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | East | | | | | | South | | | | | | West | | | | | | |
| | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 4 | 0 | 0 | 0 | 1 | 0 | 1 | 5 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 5 | 0 | 0 | 0 | 1 | 0 | 1 | 6 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 2 | 0 | 2 | 3 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 5 | 13 | 0 | 0 | 0 | 4 | 0 | 4 | 17 |
| % Approach Total | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 61.5 | 38.5 | | 0.0 | 0.0 | 0.0 | 100.0 | 0.0 | | |
| PHF | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.500 | 0.417 | 0.650 | 0.000 | 0.000 | 0.000 | 0.500 | 0.000 | 0.500 | 0.708 |
| Entering Leg | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 5 | 13 | 0 | 0 | 0 | 4 | 0 | 4 | 17 |
| Exiting Leg | | | | | | 0 | | | | | | 13 | | | | | | 4 | 17 |
| Total | | | | | | 0 | | | | | | 26 | | | | | | 8 | 34 |

PDI File #: **175708 JJ**
Location: **S: M Street**
Location: **E: East 1st Street W: East 1st Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Cars, Heavy Vehicles, and Buses (Combined)

| | East 1st Street | | | | M Street | | | | East 1st Street | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | East | | | | South | | | | West | | | | |
| | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Total |
| 4:00 PM | 53 | 0 | 0 | 53 | 4 | 9 | 0 | 13 | 1 | 84 | 0 | 85 | 151 |
| 4:15 PM | 58 | 0 | 0 | 58 | 5 | 8 | 0 | 13 | 2 | 97 | 0 | 99 | 170 |
| 4:30 PM | 49 | 0 | 0 | 49 | 7 | 7 | 0 | 14 | 0 | 93 | 0 | 93 | 156 |
| 4:45 PM | 58 | 0 | 0 | 58 | 6 | 10 | 0 | 16 | 0 | 82 | 0 | 82 | 156 |
| Total | 218 | 0 | 0 | 218 | 22 | 34 | 0 | 56 | 3 | 356 | 0 | 359 | 633 |
| 5:00 PM | 48 | 0 | 1 | 49 | 7 | 8 | 0 | 15 | 0 | 90 | 0 | 90 | 154 |
| 5:15 PM | 38 | 0 | 0 | 38 | 5 | 10 | 0 | 15 | 0 | 101 | 0 | 101 | 154 |
| 5:30 PM | 53 | 0 | 0 | 53 | 3 | 7 | 0 | 10 | 0 | 99 | 1 | 100 | 163 |
| 5:45 PM | 38 | 0 | 0 | 38 | 7 | 9 | 0 | 16 | 0 | 99 | 0 | 99 | 153 |
| Total | 177 | 0 | 1 | 178 | 22 | 34 | 0 | 56 | 0 | 389 | 1 | 390 | 624 |
| Grand Total | 395 | 0 | 1 | 396 | 44 | 68 | 0 | 112 | 3 | 745 | 1 | 749 | 1257 |
| Approach % | 99.7 | 0.0 | 0.3 | | 39.3 | 60.7 | 0.0 | | 0.4 | 99.5 | 0.1 | | |
| Total % | 31.4 | 0.0 | 0.1 | 31.5 | 3.5 | 5.4 | 0.0 | 8.9 | 0.2 | 59.3 | 0.1 | 59.6 | |
| Exiting Leg Total | | | | 790 | | | | 3 | | | | 464 | 1257 |
| Cars | 332 | 0 | 1 | 333 | 43 | 66 | 0 | 109 | 3 | 723 | 1 | 727 | 1169 |
| % Cars | 84.1 | 0.0 | 100.0 | 84.1 | 97.7 | 97.1 | 0.0 | 97.3 | 100.0 | 97.0 | 100.0 | 97.1 | 93.0 |
| Exiting Leg Total | | | | 767 | | | | 3 | | | | 399 | 1169 |
| Heavy Vehicles | 44 | 0 | 0 | 44 | 0 | 2 | 0 | 2 | 0 | 15 | 0 | 15 | 61 |
| % Heavy Vehicles | 11.1 | 0.0 | 0.0 | 11.1 | 0.0 | 2.9 | 0.0 | 1.8 | 0.0 | 2.0 | 0.0 | 2.0 | 4.9 |
| Exiting Leg Total | | | | 15 | | | | 0 | | | | 46 | 61 |
| Buses | 19 | 0 | 0 | 19 | 1 | 0 | 0 | 1 | 0 | 7 | 0 | 7 | 27 |
| % Buses | 4.8 | 0.0 | 0.0 | 4.8 | 2.3 | 0.0 | 0.0 | 0.9 | 0.0 | 0.9 | 0.0 | 0.9 | 2.1 |
| Exiting Leg Total | | | | 8 | | | | 0 | | | | 19 | 27 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:15 PM | East 1st Street | | | | M Street | | | | East 1st Street | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | East | | | | South | | | | West | | | | |
| | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Total |
| 4:15 PM | 58 | 0 | 0 | 58 | 5 | 8 | 0 | 13 | 2 | 97 | 0 | 99 | 170 |
| 4:30 PM | 49 | 0 | 0 | 49 | 7 | 7 | 0 | 14 | 0 | 93 | 0 | 93 | 156 |
| 4:45 PM | 58 | 0 | 0 | 58 | 6 | 10 | 0 | 16 | 0 | 82 | 0 | 82 | 156 |
| 5:00 PM | 48 | 0 | 1 | 49 | 7 | 8 | 0 | 15 | 0 | 90 | 0 | 90 | 154 |
| Total Volume | 213 | 0 | 1 | 214 | 25 | 33 | 0 | 58 | 2 | 362 | 0 | 364 | 636 |
| % Approach Total | 99.5 | 0.0 | 0.5 | | 43.1 | 56.9 | 0.0 | | 0.5 | 99.5 | 0.0 | | |
| PHF | 0.918 | 0.000 | 0.250 | 0.922 | 0.893 | 0.825 | 0.000 | 0.906 | 0.250 | 0.933 | 0.000 | 0.919 | 0.935 |
| Cars | 174 | 0 | 1 | 175 | 24 | 32 | 0 | 56 | 2 | 354 | 0 | 356 | 587 |
| Cars % | 81.7 | 0.0 | 100.0 | 81.8 | 96.0 | 97.0 | 0.0 | 96.6 | 100.0 | 97.8 | 0.0 | 97.8 | 92.3 |
| Heavy Vehicles | 29 | 0 | 0 | 29 | 0 | 1 | 0 | 1 | 0 | 4 | 0 | 4 | 34 |
| Heavy Vehicles % | 13.6 | 0.0 | 0.0 | 13.6 | 0.0 | 3.0 | 0.0 | 1.7 | 0.0 | 1.1 | 0.0 | 1.1 | 5.3 |
| Buses | 10 | 0 | 0 | 10 | 1 | 0 | 0 | 1 | 0 | 4 | 0 | 4 | 15 |
| Buses % | 4.7 | 0.0 | 0.0 | 4.7 | 4.0 | 0.0 | 0.0 | 1.7 | 0.0 | 1.1 | 0.0 | 1.1 | 2.4 |
| Cars Enter Leg | 174 | 0 | 1 | 175 | 24 | 32 | 0 | 56 | 2 | 354 | 0 | 356 | 587 |
| Heavy Enter Leg | 29 | 0 | 0 | 29 | 0 | 1 | 0 | 1 | 0 | 4 | 0 | 4 | 34 |
| Bus Enter Leg | 10 | 0 | 0 | 10 | 1 | 0 | 0 | 1 | 0 | 4 | 0 | 4 | 15 |
| Total Entering Leg | 213 | 0 | 1 | 214 | 25 | 33 | 0 | 58 | 2 | 362 | 0 | 364 | 636 |
| Cars Exiting Leg | | | | 379 | | | | 2 | | | | 206 | 587 |
| Heavy Exiting Leg | | | | 4 | | | | 0 | | | | 30 | 34 |
| Buses Exiting Leg | | | | 5 | | | | 0 | | | | 10 | 15 |
| Total Exiting Leg | | | | 388 | | | | 2 | | | | 246 | 636 |

PDI File #: **175708 JJ**
Location: **S: M Street**
Location: **E: East 1st Street W: East 1st Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Class:

## Cars

| | East 1st Street | | | | M Street | | | | East 1st Street | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | East | | | | South | | | | West | | | | |
| | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Total |
| 4:00 PM | 40 | 0 | 0 | 40 | 4 | 9 | 0 | 13 | 1 | 73 | 0 | 74 | 127 |
| 4:15 PM | 37 | 0 | 0 | 37 | 4 | 7 | 0 | 11 | 2 | 94 | 0 | 96 | 144 |
| 4:30 PM | 41 | 0 | 0 | 41 | 7 | 7 | 0 | 14 | 0 | 90 | 0 | 90 | 145 |
| 4:45 PM | 51 | 0 | 0 | 51 | 6 | 10 | 0 | 16 | 0 | 82 | 0 | 82 | 149 |
| Total | 169 | 0 | 0 | 169 | 21 | 33 | 0 | 54 | 3 | 339 | 0 | 342 | 565 |
| 5:00 PM | 45 | 0 | 1 | 46 | 7 | 8 | 0 | 15 | 0 | 88 | 0 | 88 | 149 |
| 5:15 PM | 36 | 0 | 0 | 36 | 5 | 10 | 0 | 15 | 0 | 100 | 0 | 100 | 151 |
| 5:30 PM | 48 | 0 | 0 | 48 | 3 | 7 | 0 | 10 | 0 | 98 | 1 | 99 | 157 |
| 5:45 PM | 34 | 0 | 0 | 34 | 7 | 8 | 0 | 15 | 0 | 98 | 0 | 98 | 147 |
| Total | 163 | 0 | 1 | 164 | 22 | 33 | 0 | 55 | 0 | 384 | 1 | 385 | 604 |
| Grand Total | 332 | 0 | 1 | 333 | 43 | 66 | 0 | 109 | 3 | 723 | 1 | 727 | 1169 |
| Approach % | 99.7 | 0.0 | 0.3 | | 39.4 | 60.6 | 0.0 | | 0.4 | 99.4 | 0.1 | | |
| Total % | 28.4 | 0.0 | 0.1 | 28.5 | 3.7 | 5.6 | 0.0 | 9.3 | 0.3 | 61.8 | 0.1 | 62.2 | |
| Exiting Leg Total | | | | 767 | | | | 3 | | | | 399 | 1169 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:45 PM | East 1st Street | | | | M Street | | | | East 1st Street | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | East | | | | South | | | | West | | | | |
| | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Total |
| 4:45 PM | 51 | 0 | 0 | 51 | 6 | 10 | 0 | 16 | 0 | 82 | 0 | 82 | 149 |
| 5:00 PM | 45 | 0 | 1 | 46 | 7 | 8 | 0 | 15 | 0 | 88 | 0 | 88 | 149 |
| 5:15 PM | 36 | 0 | 0 | 36 | 5 | 10 | 0 | 15 | 0 | 100 | 0 | 100 | 151 |
| 5:30 PM | 48 | 0 | 0 | 48 | 3 | 7 | 0 | 10 | 0 | 98 | 1 | 99 | 157 |
| Total Volume | 180 | 0 | 1 | 181 | 21 | 35 | 0 | 56 | 0 | 368 | 1 | 369 | 606 |
| % Approach Total | 99.4 | 0.0 | 0.6 | | 37.5 | 62.5 | 0.0 | | 0.0 | 99.7 | 0.3 | | |
| PHF | 0.882 | 0.000 | 0.250 | 0.887 | 0.750 | 0.875 | 0.000 | 0.875 | 0.000 | 0.920 | 0.250 | 0.923 | 0.965 |
| Entering Leg | 180 | 0 | 1 | 181 | 21 | 35 | 0 | 56 | 0 | 368 | 1 | 369 | 606 |
| Exiting Leg | | | | 390 | | | | 0 | | | | 216 | 606 |
| Total | | | | 571 | | | | 56 | | | | 585 | 1212 |

PDI File #: **175708 JJ**
Location: **S: M Street**
Location: **E: East 1st Street W: East 1st Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Class:

## Heavy Vehicles

| | East 1st Street | | | | M Street | | | | East 1st Street | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | East | | | | South | | | | West | | | | |
| | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Total |
| 4:00 PM | 13 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 9 | 22 |
| 4:15 PM | 19 | 0 | 0 | 19 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 20 |
| 4:30 PM | 7 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 9 |
| 4:45 PM | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Total | 41 | 0 | 0 | 41 | 0 | 1 | 0 | 1 | 0 | 11 | 0 | 11 | 53 |
| 5:00 PM | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 3 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| 5:30 PM | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 2 |
| Total | 3 | 0 | 0 | 3 | 0 | 1 | 0 | 1 | 0 | 4 | 0 | 4 | 8 |
| Grand Total | 44 | 0 | 0 | 44 | 0 | 2 | 0 | 2 | 0 | 15 | 0 | 15 | 61 |
| Approach % | 100.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | | 0.0 | 100.0 | 0.0 | | |
| Total % | 72.1 | 0.0 | 0.0 | 72.1 | 0.0 | 3.3 | 0.0 | 3.3 | 0.0 | 24.6 | 0.0 | 24.6 | |
| Exiting Leg Total | | | | 15 | | | | 0 | | | | 46 | 61 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:00 PM | East 1st Street | | | | M Street | | | | East 1st Street | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | East | | | | South | | | | West | | | | |
| | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Total |
| 4:00 PM | 13 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 9 | 22 |
| 4:15 PM | 19 | 0 | 0 | 19 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 20 |
| 4:30 PM | 7 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 9 |
| 4:45 PM | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Total Volume | 41 | 0 | 0 | 41 | 0 | 1 | 0 | 1 | 0 | 11 | 0 | 11 | 53 |
| % Approach Total | 100.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | | 0.0 | 100.0 | 0.0 | | |
| PHF | 0.539 | 0.000 | 0.000 | 0.539 | 0.000 | 0.250 | 0.000 | 0.250 | 0.000 | 0.306 | 0.000 | 0.306 | 0.602 |
| Entering Leg | 41 | 0 | 0 | 41 | 0 | 1 | 0 | 1 | 0 | 11 | 0 | 11 | 53 |
| Exiting Leg | | | | 11 | | | | 0 | | | | 42 | 53 |
| Total | | | | 52 | | | | 1 | | | | 53 | 106 |

PDI File #: **175708 JJ**
Location: **S: M Street**
Location: **E: East 1st Street W: East 1st Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Buses

| | East 1st Street | | | | M Street | | | | East 1st Street | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | East | | | | South | | | | West | | | | |
| | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 2 |
| 4:15 PM | 2 | 0 | 0 | 2 | 1 | 0 | 0 | 1 | 0 | 3 | 0 | 3 | 6 |
| 4:30 PM | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 |
| 4:45 PM | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| Total | 8 | 0 | 0 | 8 | 1 | 0 | 0 | 1 | 0 | 6 | 0 | 6 | 15 |
| 5:00 PM | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 5:15 PM | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 5:30 PM | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 4 |
| 5:45 PM | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| Total | 11 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 12 |
| Grand Total | 19 | 0 | 0 | 19 | 1 | 0 | 0 | 1 | 0 | 7 | 0 | 7 | 27 |
| Approach % | 100.0 | 0.0 | 0.0 | | 100.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | | |
| Total % | 70.4 | 0.0 | 0.0 | 70.4 | 3.7 | 0.0 | 0.0 | 3.7 | 0.0 | 25.9 | 0.0 | 25.9 | |
| Exiting Leg Total | | | | 8 | | | | 0 | | | | 19 | 27 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:00 PM | East 1st Street | | | | M Street | | | | East 1st Street | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | East | | | | South | | | | West | | | | |
| | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 2 |
| 4:15 PM | 2 | 0 | 0 | 2 | 1 | 0 | 0 | 1 | 0 | 3 | 0 | 3 | 6 |
| 4:30 PM | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 |
| 4:45 PM | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| Total Volume | 8 | 0 | 0 | 8 | 1 | 0 | 0 | 1 | 0 | 6 | 0 | 6 | 15 |
| % Approach Total | 100.0 | 0.0 | 0.0 | | 100.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | | |
| PHF | 0.400 | 0.000 | 0.000 | 0.400 | 0.250 | 0.000 | 0.000 | 0.250 | 0.000 | 0.500 | 0.000 | 0.500 | 0.625 |
| Entering Leg | 8 | 0 | 0 | 8 | 1 | 0 | 0 | 1 | 0 | 6 | 0 | 6 | 15 |
| Exiting Leg | | | | 7 | | | | 0 | | | | 8 | 15 |
| Total | | | | 15 | | | | 1 | | | | 14 | 30 |

PDI File #: **175708 JJ**
Location: **S: M Street**
Location: **E: East 1st Street W: East 1st Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Bicycles (on Roadway and Crosswalks)

| | East 1st Street | | | | | | M Street | | | | | | East 1st Street | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | East | | | | | | South | | | | | | West | | | | | | |
| | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | U-Turn | CW-NB | CW-SB | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:30 PM | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 4:45 PM | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 2 |
| Total | 2 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 2 | 5 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 2 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 0 | 0 | 0 | 5 | 5 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 9 | 9 |
| 5:45 PM | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 3 | 0 | 0 | 0 | 3 | 7 |
| Total | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 2 | 2 | 17 | 0 | 0 | 0 | 19 | 23 |
| Grand Total | 4 | 0 | 0 | 0 | 0 | 4 | 1 | 2 | 0 | 0 | 0 | 3 | 2 | 19 | 0 | 0 | 0 | 21 | 28 |
| Approach % | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 33.3 | 66.7 | 0.0 | 0.0 | 0.0 | | 9.5 | 90.5 | 0.0 | 0.0 | 0.0 | | |
| Total % | 14.3 | 0.0 | 0.0 | 0.0 | 0.0 | 14.3 | 3.6 | 7.1 | 0.0 | 0.0 | 0.0 | 10.7 | 7.1 | 67.9 | 0.0 | 0.0 | 0.0 | 75.0 | |
| Exiting Leg Total | | | | | | 20 | | | | | | 2 | | | | | | 6 | 28 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 5:00 PM | East 1st Street | | | | | | M Street | | | | | | East 1st Street | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | East | | | | | | South | | | | | | West | | | | | | |
| | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | U-Turn | CW-NB | CW-SB | Total | Total |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 2 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 0 | 0 | 0 | 5 | 5 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 9 | 9 |
| 5:45 PM | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 3 | 0 | 0 | 0 | 3 | 7 |
| Total Volume | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 2 | 2 | 17 | 0 | 0 | 0 | 19 | 23 |
| % Approach Total | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | | 10.5 | 89.5 | 0.0 | 0.0 | 0.0 | | |
| PHF | 0.250 | 0.000 | 0.000 | 0.000 | 0.000 | 0.250 | 0.000 | 0.250 | 0.000 | 0.000 | 0.000 | 0.250 | 0.250 | 0.472 | 0.000 | 0.000 | 0.000 | 0.528 | 0.639 |
| Entering Leg | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 2 | 2 | 17 | 0 | 0 | 0 | 19 | 23 |
| Exiting Leg | | | | | | 17 | | | | | | 2 | | | | | | 4 | 23 |
| Total | | | | | | 19 | | | | | | 4 | | | | | | 23 | 46 |

PDI File #: **175708 JJ**
Location: **S: M Street**
Location: **E: East 1st Street W: East 1st Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Pedestrians

| | East 1st Street (East) | | | | | | M Street (South) | | | | | | East 1st Street (West) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | U-Turn | CW-NB | CW-SB | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 2 | 1 | 3 | 7 |
| 4:15 PM | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 3 | 7 | 10 | 0 | 0 | 0 | 0 | 1 | 1 | 13 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 6 | 0 | 0 | 0 | 2 | 1 | 3 | 9 |
| Total | 0 | 0 | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 10 | 10 | 20 | 0 | 0 | 0 | 4 | 3 | 7 | 30 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 2 | 1 | 3 | 5 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 0 | 0 | 0 | 0 | 1 | 1 | 5 |
| 5:30 PM | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 3 | 3 | 7 |
| 5:45 PM | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 3 | 2 | 5 | 0 | 0 | 0 | 3 | 1 | 4 | 11 |
| Total | 0 | 0 | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 4 | 10 | 14 | 0 | 0 | 0 | 5 | 6 | 11 | 28 |
| Grand Total | 0 | 0 | 0 | 4 | 2 | 6 | 0 | 0 | 0 | 14 | 20 | 34 | 0 | 0 | 0 | 9 | 9 | 18 | 58 |
| Approach % | 0.0 | 0.0 | 0.0 | 66.7 | 33.3 | | 0.0 | 0.0 | 0.0 | 41.2 | 58.8 | | 0.0 | 0.0 | 0.0 | 50.0 | 50.0 | | |
| Total % | 0.0 | 0.0 | 0.0 | 6.9 | 3.4 | 10.3 | 0.0 | 0.0 | 0.0 | 24.1 | 34.5 | 58.6 | 0.0 | 0.0 | 0.0 | 15.5 | 15.5 | 31.0 | |
| Exiting Leg Total | | | | | | 6 | | | | | | 34 | | | | | | 18 | 58 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:00 PM | East 1st Street (East) | | | | | | M Street (South) | | | | | | East 1st Street (West) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | U-Turn | CW-NB | CW-SB | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 2 | 1 | 3 | 7 |
| 4:15 PM | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 3 | 7 | 10 | 0 | 0 | 0 | 0 | 1 | 1 | 13 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 6 | 0 | 0 | 0 | 2 | 1 | 3 | 9 |
| Total Volume | 0 | 0 | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 10 | 10 | 20 | 0 | 0 | 0 | 4 | 3 | 7 | 30 |
| % Approach Total | 0.0 | 0.0 | 0.0 | 66.7 | 33.3 | | 0.0 | 0.0 | 0.0 | 50.0 | 50.0 | | 0.0 | 0.0 | 0.0 | 57.1 | 42.9 | | |
| PHF | 0.000 | 0.000 | 0.000 | 0.250 | 0.250 | 0.375 | 0.000 | 0.000 | 0.000 | 0.833 | 0.357 | 0.500 | 0.000 | 0.000 | 0.000 | 0.500 | 0.750 | 0.583 | 0.577 |
| Entering Leg | 0 | 0 | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 10 | 10 | 20 | 0 | 0 | 0 | 4 | 3 | 7 | 30 |
| Exiting Leg | | | | | | 3 | | | | | | 20 | | | | | | 7 | 30 |
| Total | | | | | | 6 | | | | | | 40 | | | | | | 14 | 60 |

PDI File #: **175708 K**
Location: **N: K Street S: K Street**
Location: **E: East 1st Street W: East 1st Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Cars, Heavy Vehicles, and Buses (Combined)

| | K Street | | | | | East 1st Street | | | | | K Street | | | | | East 1st Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 8 | 0 | 2 | 0 | 10 | 0 | 33 | 0 | 0 | 33 | 8 | 3 | 9 | 0 | 20 | 0 | 37 | 3 | 0 | 40 | 103 |
| 7:15 AM | 6 | 0 | 4 | 0 | 10 | 3 | 46 | 0 | 0 | 49 | 13 | 6 | 8 | 0 | 27 | 0 | 28 | 6 | 0 | 34 | 120 |
| 7:30 AM | 16 | 1 | 3 | 1 | 21 | 4 | 61 | 0 | 0 | 65 | 11 | 3 | 19 | 0 | 33 | 0 | 25 | 9 | 0 | 34 | 153 |
| 7:45 AM | 10 | 0 | 3 | 0 | 13 | 2 | 56 | 0 | 0 | 58 | 8 | 3 | 19 | 0 | 30 | 0 | 31 | 6 | 3 | 40 | 141 |
| Total | 40 | 1 | 12 | 1 | 54 | 9 | 196 | 0 | 0 | 205 | 40 | 15 | 55 | 0 | 110 | 0 | 121 | 24 | 3 | 148 | 517 |
| 8:00 AM | 12 | 0 | 2 | 0 | 14 | 2 | 75 | 0 | 0 | 77 | 6 | 1 | 46 | 0 | 53 | 0 | 39 | 6 | 1 | 46 | 190 |
| 8:15 AM | 9 | 0 | 1 | 0 | 10 | 0 | 58 | 0 | 0 | 58 | 8 | 3 | 30 | 0 | 41 | 0 | 24 | 6 | 1 | 31 | 140 |
| 8:30 AM | 4 | 1 | 1 | 0 | 6 | 2 | 36 | 0 | 0 | 38 | 4 | 3 | 16 | 0 | 23 | 0 | 18 | 4 | 0 | 22 | 89 |
| 8:45 AM | 28 | 0 | 2 | 0 | 30 | 0 | 35 | 0 | 0 | 35 | 5 | 2 | 26 | 0 | 33 | 0 | 22 | 7 | 0 | 29 | 127 |
| Total | 53 | 1 | 6 | 0 | 60 | 4 | 204 | 0 | 0 | 208 | 23 | 9 | 118 | 0 | 150 | 0 | 103 | 23 | 2 | 128 | 546 |
| Grand Total | 93 | 2 | 18 | 1 | 114 | 13 | 400 | 0 | 0 | 413 | 63 | 24 | 173 | 0 | 260 | 0 | 224 | 47 | 5 | 276 | 1063 |
| Approach % | 81.6 | 1.8 | 15.8 | 0.9 | | 3.1 | 96.9 | 0.0 | 0.0 | | 24.2 | 9.2 | 66.5 | 0.0 | | 0.0 | 81.2 | 17.0 | 1.8 | | |
| Total % | 8.7 | 0.2 | 1.7 | 0.1 | 10.7 | 1.2 | 37.6 | 0.0 | 0.0 | 38.9 | 5.9 | 2.3 | 16.3 | 0.0 | 24.5 | 0.0 | 21.1 | 4.4 | 0.5 | 26.0 | |
| Exiting Leg Total | | | | | 85 | | | | | 305 | | | | | 2 | | | | | 671 | 1063 |
| Cars | 78 | 1 | 16 | 1 | 96 | 12 | 380 | 0 | 0 | 392 | 62 | 23 | 169 | 0 | 254 | 0 | 182 | 42 | 4 | 228 | 970 |
| % Cars | 83.9 | 50.0 | 88.9 | 100.0 | 84.2 | 92.3 | 95.0 | 0.0 | 0.0 | 94.9 | 98.4 | 95.8 | 97.7 | 0.0 | 97.7 | 0.0 | 81.3 | 89.4 | 80.0 | 82.6 | 91.3 |
| Exiting Leg Total | | | | | 78 | | | | | 260 | | | | | 1 | | | | | 631 | 970 |
| Heavy Vehicles | 14 | 0 | 2 | 0 | 16 | 1 | 16 | 0 | 0 | 17 | 1 | 1 | 2 | 0 | 4 | 0 | 27 | 5 | 1 | 33 | 70 |
| % Heavy Vehicles | 15.1 | 0.0 | 11.1 | 0.0 | 14.0 | 7.7 | 4.0 | 0.0 | 0.0 | 4.1 | 1.6 | 4.2 | 1.2 | 0.0 | 1.5 | 0.0 | 12.1 | 10.6 | 20.0 | 12.0 | 6.6 |
| Exiting Leg Total | | | | | 7 | | | | | 30 | | | | | 0 | | | | | 33 | 70 |
| Buses | 1 | 1 | 0 | 0 | 2 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 2 | 0 | 2 | 0 | 15 | 0 | 0 | 15 | 23 |
| % Buses | 1.1 | 50.0 | 0.0 | 0.0 | 1.8 | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 1.2 | 0.0 | 0.8 | 0.0 | 6.7 | 0.0 | 0.0 | 5.4 | 2.2 |
| Exiting Leg Total | | | | | 0 | | | | | 15 | | | | | 1 | | | | | 7 | 23 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:30 AM | K Street | | | | | East 1st Street | | | | | K Street | | | | | East 1st Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:30 AM | 16 | 1 | 3 | 1 | 21 | 4 | 61 | 0 | 0 | 65 | 11 | 3 | 19 | 0 | 33 | 0 | 25 | 9 | 0 | 34 | 153 |
| 7:45 AM | 10 | 0 | 3 | 0 | 13 | 2 | 56 | 0 | 0 | 58 | 8 | 3 | 19 | 0 | 30 | 0 | 31 | 6 | 3 | 40 | 141 |
| 8:00 AM | 12 | 0 | 2 | 0 | 14 | 2 | 75 | 0 | 0 | 77 | 6 | 1 | 46 | 0 | 53 | 0 | 39 | 6 | 1 | 46 | 190 |
| 8:15 AM | 9 | 0 | 1 | 0 | 10 | 0 | 58 | 0 | 0 | 58 | 8 | 3 | 30 | 0 | 41 | 0 | 24 | 6 | 1 | 31 | 140 |
| Total Volume | 47 | 1 | 9 | 1 | 58 | 8 | 250 | 0 | 0 | 258 | 33 | 10 | 114 | 0 | 157 | 0 | 119 | 27 | 5 | 151 | 624 |
| % Approach Total | 81.0 | 1.7 | 15.5 | 1.7 | | 3.1 | 96.9 | 0.0 | 0.0 | | 21.0 | 6.4 | 72.6 | 0.0 | | 0.0 | 78.8 | 17.9 | 3.3 | | |
| PHF | 0.734 | 0.250 | 0.750 | 0.250 | 0.690 | 0.500 | 0.833 | 0.000 | 0.000 | 0.838 | 0.750 | 0.833 | 0.620 | 0.000 | 0.741 | 0.000 | 0.763 | 0.750 | 0.417 | 0.821 | 0.821 |
| Cars | 45 | 0 | 8 | 1 | 54 | 8 | 239 | 0 | 0 | 247 | 32 | 9 | 110 | 0 | 151 | 0 | 100 | 25 | 4 | 129 | 581 |
| Cars % | 95.7 | 0.0 | 88.9 | 100.0 | 93.1 | 100.0 | 95.6 | 0.0 | 0.0 | 95.7 | 97.0 | 90.0 | 96.5 | 0.0 | 96.2 | 0.0 | 84.0 | 92.6 | 80.0 | 85.4 | 93.1 |
| Heavy Vehicles | 1 | 0 | 1 | 0 | 2 | 0 | 8 | 0 | 0 | 8 | 1 | 1 | 2 | 0 | 4 | 0 | 11 | 2 | 1 | 14 | 28 |
| Heavy Vehicles % | 2.1 | 0.0 | 11.1 | 0.0 | 3.4 | 0.0 | 3.2 | 0.0 | 0.0 | 3.1 | 3.0 | 10.0 | 1.8 | 0.0 | 2.5 | 0.0 | 9.2 | 7.4 | 20.0 | 9.3 | 4.5 |
| Buses | 1 | 1 | 0 | 0 | 2 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 2 | 0 | 2 | 0 | 8 | 0 | 0 | 8 | 15 |
| Buses % | 2.1 | 100.0 | 0.0 | 0.0 | 3.4 | 0.0 | 1.2 | 0.0 | 0.0 | 1.2 | 0.0 | 0.0 | 1.8 | 0.0 | 1.3 | 0.0 | 6.7 | 0.0 | 0.0 | 5.3 | 2.4 |
| Cars Enter Leg | 45 | 0 | 8 | 1 | 54 | 8 | 239 | 0 | 0 | 247 | 32 | 9 | 110 | 0 | 151 | 0 | 100 | 25 | 4 | 129 | 581 |
| Heavy Enter Leg | 1 | 0 | 1 | 0 | 2 | 0 | 8 | 0 | 0 | 8 | 1 | 1 | 2 | 0 | 4 | 0 | 11 | 2 | 1 | 14 | 28 |
| Bus Enter Leg | 1 | 1 | 0 | 0 | 2 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 2 | 0 | 2 | 0 | 8 | 0 | 0 | 8 | 15 |
| Total Entering Leg | 47 | 1 | 9 | 1 | 58 | 8 | 250 | 0 | 0 | 258 | 33 | 10 | 114 | 0 | 157 | 0 | 119 | 27 | 5 | 151 | 624 |
| Cars Exiting Leg | | | | | 43 | | | | | 140 | | | | | 0 | | | | | 398 | 581 |
| Heavy Exiting Leg | | | | | 3 | | | | | 13 | | | | | 0 | | | | | 12 | 28 |
| Buses Exiting Leg | | | | | 0 | | | | | 8 | | | | | 1 | | | | | 6 | 15 |
| Total Exiting Leg | | | | | 46 | | | | | 161 | | | | | 1 | | | | | 416 | 624 |

PDI File #: **175708 K**
Location: **N: K Street S: K Street**
Location: **E: East 1st Street W: East 1st Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Cars

| | K Street | | | | | East 1st Street | | | | | K Street | | | | | East 1st Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 8 | 0 | 2 | 0 | 10 | 0 | 32 | 0 | 0 | 32 | 8 | 3 | 9 | 0 | 20 | 0 | 27 | 3 | 0 | 30 | 92 |
| 7:15 AM | 6 | 0 | 4 | 0 | 10 | 3 | 43 | 0 | 0 | 46 | 13 | 6 | 8 | 0 | 27 | 0 | 20 | 4 | 0 | 24 | 107 |
| 7:30 AM | 15 | 0 | 3 | 1 | 19 | 4 | 55 | 0 | 0 | 59 | 10 | 3 | 18 | 0 | 31 | 0 | 20 | 8 | 0 | 28 | 137 |
| 7:45 AM | 10 | 0 | 2 | 0 | 12 | 2 | 54 | 0 | 0 | 56 | 8 | 3 | 19 | 0 | 30 | 0 | 26 | 6 | 3 | 35 | 133 |
| Total | 39 | 0 | 11 | 1 | 51 | 9 | 184 | 0 | 0 | 193 | 39 | 15 | 54 | 0 | 108 | 0 | 93 | 21 | 3 | 117 | 469 |
| 8:00 AM | 12 | 0 | 2 | 0 | 14 | 2 | 74 | 0 | 0 | 76 | 6 | 1 | 43 | 0 | 50 | 0 | 36 | 6 | 0 | 42 | 182 |
| 8:15 AM | 8 | 0 | 1 | 0 | 9 | 0 | 56 | 0 | 0 | 56 | 8 | 2 | 30 | 0 | 40 | 0 | 18 | 5 | 1 | 24 | 129 |
| 8:30 AM | 3 | 1 | 1 | 0 | 5 | 1 | 34 | 0 | 0 | 35 | 4 | 3 | 16 | 0 | 23 | 0 | 16 | 4 | 0 | 20 | 83 |
| 8:45 AM | 16 | 0 | 1 | 0 | 17 | 0 | 32 | 0 | 0 | 32 | 5 | 2 | 26 | 0 | 33 | 0 | 19 | 6 | 0 | 25 | 107 |
| Total | 39 | 1 | 5 | 0 | 45 | 3 | 196 | 0 | 0 | 199 | 23 | 8 | 115 | 0 | 146 | 0 | 89 | 21 | 1 | 111 | 501 |
| Grand Total | 78 | 1 | 16 | 1 | 96 | 12 | 380 | 0 | 0 | 392 | 62 | 23 | 169 | 0 | 254 | 0 | 182 | 42 | 4 | 228 | 970 |
| Approach % | 81.3 | 1.0 | 16.7 | 1.0 | | 3.1 | 96.9 | 0.0 | 0.0 | | 24.4 | 9.1 | 66.5 | 0.0 | | 0.0 | 79.8 | 18.4 | 1.8 | | |
| Total % | 8.0 | 0.1 | 1.6 | 0.1 | 9.9 | 1.2 | 39.2 | 0.0 | 0.0 | 40.4 | 6.4 | 2.4 | 17.4 | 0.0 | 26.2 | 0.0 | 18.8 | 4.3 | 0.4 | 23.5 | |
| Exiting Leg Total | | | | | 78 | | | | | 260 | | | | | 1 | | | | | 631 | 970 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:30 AM | K Street | | | | | East 1st Street | | | | | K Street | | | | | East 1st Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:30 AM | 15 | 0 | 3 | 1 | 19 | 4 | 55 | 0 | 0 | 59 | 10 | 3 | 18 | 0 | 31 | 0 | 20 | 8 | 0 | 28 | 137 |
| 7:45 AM | 10 | 0 | 2 | 0 | 12 | 2 | 54 | 0 | 0 | 56 | 8 | 3 | 19 | 0 | 30 | 0 | 26 | 6 | 3 | 35 | 133 |
| 8:00 AM | 12 | 0 | 2 | 0 | 14 | 2 | 74 | 0 | 0 | 76 | 6 | 1 | 43 | 0 | 50 | 0 | 36 | 6 | 0 | 42 | 182 |
| 8:15 AM | 8 | 0 | 1 | 0 | 9 | 0 | 56 | 0 | 0 | 56 | 8 | 2 | 30 | 0 | 40 | 0 | 18 | 5 | 1 | 24 | 129 |
| Total Volume | 45 | 0 | 8 | 1 | 54 | 8 | 239 | 0 | 0 | 247 | 32 | 9 | 110 | 0 | 151 | 0 | 100 | 25 | 4 | 129 | 581 |
| % Approach Total | 83.3 | 0.0 | 14.8 | 1.9 | | 3.2 | 96.8 | 0.0 | 0.0 | | 21.2 | 6.0 | 72.8 | 0.0 | | 0.0 | 77.5 | 19.4 | 3.1 | | |
| PHF | 0.750 | 0.000 | 0.667 | 0.250 | 0.711 | 0.500 | 0.807 | 0.000 | 0.000 | 0.813 | 0.800 | 0.750 | 0.640 | 0.000 | 0.755 | 0.000 | 0.694 | 0.781 | 0.333 | 0.768 | 0.798 |
| Entering Leg | 45 | 0 | 8 | 1 | 54 | 8 | 239 | 0 | 0 | 247 | 32 | 9 | 110 | 0 | 151 | 0 | 100 | 25 | 4 | 129 | 581 |
| Exiting Leg | | | | | 43 | | | | | 140 | | | | | 0 | | | | | 398 | 581 |
| Total | | | | | 97 | | | | | 387 | | | | | 151 | | | | | 527 | 1162 |

PDI File #: **175708 K**
Location: **N: K Street S: K Street**
Location: **E: East 1st Street W: East 1st Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Heavy Vehicles

| | K Street | | | | | East 1st Street | | | | | K Street | | | | | East 1st Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 6 | 7 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 2 | 0 | 7 | 10 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 1 | 0 | 0 | 0 | 1 | 0 | 3 | 1 | 0 | 4 | 9 |
| 7:45 AM | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 4 |
| Total | 0 | 0 | 1 | 0 | 1 | 0 | 9 | 0 | 0 | 9 | 1 | 0 | 0 | 0 | 1 | 0 | 16 | 3 | 0 | 19 | 30 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 2 | 0 | 1 | 0 | 1 | 2 | 5 |
| 8:15 AM | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 0 | 5 | 1 | 0 | 6 | 10 |
| 8:30 AM | 1 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 6 |
| 8:45 AM | 12 | 0 | 1 | 0 | 13 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 4 | 19 |
| Total | 14 | 0 | 1 | 0 | 15 | 1 | 7 | 0 | 0 | 8 | 0 | 1 | 2 | 0 | 3 | 0 | 11 | 2 | 1 | 14 | 40 |
| Grand Total | 14 | 0 | 2 | 0 | 16 | 1 | 16 | 0 | 0 | 17 | 1 | 1 | 2 | 0 | 4 | 0 | 27 | 5 | 1 | 33 | 70 |
| Approach % | 87.5 | 0.0 | 12.5 | 0.0 | | 5.9 | 94.1 | 0.0 | 0.0 | | 25.0 | 25.0 | 50.0 | 0.0 | | 0.0 | 81.8 | 15.2 | 3.0 | | |
| Total % | 20.0 | 0.0 | 2.9 | 0.0 | 22.9 | 1.4 | 22.9 | 0.0 | 0.0 | 24.3 | 1.4 | 1.4 | 2.9 | 0.0 | 5.7 | 0.0 | 38.6 | 7.1 | 1.4 | 47.1 | |
| Exiting Leg Total | | | | | 7 | | | | | 30 | | | | | 0 | | | | | 33 | 70 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 8:00 AM | K Street | | | | | East 1st Street | | | | | K Street | | | | | East 1st Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 2 | 0 | 1 | 0 | 1 | 2 | 5 |
| 8:15 AM | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 0 | 5 | 1 | 0 | 6 | 10 |
| 8:30 AM | 1 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 6 |
| 8:45 AM | 12 | 0 | 1 | 0 | 13 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 4 | 19 |
| Total Volume | 14 | 0 | 1 | 0 | 15 | 1 | 7 | 0 | 0 | 8 | 0 | 1 | 2 | 0 | 3 | 0 | 11 | 2 | 1 | 14 | 40 |
| % Approach Total | 93.3 | 0.0 | 6.7 | 0.0 | | 12.5 | 87.5 | 0.0 | 0.0 | | 0.0 | 33.3 | 66.7 | 0.0 | | 0.0 | 78.6 | 14.3 | 7.1 | | |
| PHF | 0.292 | 0.000 | 0.250 | 0.000 | 0.288 | 0.250 | 0.875 | 0.000 | 0.000 | 0.667 | 0.000 | 0.250 | 0.250 | 0.000 | 0.375 | 0.000 | 0.550 | 0.500 | 0.250 | 0.583 | 0.526 |
| Entering Leg | 14 | 0 | 1 | 0 | 15 | 1 | 7 | 0 | 0 | 8 | 0 | 1 | 2 | 0 | 3 | 0 | 11 | 2 | 1 | 14 | 40 |
| Exiting Leg | | | | | 4 | | | | | 12 | | | | | 0 | | | | | 24 | 40 |
| Total | | | | | 19 | | | | | 20 | | | | | 3 | | | | | 38 | 80 |

PDI File #: **175708 K**
Location: **N: K Street S: K Street**
Location: **E: East 1st Street W: East 1st Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Buses

| | K Street | | | | | East 1st Street | | | | | K Street | | | | | East 1st Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 4 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 3 |
| 7:30 AM | 1 | 1 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 2 | 7 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 4 |
| Total | 1 | 1 | 0 | 0 | 2 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 1 | 0 | 12 | 0 | 0 | 12 | 18 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 2 | 3 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 3 | 0 | 0 | 3 | 5 |
| Grand Total | 1 | 1 | 0 | 0 | 2 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 2 | 0 | 2 | 0 | 15 | 0 | 0 | 15 | 23 |
| Approach % | 50.0 | 50.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 100.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | |
| Total % | 4.3 | 4.3 | 0.0 | 0.0 | 8.7 | 0.0 | 17.4 | 0.0 | 0.0 | 17.4 | 0.0 | 0.0 | 8.7 | 0.0 | 8.7 | 0.0 | 65.2 | 0.0 | 0.0 | 65.2 | |
| Exiting Leg Total | | | | | 0 | | | | | 15 | | | | | 1 | | | | | 7 | 23 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:00 AM | K Street | | | | | East 1st Street | | | | | K Street | | | | | East 1st Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 4 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 3 |
| 7:30 AM | 1 | 1 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 2 | 7 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 4 |
| Total Volume | 1 | 1 | 0 | 0 | 2 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 1 | 0 | 12 | 0 | 0 | 12 | 18 |
| % Approach Total | 50.0 | 50.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 100.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | |
| PHF | 0.250 | 0.250 | 0.000 | 0.000 | 0.250 | 0.000 | 0.375 | 0.000 | 0.000 | 0.375 | 0.000 | 0.000 | 0.250 | 0.000 | 0.250 | 0.000 | 0.750 | 0.000 | 0.000 | 0.750 | 0.643 |
| Entering Leg | 1 | 1 | 0 | 0 | 2 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 1 | 0 | 12 | 0 | 0 | 12 | 18 |
| Exiting Leg | | | | | 0 | | | | | 12 | | | | | 1 | | | | | 5 | 18 |
| Total | | | | | 2 | | | | | 15 | | | | | 2 | | | | | 17 | 36 |

PDI File #: **175708 K**
Location: **N: K Street S: K Street**
Location: **E: East 1st Street W: East 1st Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Bicycles (on Roadway and Crosswalks)

| | K Street | | | | | | | East 1st Street | | | | | | | K Street | | | | | | | East 1st Street | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | East | | | | | | | South | | | | | | | West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 1 | 2 | 4 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 3 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 1 | 4 | 0 | 3 | 0 | 0 | 0 | 1 | 4 | 8 |
| 8:00 AM | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 5 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 4 |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 3 | 1 | 0 | 0 | 0 | 0 | 4 | 0 | 1 | 1 | 0 | 0 | 0 | 2 | 11 |
| Grand Total | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 4 | 3 | 0 | 0 | 0 | 1 | 8 | 0 | 4 | 1 | 0 | 0 | 1 | 6 | 19 |
| Approach % | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 50.0 | 37.5 | 0.0 | 0.0 | 0.0 | 12.5 | | 0.0 | 66.7 | 16.7 | 0.0 | 0.0 | 16.7 | | |
| Total % | 10.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 10.5 | 0.0 | 15.8 | 0.0 | 0.0 | 0.0 | 0.0 | 15.8 | 21.1 | 15.8 | 0.0 | 0.0 | 0.0 | 5.3 | 42.1 | 0.0 | 21.1 | 5.3 | 0.0 | 0.0 | 5.3 | 31.6 | |
| Exiting Leg Total | | | | | | | 4 | | | | | | | 8 | | | | | | | 1 | | | | | | | 6 | 19 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:30 AM | K Street | | | | | | | East 1st Street | | | | | | | K Street | | | | | | | East 1st Street | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | East | | | | | | | South | | | | | | | West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 1 | 2 | 4 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 3 |
| 8:00 AM | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 5 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total Volume | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 2 | 1 | 0 | 0 | 0 | 1 | 4 | 0 | 3 | 1 | 0 | 0 | 1 | 5 | 13 |
| % Approach Total | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 50.0 | 25.0 | 0.0 | 0.0 | 0.0 | 25.0 | | 0.0 | 60.0 | 20.0 | 0.0 | 0.0 | 20.0 | | |
| PHF | 0.250 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.250 | 0.000 | 0.500 | 0.000 | 0.000 | 0.000 | 0.000 | 0.500 | 0.500 | 0.250 | 0.000 | 0.000 | 0.000 | 0.250 | 0.500 | 0.000 | 0.375 | 0.250 | 0.000 | 0.000 | 0.250 | 0.625 | 0.650 |
| Entering Leg | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 2 | 1 | 0 | 0 | 0 | 1 | 4 | 0 | 3 | 1 | 0 | 0 | 1 | 5 | 13 |
| Exiting Leg | | | | | | | 2 | | | | | | | 5 | | | | | | | 1 | | | | | | | 5 | 13 |
| Total | | | | | | | 4 | | | | | | | 7 | | | | | | | 5 | | | | | | | 10 | 26 |

PDI File #: **175708 K**
Location: **N: K Street S: K Street**
Location: **E: East 1st Street W: East 1st Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Pedestrians

| | K Street North | | | | | | | East 1st Street East | | | | | | | K Street South | | | | | | | East 1st Street West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:00 AM | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 0 | 0 | 0 | 0 | 2 | 6 | 8 | 0 | 0 | 0 | 0 | 4 | 2 | 6 | 20 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 1 | 5 | 6 | 0 | 0 | 0 | 0 | 1 | 4 | 5 | 0 | 0 | 0 | 0 | 4 | 1 | 5 | 18 |
| 7:30 AM | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 3 | 4 | 7 | 0 | 0 | 0 | 0 | 1 | 3 | 4 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 16 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 6 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 4 | 1 | 5 | 14 |
| Total | 0 | 0 | 0 | 0 | 3 | 3 | 6 | 0 | 0 | 0 | 0 | 6 | 17 | 23 | 0 | 0 | 0 | 0 | 5 | 15 | 20 | 0 | 0 | 0 | 0 | 14 | 5 | 19 | 68 |
| 8:00 AM | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 1 | 10 | 11 | 0 | 0 | 0 | 0 | 1 | 4 | 5 | 0 | 0 | 0 | 0 | 5 | 0 | 5 | 24 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 0 | 0 | 0 | 0 | 1 | 3 | 4 | 0 | 0 | 0 | 0 | 3 | 4 | 7 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 17 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 9 |
| 8:45 AM | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 7 | 8 | 0 | 0 | 0 | 0 | 1 | 4 | 5 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 17 |
| Total | 0 | 0 | 0 | 0 | 2 | 6 | 8 | 0 | 0 | 0 | 0 | 3 | 25 | 28 | 0 | 0 | 0 | 0 | 5 | 13 | 18 | 0 | 0 | 0 | 0 | 12 | 1 | 13 | 67 |
| Grand Total | 0 | 0 | 0 | 0 | 5 | 9 | 14 | 0 | 0 | 0 | 0 | 9 | 42 | 51 | 0 | 0 | 0 | 0 | 10 | 28 | 38 | 0 | 0 | 0 | 0 | 26 | 6 | 32 | 135 |
| Approach % | 0.0 | 0.0 | 0.0 | 0.0 | 35.7 | 64.3 | | 0.0 | 0.0 | 0.0 | 0.0 | 17.6 | 82.4 | | 0.0 | 0.0 | 0.0 | 0.0 | 26.3 | 73.7 | | 0.0 | 0.0 | 0.0 | 0.0 | 81.3 | 18.8 | | |
| Total % | 0.0 | 0.0 | 0.0 | 0.0 | 3.7 | 6.7 | 10.4 | 0.0 | 0.0 | 0.0 | 0.0 | 6.7 | 31.1 | 37.8 | 0.0 | 0.0 | 0.0 | 0.0 | 7.4 | 20.7 | 28.1 | 0.0 | 0.0 | 0.0 | 0.0 | 19.3 | 4.4 | 23.7 | |
| Exiting Leg Total | | | | | | | 14 | | | | | | | 51 | | | | | | | 38 | | | | | | | 32 | 135 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:15 AM | K Street North | | | | | | | East 1st Street East | | | | | | | K Street South | | | | | | | East 1st Street West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 1 | 5 | 6 | 0 | 0 | 0 | 0 | 1 | 4 | 5 | 0 | 0 | 0 | 0 | 4 | 1 | 5 | 18 |
| 7:30 AM | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 3 | 4 | 7 | 0 | 0 | 0 | 0 | 1 | 3 | 4 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 16 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 6 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 4 | 1 | 5 | 14 |
| 8:00 AM | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 1 | 10 | 11 | 0 | 0 | 0 | 0 | 1 | 4 | 5 | 0 | 0 | 0 | 0 | 5 | 0 | 5 | 24 |
| Total Volume | 0 | 0 | 0 | 0 | 3 | 4 | 7 | 0 | 0 | 0 | 0 | 7 | 23 | 30 | 0 | 0 | 0 | 0 | 4 | 13 | 17 | 0 | 0 | 0 | 0 | 15 | 3 | 18 | 72 |
| % Approach Total | 0.0 | 0.0 | 0.0 | 0.0 | 42.9 | 57.1 | | 0.0 | 0.0 | 0.0 | 0.0 | 23.3 | 76.7 | | 0.0 | 0.0 | 0.0 | 0.0 | 23.5 | 76.5 | | 0.0 | 0.0 | 0.0 | 0.0 | 83.3 | 16.7 | | |
| PHF | 0.000 | 0.000 | 0.000 | 0.000 | 0.375 | 0.500 | 0.583 | 0.000 | 0.000 | 0.000 | 0.000 | 0.583 | 0.575 | 0.682 | 0.000 | 0.000 | 0.000 | 0.000 | 1.000 | 0.813 | 0.850 | 0.000 | 0.000 | 0.000 | 0.000 | 0.750 | 0.750 | 0.900 | 0.750 |
| Entering Leg | 0 | 0 | 0 | 0 | 3 | 4 | 7 | 0 | 0 | 0 | 0 | 7 | 23 | 30 | 0 | 0 | 0 | 0 | 4 | 13 | 17 | 0 | 0 | 0 | 0 | 15 | 3 | 18 | 72 |
| Exiting Leg | | | | | | | 7 | | | | | | | 30 | | | | | | | 17 | | | | | | | 18 | 72 |
| Total | | | | | | | 14 | | | | | | | 60 | | | | | | | 34 | | | | | | | 36 | 144 |

PDI File #: **175708 KK**
Location: **N: K Street S: K Street**
Location: **E: East 1st Street W: East 1st Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Cars, Heavy Vehicles, and Buses (Combined)

| | K Street | | | | | East 1st Street | | | | | K Street | | | | | East 1st Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 7 | 0 | 4 | 0 | 11 | 1 | 37 | 0 | 0 | 38 | 4 | 2 | 7 | 0 | 13 | 0 | 37 | 2 | 0 | 39 | 101 |
| 4:15 PM | 16 | 0 | 3 | 0 | 19 | 0 | 49 | 0 | 0 | 49 | 5 | 1 | 3 | 0 | 9 | 0 | 29 | 2 | 0 | 31 | 108 |
| 4:30 PM | 8 | 0 | 2 | 0 | 10 | 0 | 53 | 0 | 0 | 53 | 2 | 1 | 5 | 0 | 8 | 0 | 51 | 2 | 0 | 53 | 124 |
| 4:45 PM | 14 | 0 | 6 | 0 | 20 | 2 | 37 | 0 | 0 | 39 | 3 | 4 | 7 | 0 | 14 | 0 | 28 | 6 | 0 | 34 | 107 |
| Total | 45 | 0 | 15 | 0 | 60 | 3 | 176 | 0 | 0 | 179 | 14 | 8 | 22 | 0 | 44 | 0 | 145 | 12 | 0 | 157 | 440 |
| 5:00 PM | 9 | 0 | 4 | 0 | 13 | 0 | 37 | 0 | 0 | 37 | 6 | 1 | 15 | 0 | 22 | 0 | 49 | 6 | 0 | 55 | 127 |
| 5:15 PM | 14 | 0 | 0 | 0 | 14 | 0 | 54 | 0 | 0 | 54 | 1 | 2 | 14 | 0 | 17 | 0 | 47 | 4 | 2 | 53 | 138 |
| 5:30 PM | 7 | 0 | 0 | 0 | 7 | 1 | 50 | 0 | 0 | 51 | 3 | 1 | 10 | 0 | 14 | 0 | 36 | 3 | 0 | 39 | 111 |
| 5:45 PM | 19 | 0 | 0 | 0 | 19 | 3 | 45 | 0 | 0 | 48 | 7 | 4 | 7 | 0 | 18 | 0 | 55 | 6 | 0 | 61 | 146 |
| Total | 49 | 0 | 4 | 0 | 53 | 4 | 186 | 0 | 0 | 190 | 17 | 8 | 46 | 0 | 71 | 0 | 187 | 19 | 2 | 208 | 522 |
| Grand Total | 94 | 0 | 19 | 0 | 113 | 7 | 362 | 0 | 0 | 369 | 31 | 16 | 68 | 0 | 115 | 0 | 332 | 31 | 2 | 365 | 962 |
| Approach % | 83.2 | 0.0 | 16.8 | 0.0 | | 1.9 | 98.1 | 0.0 | 0.0 | | 27.0 | 13.9 | 59.1 | 0.0 | | 0.0 | 91.0 | 8.5 | 0.5 | | |
| Total % | 9.8 | 0.0 | 2.0 | 0.0 | 11.7 | 0.7 | 37.6 | 0.0 | 0.0 | 38.4 | 3.2 | 1.7 | 7.1 | 0.0 | 12.0 | 0.0 | 34.5 | 3.2 | 0.2 | 37.9 | |
| Exiting Leg Total | | | | | 54 | | | | | 382 | | | | | 0 | | | | | 526 | 962 |
| Cars | 90 | 0 | 18 | 0 | 108 | 6 | 349 | 0 | 0 | 355 | 30 | 14 | 67 | 0 | 111 | 0 | 320 | 21 | 2 | 343 | 917 |
| % Cars | 95.7 | 0.0 | 94.7 | 0.0 | 95.6 | 85.7 | 96.4 | 0.0 | 0.0 | 96.2 | 96.8 | 87.5 | 98.5 | 0.0 | 96.5 | 0.0 | 96.4 | 67.7 | 100.0 | 94.0 | 95.3 |
| Exiting Leg Total | | | | | 41 | | | | | 368 | | | | | 0 | | | | | 508 | 917 |
| Heavy Vehicles | 4 | 0 | 1 | 0 | 5 | 0 | 11 | 0 | 0 | 11 | 1 | 2 | 1 | 0 | 4 | 0 | 9 | 10 | 0 | 19 | 39 |
| % Heavy Vehicles | 4.3 | 0.0 | 5.3 | 0.0 | 4.4 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 3.2 | 12.5 | 1.5 | 0.0 | 3.5 | 0.0 | 2.7 | 32.3 | 0.0 | 5.2 | 4.1 |
| Exiting Leg Total | | | | | 12 | | | | | 11 | | | | | 0 | | | | | 16 | 39 |
| Buses | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 6 |
| % Buses | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 14.3 | 0.6 | 0.0 | 0.0 | 0.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.9 | 0.0 | 0.0 | 0.8 | 0.6 |
| Exiting Leg Total | | | | | 1 | | | | | 3 | | | | | 0 | | | | | 2 | 6 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 5:00 PM | K Street | | | | | East 1st Street | | | | | K Street | | | | | East 1st Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 5:00 PM | 9 | 0 | 4 | 0 | 13 | 0 | 37 | 0 | 0 | 37 | 6 | 1 | 15 | 0 | 22 | 0 | 49 | 6 | 0 | 55 | 127 |
| 5:15 PM | 14 | 0 | 0 | 0 | 14 | 0 | 54 | 0 | 0 | 54 | 1 | 2 | 14 | 0 | 17 | 0 | 47 | 4 | 2 | 53 | 138 |
| 5:30 PM | 7 | 0 | 0 | 0 | 7 | 1 | 50 | 0 | 0 | 51 | 3 | 1 | 10 | 0 | 14 | 0 | 36 | 3 | 0 | 39 | 111 |
| 5:45 PM | 19 | 0 | 0 | 0 | 19 | 3 | 45 | 0 | 0 | 48 | 7 | 4 | 7 | 0 | 18 | 0 | 55 | 6 | 0 | 61 | 146 |
| Total Volume | 49 | 0 | 4 | 0 | 53 | 4 | 186 | 0 | 0 | 190 | 17 | 8 | 46 | 0 | 71 | 0 | 187 | 19 | 2 | 208 | 522 |
| % Approach Total | 92.5 | 0.0 | 7.5 | 0.0 | | 2.1 | 97.9 | 0.0 | 0.0 | | 23.9 | 11.3 | 64.8 | 0.0 | | 0.0 | 89.9 | 9.1 | 1.0 | | |
| PHF | 0.645 | 0.000 | 0.250 | 0.000 | 0.697 | 0.333 | 0.861 | 0.000 | 0.000 | 0.880 | 0.607 | 0.500 | 0.767 | 0.000 | 0.807 | 0.000 | 0.850 | 0.792 | 0.250 | 0.852 | 0.894 |
| Cars | 48 | 0 | 4 | 0 | 52 | 4 | 181 | 0 | 0 | 185 | 17 | 7 | 45 | 0 | 69 | 0 | 182 | 13 | 2 | 197 | 503 |
| Cars % | 98.0 | 0.0 | 100.0 | 0.0 | 98.1 | 100.0 | 97.3 | 0.0 | 0.0 | 97.4 | 100.0 | 87.5 | 97.8 | 0.0 | 97.2 | 0.0 | 97.3 | 68.4 | 100.0 | 94.7 | 96.4 |
| Heavy Vehicles | 1 | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 3 | 0 | 1 | 1 | 0 | 2 | 0 | 4 | 6 | 0 | 10 | 16 |
| Heavy Vehicles % | 2.0 | 0.0 | 0.0 | 0.0 | 1.9 | 0.0 | 1.6 | 0.0 | 0.0 | 1.6 | 0.0 | 12.5 | 2.2 | 0.0 | 2.8 | 0.0 | 2.1 | 31.6 | 0.0 | 4.8 | 3.1 |
| Buses | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 3 |
| Buses % | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.1 | 0.0 | 0.0 | 1.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 0.5 | 0.6 |
| Cars Enter Leg | 48 | 0 | 4 | 0 | 52 | 4 | 181 | 0 | 0 | 185 | 17 | 7 | 45 | 0 | 69 | 0 | 182 | 13 | 2 | 197 | 503 |
| Heavy Enter Leg | 1 | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 3 | 0 | 1 | 1 | 0 | 2 | 0 | 4 | 6 | 0 | 10 | 16 |
| Bus Enter Leg | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 3 |
| Total Entering Leg | 49 | 0 | 4 | 0 | 53 | 4 | 186 | 0 | 0 | 190 | 17 | 8 | 46 | 0 | 71 | 0 | 187 | 19 | 2 | 208 | 522 |
| Cars Exiting Leg | | | | | 24 | | | | | 203 | | | | | 0 | | | | | 276 | 503 |
| Heavy Exiting Leg | | | | | 7 | | | | | 4 | | | | | 0 | | | | | 5 | 16 |
| Buses Exiting Leg | | | | | 0 | | | | | 1 | | | | | 0 | | | | | 2 | 3 |
| Total Exiting Leg | | | | | 31 | | | | | 208 | | | | | 0 | | | | | 283 | 522 |

PDI File #: **175708 KK**
Location: **N: K Street S: K Street**
Location: **E: East 1st Street W: East 1st Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Cars

| | K Street | | | | | East 1st Street | | | | | K Street | | | | | East 1st Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 7 | 0 | 4 | 0 | 11 | 1 | 32 | 0 | 0 | 33 | 3 | 2 | 7 | 0 | 12 | 0 | 34 | 2 | 0 | 36 | 92 |
| 4:15 PM | 15 | 0 | 2 | 0 | 17 | 0 | 47 | 0 | 0 | 47 | 5 | 1 | 3 | 0 | 9 | 0 | 28 | 2 | 0 | 30 | 103 |
| 4:30 PM | 7 | 0 | 2 | 0 | 9 | 0 | 53 | 0 | 0 | 53 | 2 | 1 | 5 | 0 | 8 | 0 | 48 | 2 | 0 | 50 | 120 |
| 4:45 PM | 13 | 0 | 6 | 0 | 19 | 1 | 36 | 0 | 0 | 37 | 3 | 3 | 7 | 0 | 13 | 0 | 28 | 2 | 0 | 30 | 99 |
| Total | 42 | 0 | 14 | 0 | 56 | 2 | 168 | 0 | 0 | 170 | 13 | 7 | 22 | 0 | 42 | 0 | 138 | 8 | 0 | 146 | 414 |
| 5:00 PM | 9 | 0 | 4 | 0 | 13 | 0 | 37 | 0 | 0 | 37 | 6 | 1 | 14 | 0 | 21 | 0 | 47 | 5 | 0 | 52 | 123 |
| 5:15 PM | 14 | 0 | 0 | 0 | 14 | 0 | 53 | 0 | 0 | 53 | 1 | 2 | 14 | 0 | 17 | 0 | 46 | 3 | 2 | 51 | 135 |
| 5:30 PM | 7 | 0 | 0 | 0 | 7 | 1 | 49 | 0 | 0 | 50 | 3 | 1 | 10 | 0 | 14 | 0 | 36 | 2 | 0 | 38 | 109 |
| 5:45 PM | 18 | 0 | 0 | 0 | 18 | 3 | 42 | 0 | 0 | 45 | 7 | 3 | 7 | 0 | 17 | 0 | 53 | 3 | 0 | 56 | 136 |
| Total | 48 | 0 | 4 | 0 | 52 | 4 | 181 | 0 | 0 | 185 | 17 | 7 | 45 | 0 | 69 | 0 | 182 | 13 | 2 | 197 | 503 |
| Grand Total | 90 | 0 | 18 | 0 | 108 | 6 | 349 | 0 | 0 | 355 | 30 | 14 | 67 | 0 | 111 | 0 | 320 | 21 | 2 | 343 | 917 |
| Approach % | 83.3 | 0.0 | 16.7 | 0.0 | | 1.7 | 98.3 | 0.0 | 0.0 | | 27.0 | 12.6 | 60.4 | 0.0 | | 0.0 | 93.3 | 6.1 | 0.6 | | |
| Total % | 9.8 | 0.0 | 2.0 | 0.0 | 11.8 | 0.7 | 38.1 | 0.0 | 0.0 | 38.7 | 3.3 | 1.5 | 7.3 | 0.0 | 12.1 | 0.0 | 34.9 | 2.3 | 0.2 | 37.4 | |
| Exiting Leg Total | | | | | 41 | | | | | 368 | | | | | 0 | | | | | 508 | 917 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 5:00 PM | K Street | | | | | East 1st Street | | | | | K Street | | | | | East 1st Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 5:00 PM | 9 | 0 | 4 | 0 | 13 | 0 | 37 | 0 | 0 | 37 | 6 | 1 | 14 | 0 | 21 | 0 | 47 | 5 | 0 | 52 | 123 |
| 5:15 PM | 14 | 0 | 0 | 0 | 14 | 0 | 53 | 0 | 0 | 53 | 1 | 2 | 14 | 0 | 17 | 0 | 46 | 3 | 2 | 51 | 135 |
| 5:30 PM | 7 | 0 | 0 | 0 | 7 | 1 | 49 | 0 | 0 | 50 | 3 | 1 | 10 | 0 | 14 | 0 | 36 | 2 | 0 | 38 | 109 |
| 5:45 PM | 18 | 0 | 0 | 0 | 18 | 3 | 42 | 0 | 0 | 45 | 7 | 3 | 7 | 0 | 17 | 0 | 53 | 3 | 0 | 56 | 136 |
| Total Volume | 48 | 0 | 4 | 0 | 52 | 4 | 181 | 0 | 0 | 185 | 17 | 7 | 45 | 0 | 69 | 0 | 182 | 13 | 2 | 197 | 503 |
| % Approach Total | 92.3 | 0.0 | 7.7 | 0.0 | | 2.2 | 97.8 | 0.0 | 0.0 | | 24.6 | 10.1 | 65.2 | 0.0 | | 0.0 | 92.4 | 6.6 | 1.0 | | |
| PHF | 0.667 | 0.000 | 0.250 | 0.000 | 0.722 | 0.333 | 0.854 | 0.000 | 0.000 | 0.873 | 0.607 | 0.583 | 0.804 | 0.000 | 0.821 | 0.000 | 0.858 | 0.650 | 0.250 | 0.879 | 0.925 |
| Entering Leg | 48 | 0 | 4 | 0 | 52 | 4 | 181 | 0 | 0 | 185 | 17 | 7 | 45 | 0 | 69 | 0 | 182 | 13 | 2 | 197 | 503 |
| Exiting Leg | | | | | 24 | | | | | 203 | | | | | 0 | | | | | 276 | 503 |
| Total | | | | | 76 | | | | | 388 | | | | | 69 | | | | | 473 | 1006 |

PDI File #: **175708 KK**
Location: **N: K Street S: K Street**
Location: **E: East 1st Street W: East 1st Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Heavy Vehicles

| | K Street | | | | | East 1st Street | | | | | K Street | | | | | East 1st Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 5 | 1 | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 3 | 9 |
| 4:15 PM | 1 | 0 | 1 | 0 | 2 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 4:30 PM | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 3 |
| 4:45 PM | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 4 | 0 | 4 | 7 |
| Total | 3 | 0 | 1 | 0 | 4 | 0 | 8 | 0 | 0 | 8 | 1 | 1 | 0 | 0 | 2 | 0 | 5 | 4 | 0 | 9 | 23 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 1 | 0 | 3 | 4 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 3 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| 5:45 PM | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 3 | 0 | 4 | 8 |
| Total | 1 | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 3 | 0 | 1 | 1 | 0 | 2 | 0 | 4 | 6 | 0 | 10 | 16 |
| Grand Total | 4 | 0 | 1 | 0 | 5 | 0 | 11 | 0 | 0 | 11 | 1 | 2 | 1 | 0 | 4 | 0 | 9 | 10 | 0 | 19 | 39 |
| Approach % | 80.0 | 0.0 | 20.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 25.0 | 50.0 | 25.0 | 0.0 | | 0.0 | 47.4 | 52.6 | 0.0 | | |
| Total % | 10.3 | 0.0 | 2.6 | 0.0 | 12.8 | 0.0 | 28.2 | 0.0 | 0.0 | 28.2 | 2.6 | 5.1 | 2.6 | 0.0 | 10.3 | 0.0 | 23.1 | 25.6 | 0.0 | 48.7 | |
| Exiting Leg Total | | | | | 12 | | | | | 11 | | | | | 0 | | | | | 16 | 39 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:00 PM | K Street | | | | | East 1st Street | | | | | K Street | | | | | East 1st Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 5 | 1 | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 3 | 9 |
| 4:15 PM | 1 | 0 | 1 | 0 | 2 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 4:30 PM | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 3 |
| 4:45 PM | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 4 | 0 | 4 | 7 |
| Total Volume | 3 | 0 | 1 | 0 | 4 | 0 | 8 | 0 | 0 | 8 | 1 | 1 | 0 | 0 | 2 | 0 | 5 | 4 | 0 | 9 | 23 |
| % Approach Total | 75.0 | 0.0 | 25.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 50.0 | 50.0 | 0.0 | 0.0 | | 0.0 | 55.6 | 44.4 | 0.0 | | |
| PHF | 0.750 | 0.000 | 0.250 | 0.000 | 0.500 | 0.000 | 0.400 | 0.000 | 0.000 | 0.400 | 0.250 | 0.250 | 0.000 | 0.000 | 0.500 | 0.000 | 0.417 | 0.250 | 0.000 | 0.563 | 0.639 |
| Entering Leg | 3 | 0 | 1 | 0 | 4 | 0 | 8 | 0 | 0 | 8 | 1 | 1 | 0 | 0 | 2 | 0 | 5 | 4 | 0 | 9 | 23 |
| Exiting Leg | | | | | 5 | | | | | 7 | | | | | 0 | | | | | 11 | 23 |
| Total | | | | | 9 | | | | | 15 | | | | | 2 | | | | | 20 | 46 |

PDI File #: **175708 KK**
Location: **N: K Street S: K Street**
Location: **E: East 1st Street W: East 1st Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Buses

| | K Street | | | | | East 1st Street | | | | | K Street | | | | | East 1st Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 3 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 2 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 3 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 6 |
| Approach % | 0.0 | 0.0 | 0.0 | 0.0 | | 33.3 | 66.7 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | |
| Total % | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 16.7 | 33.3 | 0.0 | 0.0 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 50.0 | 0.0 | 0.0 | 50.0 | |
| Exiting Leg Total | | | | | 1 | | | | | 3 | | | | | 0 | | | | | 2 | 6 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:00 PM | K Street | | | | | East 1st Street | | | | | K Street | | | | | East 1st Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | South | | | | | West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 3 |
| % Approach Total | 0.0 | 0.0 | 0.0 | 0.0 | | 100.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | |
| PHF | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.250 | 0.000 | 0.000 | 0.000 | 0.250 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.500 | 0.000 | 0.000 | 0.500 | 0.750 |
| Entering Leg | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 3 |
| Exiting Leg | | | | | 1 | | | | | 2 | | | | | 0 | | | | | 0 | 3 |
| Total | | | | | 1 | | | | | 3 | | | | | 0 | | | | | 2 | 6 |

PDI File #: **175708 KK**
Location: **N: K Street S: K Street**
Location: **E: East 1st Street W: East 1st Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Bicycles (on Roadway and Crosswalks)

| | K Street | | | | | | | East 1st Street | | | | | | | K Street | | | | | | | East 1st Street | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | East | | | | | | | South | | | | | | | West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:30 PM | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 5 |
| 5:00 PM | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 3 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 2 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 2 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 3 |
| Total | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 1 | 0 | 0 | 0 | 6 | 10 |
| Grand Total | 2 | 1 | 0 | 0 | 0 | 0 | 3 | 0 | 2 | 1 | 0 | 0 | 0 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 5 | 1 | 0 | 0 | 1 | 7 | 15 |
| Approach % | 66.7 | 33.3 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 66.7 | 33.3 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 71.4 | 14.3 | 0.0 | 0.0 | 14.3 | | |
| Total % | 13.3 | 6.7 | 0.0 | 0.0 | 0.0 | 0.0 | 20.0 | 0.0 | 13.3 | 6.7 | 0.0 | 0.0 | 0.0 | 20.0 | 0.0 | 13.3 | 0.0 | 0.0 | 0.0 | 0.0 | 13.3 | 0.0 | 33.3 | 6.7 | 0.0 | 0.0 | 6.7 | 46.7 | |
| Exiting Leg Total | | | | | | | 3 | | | | | | | 5 | | | | | | | 2 | | | | | | | 5 | 15 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 5:00 PM | K Street | | | | | | | East 1st Street | | | | | | | K Street | | | | | | | East 1st Street | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | East | | | | | | | South | | | | | | | West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 5:00 PM | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 3 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 2 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 2 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 3 |
| Total Volume | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 1 | 0 | 0 | 0 | 6 | 10 |
| % Approach Total | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 66.7 | 33.3 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 83.3 | 16.7 | 0.0 | 0.0 | 0.0 | | |
| PHF | 0.250 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.250 | 0.000 | 0.250 | 0.250 | 0.000 | 0.000 | 0.000 | 0.375 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.625 | 0.250 | 0.000 | 0.000 | 0.000 | 0.750 | 0.833 |
| Entering Leg | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 1 | 0 | 0 | 0 | 6 | 10 |
| Exiting Leg | | | | | | | 1 | | | | | | | 5 | | | | | | | 1 | | | | | | | 3 | 10 |
| Total | | | | | | | 2 | | | | | | | 8 | | | | | | | 1 | | | | | | | 9 | 20 |

PDI File #: **175708 KK**
Location: **N: K Street S: K Street**
Location: **E: East 1st Street W: East 1st Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Pedestrians

| | K Street North | | | | | | | East 1st Street East | | | | | | | K Street South | | | | | | | East 1st Street West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 6 |
| 4:15 PM | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 1 | 3 | 4 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 12 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 6 |
| 4:45 PM | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 7 |
| Total | 0 | 0 | 0 | 0 | 2 | 4 | 6 | 0 | 0 | 0 | 0 | 6 | 5 | 11 | 0 | 0 | 0 | 0 | 2 | 4 | 6 | 0 | 0 | 0 | 0 | 4 | 4 | 8 | 31 |
| 5:00 PM | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 4 | 5 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 11 |
| 5:15 PM | 0 | 0 | 0 | 0 | 1 | 5 | 6 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 2 | 10 | 12 | 23 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 3 | 4 | 7 | 0 | 0 | 0 | 0 | 0 | 7 | 7 | 18 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 8 | 0 | 8 | 0 | 0 | 0 | 0 | 5 | 4 | 9 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 22 |
| Total | 0 | 0 | 0 | 0 | 2 | 9 | 11 | 0 | 0 | 0 | 0 | 13 | 1 | 14 | 0 | 0 | 0 | 0 | 11 | 13 | 24 | 0 | 0 | 0 | 0 | 2 | 23 | 25 | 74 |
| Grand Total | 0 | 0 | 0 | 0 | 4 | 13 | 17 | 0 | 0 | 0 | 0 | 19 | 6 | 25 | 0 | 0 | 0 | 0 | 13 | 17 | 30 | 0 | 0 | 0 | 0 | 6 | 27 | 33 | 105 |
| Approach % | 0.0 | 0.0 | 0.0 | 0.0 | 23.5 | 76.5 | | 0.0 | 0.0 | 0.0 | 0.0 | 76.0 | 24.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 43.3 | 56.7 | | 0.0 | 0.0 | 0.0 | 0.0 | 18.2 | 81.8 | | |
| Total % | 0.0 | 0.0 | 0.0 | 0.0 | 3.8 | 12.4 | 16.2 | 0.0 | 0.0 | 0.0 | 0.0 | 18.1 | 5.7 | 23.8 | 0.0 | 0.0 | 0.0 | 0.0 | 12.4 | 16.2 | 28.6 | 0.0 | 0.0 | 0.0 | 0.0 | 5.7 | 25.7 | 31.4 | |
| Exiting Leg Total | | | | | | | 17 | | | | | | | 25 | | | | | | | 30 | | | | | | | 33 | 105 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 5:00 PM | K Street North | | | | | | | East 1st Street East | | | | | | | K Street South | | | | | | | East 1st Street West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 5:00 PM | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 4 | 5 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 11 |
| 5:15 PM | 0 | 0 | 0 | 0 | 1 | 5 | 6 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 2 | 10 | 12 | 23 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 3 | 4 | 7 | 0 | 0 | 0 | 0 | 0 | 7 | 7 | 18 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 8 | 0 | 8 | 0 | 0 | 0 | 0 | 5 | 4 | 9 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 22 |
| Total Volume | 0 | 0 | 0 | 0 | 2 | 9 | 11 | 0 | 0 | 0 | 0 | 13 | 1 | 14 | 0 | 0 | 0 | 0 | 11 | 13 | 24 | 0 | 0 | 0 | 0 | 2 | 23 | 25 | 74 |
| % Approach Total | 0.0 | 0.0 | 0.0 | 0.0 | 18.2 | 81.8 | | 0.0 | 0.0 | 0.0 | 0.0 | 92.9 | 7.1 | | 0.0 | 0.0 | 0.0 | 0.0 | 45.8 | 54.2 | | 0.0 | 0.0 | 0.0 | 0.0 | 8.0 | 92.0 | | |
| PHF | 0.000 | 0.000 | 0.000 | 0.000 | 0.500 | 0.450 | 0.458 | 0.000 | 0.000 | 0.000 | 0.000 | 0.406 | 0.250 | 0.438 | 0.000 | 0.000 | 0.000 | 0.000 | 0.550 | 0.813 | 0.667 | 0.000 | 0.000 | 0.000 | 0.000 | 0.250 | 0.575 | 0.521 | 0.804 |
| Entering Leg | 0 | 0 | 0 | 0 | 2 | 9 | 11 | 0 | 0 | 0 | 0 | 13 | 1 | 14 | 0 | 0 | 0 | 0 | 11 | 13 | 24 | 0 | 0 | 0 | 0 | 2 | 23 | 25 | 74 |
| Exiting Leg | | | | | | | 11 | | | | | | | 14 | | | | | | | 24 | | | | | | | 25 | 74 |
| Total | | | | | | | 22 | | | | | | | 28 | | | | | | | 48 | | | | | | | 50 | 148 |

PDI File #: **175708 L**
Location: **N: Pappas Way NW: West 1st Street**
Location: **E: East 1st Street SE: West 1st Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Cars, Heavy Vehicles, and Buses (Combined)

| | Pappas Way | | | | | East 1st Street | | | | | West 1st Street | | | | | West 1st Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | Southeast | | | | | Northwest | | | | | |
| | Hard Righ | Bear Left | Left | U-Turn | Total | Right | Bear Righ | Hard Left | U-Turn | Total | Hard Righ | Bear Righ | Thru | U-Turn | Total | Thru | Bear Left | Hard Left | U-Turn | Total | Total |
| 7:00 AM | 12 | 0 | 45 | 0 | 57 | 34 | 39 | 0 | 0 | 73 | 0 | 8 | 14 | 0 | 22 | 0 | 35 | 9 | 0 | 44 | 196 |
| 7:15 AM | 13 | 0 | 34 | 0 | 47 | 41 | 54 | 0 | 0 | 95 | 0 | 15 | 16 | 0 | 31 | 0 | 37 | 4 | 0 | 41 | 214 |
| 7:30 AM | 10 | 0 | 30 | 0 | 40 | 44 | 105 | 0 | 1 | 150 | 1 | 14 | 20 | 0 | 35 | 0 | 45 | 4 | 0 | 49 | 274 |
| 7:45 AM | 11 | 0 | 36 | 0 | 47 | 46 | 75 | 0 | 0 | 121 | 2 | 18 | 20 | 0 | 40 | 0 | 54 | 7 | 0 | 61 | 269 |
| Total | 46 | 0 | 145 | 0 | 191 | 165 | 273 | 0 | 1 | 439 | 3 | 55 | 70 | 0 | 128 | 0 | 171 | 24 | 0 | 195 | 953 |
| 8:00 AM | 21 | 0 | 20 | 0 | 41 | 67 | 133 | 0 | 0 | 200 | 1 | 13 | 23 | 0 | 37 | 1 | 56 | 6 | 0 | 63 | 341 |
| 8:15 AM | 19 | 0 | 27 | 0 | 46 | 65 | 104 | 0 | 1 | 170 | 0 | 15 | 19 | 0 | 34 | 0 | 54 | 3 | 0 | 57 | 307 |
| 8:30 AM | 12 | 0 | 21 | 0 | 33 | 40 | 67 | 0 | 1 | 108 | 0 | 17 | 16 | 0 | 33 | 0 | 43 | 14 | 1 | 58 | 232 |
| 8:45 AM | 14 | 0 | 53 | 0 | 67 | 40 | 72 | 0 | 0 | 112 | 2 | 8 | 16 | 0 | 26 | 0 | 41 | 3 | 0 | 44 | 249 |
| Total | 66 | 0 | 121 | 0 | 187 | 212 | 376 | 0 | 2 | 590 | 3 | 53 | 74 | 0 | 130 | 1 | 194 | 26 | 1 | 222 | 1129 |
| Grand Total | 112 | 0 | 266 | 0 | 378 | 377 | 649 | 0 | 3 | 1029 | 6 | 108 | 144 | 0 | 258 | 1 | 365 | 50 | 1 | 417 | 2082 |
| Approach % | 29.6 | 0.0 | 70.4 | 0.0 | | 36.6 | 63.1 | 0.0 | 0.3 | | 2.3 | 41.9 | 55.8 | 0.0 | | 0.2 | 87.5 | 12.0 | 0.2 | | |
| Total % | 5.4 | 0.0 | 12.8 | 0.0 | 18.2 | 18.1 | 31.2 | 0.0 | 0.1 | 49.4 | 0.3 | 5.2 | 6.9 | 0.0 | 12.4 | 0.0 | 17.5 | 2.4 | 0.0 | 20.0 | |
| Exiting Leg Total | | | | | 535 | | | | | 640 | | | | | 1 | | | | | 906 | 2082 |
| Cars | 78 | 0 | 235 | 0 | 313 | 367 | 603 | 0 | 3 | 973 | 5 | 107 | 140 | 0 | 252 | 1 | 328 | 41 | 1 | 371 | 1909 |
| % Cars | 69.6 | 0.0 | 88.3 | 0.0 | 82.8 | 97.3 | 92.9 | 0.0 | 100.0 | 94.6 | 83.3 | 99.1 | 97.2 | 0.0 | 97.7 | 100.0 | 89.9 | 82.0 | 100.0 | 89.0 | 91.7 |
| Exiting Leg Total | | | | | 515 | | | | | 571 | | | | | 1 | | | | | 822 | 1909 |
| Heavy Vehicles | 33 | 0 | 30 | 0 | 63 | 10 | 43 | 0 | 0 | 53 | 1 | 1 | 4 | 0 | 6 | 0 | 24 | 7 | 0 | 31 | 153 |
| % Heavy Vehicles | 29.5 | 0.0 | 11.3 | 0.0 | 16.7 | 2.7 | 6.6 | 0.0 | 0.0 | 5.2 | 16.7 | 0.9 | 2.8 | 0.0 | 2.3 | 0.0 | 6.6 | 14.0 | 0.0 | 7.4 | 7.3 |
| Exiting Leg Total | | | | | 18 | | | | | 55 | | | | | 0 | | | | | 80 | 153 |
| Buses | 1 | 0 | 1 | 0 | 2 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 2 | 0 | 15 | 20 |
| % Buses | 0.9 | 0.0 | 0.4 | 0.0 | 0.5 | 0.0 | 0.5 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.6 | 4.0 | 0.0 | 3.6 | 1.0 |
| Exiting Leg Total | | | | | 2 | | | | | 14 | | | | | 0 | | | | | 4 | 20 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:30 AM | Pappas Way | | | | | East 1st Street | | | | | West 1st Street | | | | | West 1st Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | Southeast | | | | | Northwest | | | | | |
| | Hard Righ | Bear Left | Left | U-Turn | Total | Right | Bear Righ | Hard Left | U-Turn | Total | Hard Righ | Bear Righ | Thru | U-Turn | Total | Thru | Bear Left | Hard Left | U-Turn | Total | Total |
| 7:30 AM | 10 | 0 | 30 | 0 | 40 | 44 | 105 | 0 | 1 | 150 | 1 | 14 | 20 | 0 | 35 | 0 | 45 | 4 | 0 | 49 | 274 |
| 7:45 AM | 11 | 0 | 36 | 0 | 47 | 46 | 75 | 0 | 0 | 121 | 2 | 18 | 20 | 0 | 40 | 0 | 54 | 7 | 0 | 61 | 269 |
| 8:00 AM | 21 | 0 | 20 | 0 | 41 | 67 | 133 | 0 | 0 | 200 | 1 | 13 | 23 | 0 | 37 | 1 | 56 | 6 | 0 | 63 | 341 |
| 8:15 AM | 19 | 0 | 27 | 0 | 46 | 65 | 104 | 0 | 1 | 170 | 0 | 15 | 19 | 0 | 34 | 0 | 54 | 3 | 0 | 57 | 307 |
| Total Volume | 61 | 0 | 113 | 0 | 174 | 222 | 417 | 0 | 2 | 641 | 4 | 60 | 82 | 0 | 146 | 1 | 209 | 20 | 0 | 230 | 1191 |
| % Approach Total | 35.1 | 0.0 | 64.9 | 0.0 | | 34.6 | 65.1 | 0.0 | 0.3 | | 2.7 | 41.1 | 56.2 | 0.0 | | 0.4 | 90.9 | 8.7 | 0.0 | | |
| PHF | 0.726 | 0.000 | 0.785 | 0.000 | 0.926 | 0.828 | 0.784 | 0.000 | 0.500 | 0.801 | 0.500 | 0.833 | 0.891 | 0.000 | 0.913 | 0.250 | 0.933 | 0.714 | 0.000 | 0.913 | 0.873 |
| Cars | 41 | 0 | 100 | 0 | 141 | 215 | 396 | 0 | 2 | 613 | 4 | 59 | 80 | 0 | 143 | 1 | 186 | 15 | 0 | 202 | 1099 |
| Cars % | 67.2 | 0.0 | 88.5 | 0.0 | 81.0 | 96.8 | 95.0 | 0.0 | 100.0 | 95.6 | 100.0 | 98.3 | 97.6 | 0.0 | 97.9 | 100.0 | 89.0 | 75.0 | 0.0 | 87.8 | 92.3 |
| Heavy Vehicles | 19 | 0 | 13 | 0 | 32 | 7 | 19 | 0 | 0 | 26 | 0 | 1 | 2 | 0 | 3 | 0 | 15 | 4 | 0 | 19 | 80 |
| Heavy Vehicles % | 31.1 | 0.0 | 11.5 | 0.0 | 18.4 | 3.2 | 4.6 | 0.0 | 0.0 | 4.1 | 0.0 | 1.7 | 2.4 | 0.0 | 2.1 | 0.0 | 7.2 | 20.0 | 0.0 | 8.3 | 6.7 |
| Buses | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 1 | 0 | 9 | 12 |
| Buses % | 1.6 | 0.0 | 0.0 | 0.0 | 0.6 | 0.0 | 0.5 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.8 | 5.0 | 0.0 | 3.9 | 1.0 |
| Cars Enter Leg | 41 | 0 | 100 | 0 | 141 | 215 | 396 | 0 | 2 | 613 | 4 | 59 | 80 | 0 | 143 | 1 | 186 | 15 | 0 | 202 | 1099 |
| Heavy Enter Leg | 19 | 0 | 13 | 0 | 32 | 7 | 19 | 0 | 0 | 26 | 0 | 1 | 2 | 0 | 3 | 0 | 15 | 4 | 0 | 19 | 80 |
| Bus Enter Leg | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 1 | 0 | 9 | 12 |
| Total Entering Leg | 61 | 0 | 113 | 0 | 174 | 222 | 417 | 0 | 2 | 641 | 4 | 60 | 82 | 0 | 146 | 1 | 209 | 20 | 0 | 230 | 1191 |
| Cars Exiting Leg | | | | | 289 | | | | | 292 | | | | | 1 | | | | | 517 | 1099 |
| Heavy Exiting Leg | | | | | 12 | | | | | 28 | | | | | 0 | | | | | 40 | 80 |
| Buses Exiting Leg | | | | | 1 | | | | | 8 | | | | | 0 | | | | | 3 | 12 |
| Total Exiting Leg | | | | | 302 | | | | | 328 | | | | | 1 | | | | | 560 | 1191 |

PDI File #: **175708 L**
Location: **N: Pappas Way NW: West 1st Street**
Location: **E: East 1st Street SE: West 1st Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Cars

| | Pappas Way | | | | | East 1st Street | | | | | West 1st Street | | | | | West 1st Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | Southeast | | | | | Northwest | | | | | |
| | Hard Righ | Bear Left | Left | U-Turn | Total | Right | Bear Righ | Hard Left | U-Turn | Total | Hard Righ | Bear Righ | Thru | U-Turn | Total | Thru | Bear Left | Hard Left | U-Turn | Total | Total |
| 7:00 AM | 9 | 0 | 40 | 0 | 49 | 33 | 37 | 0 | 0 | 70 | 0 | 8 | 12 | 0 | 20 | 0 | 32 | 9 | 0 | 41 | 180 |
| 7:15 AM | 9 | 0 | 30 | 0 | 39 | 39 | 50 | 0 | 0 | 89 | 0 | 15 | 16 | 0 | 31 | 0 | 32 | 3 | 0 | 35 | 194 |
| 7:30 AM | 5 | 0 | 27 | 0 | 32 | 44 | 96 | 0 | 1 | 141 | 1 | 14 | 19 | 0 | 34 | 0 | 37 | 3 | 0 | 40 | 247 |
| 7:45 AM | 7 | 0 | 30 | 0 | 37 | 44 | 71 | 0 | 0 | 115 | 2 | 18 | 20 | 0 | 40 | 0 | 50 | 6 | 0 | 56 | 248 |
| Total | 30 | 0 | 127 | 0 | 157 | 160 | 254 | 0 | 1 | 415 | 3 | 55 | 67 | 0 | 125 | 0 | 151 | 21 | 0 | 172 | 869 |
| 8:00 AM | 15 | 0 | 18 | 0 | 33 | 66 | 131 | 0 | 0 | 197 | 1 | 12 | 22 | 0 | 35 | 1 | 53 | 3 | 0 | 57 | 322 |
| 8:15 AM | 14 | 0 | 25 | 0 | 39 | 61 | 98 | 0 | 1 | 160 | 0 | 15 | 19 | 0 | 34 | 0 | 46 | 3 | 0 | 49 | 282 |
| 8:30 AM | 12 | 0 | 21 | 0 | 33 | 40 | 62 | 0 | 1 | 103 | 0 | 17 | 16 | 0 | 33 | 0 | 39 | 11 | 1 | 51 | 220 |
| 8:45 AM | 7 | 0 | 44 | 0 | 51 | 40 | 58 | 0 | 0 | 98 | 1 | 8 | 16 | 0 | 25 | 0 | 39 | 3 | 0 | 42 | 216 |
| Total | 48 | 0 | 108 | 0 | 156 | 207 | 349 | 0 | 2 | 558 | 2 | 52 | 73 | 0 | 127 | 1 | 177 | 20 | 1 | 199 | 1040 |
| Grand Total | 78 | 0 | 235 | 0 | 313 | 367 | 603 | 0 | 3 | 973 | 5 | 107 | 140 | 0 | 252 | 1 | 328 | 41 | 1 | 371 | 1909 |
| Approach % | 24.9 | 0.0 | 75.1 | 0.0 | | 37.7 | 62.0 | 0.0 | 0.3 | | 2.0 | 42.5 | 55.6 | 0.0 | | 0.3 | 88.4 | 11.1 | 0.3 | | |
| Total % | 4.1 | 0.0 | 12.3 | 0.0 | 16.4 | 19.2 | 31.6 | 0.0 | 0.2 | 51.0 | 0.3 | 5.6 | 7.3 | 0.0 | 13.2 | 0.1 | 17.2 | 2.1 | 0.1 | 19.4 | |
| Exiting Leg Total | | | | | 515 | | | | | 571 | | | | | 1 | | | | | 822 | 1909 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:30 AM | Pappas Way | | | | | East 1st Street | | | | | West 1st Street | | | | | West 1st Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | Southeast | | | | | Northwest | | | | | |
| | Hard Righ | Bear Left | Left | U-Turn | Total | Right | Bear Righ | Hard Left | U-Turn | Total | Hard Righ | Bear Righ | Thru | U-Turn | Total | Thru | Bear Left | Hard Left | U-Turn | Total | Total |
| 7:30 AM | 5 | 0 | 27 | 0 | 32 | 44 | 96 | 0 | 1 | 141 | 1 | 14 | 19 | 0 | 34 | 0 | 37 | 3 | 0 | 40 | 247 |
| 7:45 AM | 7 | 0 | 30 | 0 | 37 | 44 | 71 | 0 | 0 | 115 | 2 | 18 | 20 | 0 | 40 | 0 | 50 | 6 | 0 | 56 | 248 |
| 8:00 AM | 15 | 0 | 18 | 0 | 33 | 66 | 131 | 0 | 0 | 197 | 1 | 12 | 22 | 0 | 35 | 1 | 53 | 3 | 0 | 57 | 322 |
| 8:15 AM | 14 | 0 | 25 | 0 | 39 | 61 | 98 | 0 | 1 | 160 | 0 | 15 | 19 | 0 | 34 | 0 | 46 | 3 | 0 | 49 | 282 |
| Total Volume | 41 | 0 | 100 | 0 | 141 | 215 | 396 | 0 | 2 | 613 | 4 | 59 | 80 | 0 | 143 | 1 | 186 | 15 | 0 | 202 | 1099 |
| % Approach Total | 29.1 | 0.0 | 70.9 | 0.0 | | 35.1 | 64.6 | 0.0 | 0.3 | | 2.8 | 41.3 | 55.9 | 0.0 | | 0.5 | 92.1 | 7.4 | 0.0 | | |
| PHF | 0.683 | 0.000 | 0.833 | 0.000 | 0.904 | 0.814 | 0.756 | 0.000 | 0.500 | 0.778 | 0.500 | 0.819 | 0.909 | 0.000 | 0.894 | 0.250 | 0.877 | 0.625 | 0.000 | 0.886 | 0.853 |
| Entering Leg | 41 | 0 | 100 | 0 | 141 | 215 | 396 | 0 | 2 | 613 | 4 | 59 | 80 | 0 | 143 | 1 | 186 | 15 | 0 | 202 | 1099 |
| Exiting Leg | | | | | 289 | | | | | 292 | | | | | 1 | | | | | 517 | 1099 |
| Total | | | | | 430 | | | | | 905 | | | | | 144 | | | | | 719 | 2198 |

PDI File #: **175708 L**
Location: **N: Pappas Way NW: West 1st Street**
Location: **E: East 1st Street SE: West 1st Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Heavy Vehicles

| | Pappas Way | | | | | East 1st Street | | | | | West 1st Street | | | | | West 1st Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | Southeast | | | | | Northwest | | | | | |
| | Hard Righ | Bear Left | Left | U-Turn | Total | Right | Bear Righ | Hard Left | U-Turn | Total | Hard Righ | Bear Righ | Thru | U-Turn | Total | Thru | Bear Left | Hard Left | U-Turn | Total | Total |
| 7:00 AM | 3 | 0 | 5 | 0 | 8 | 1 | 2 | 0 | 0 | 3 | 0 | 0 | 2 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 14 |
| 7:15 AM | 4 | 0 | 4 | 0 | 8 | 2 | 4 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 3 | 17 |
| 7:30 AM | 5 | 0 | 3 | 0 | 8 | 0 | 8 | 0 | 0 | 8 | 0 | 0 | 1 | 0 | 1 | 0 | 4 | 1 | 0 | 5 | 22 |
| 7:45 AM | 4 | 0 | 6 | 0 | 10 | 2 | 3 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 4 | 19 |
| Total | 16 | 0 | 18 | 0 | 34 | 5 | 17 | 0 | 0 | 22 | 0 | 0 | 3 | 0 | 3 | 0 | 10 | 3 | 0 | 13 | 72 |
| 8:00 AM | 6 | 0 | 2 | 0 | 8 | 1 | 2 | 0 | 0 | 3 | 0 | 1 | 1 | 0 | 2 | 0 | 1 | 2 | 0 | 3 | 16 |
| 8:15 AM | 4 | 0 | 2 | 0 | 6 | 4 | 6 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 7 | 23 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 2 | 0 | 6 | 11 |
| 8:45 AM | 7 | 0 | 8 | 0 | 15 | 0 | 13 | 0 | 0 | 13 | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 2 | 31 |
| Total | 17 | 0 | 12 | 0 | 29 | 5 | 26 | 0 | 0 | 31 | 1 | 1 | 1 | 0 | 3 | 0 | 14 | 4 | 0 | 18 | 81 |
| Grand Total | 33 | 0 | 30 | 0 | 63 | 10 | 43 | 0 | 0 | 53 | 1 | 1 | 4 | 0 | 6 | 0 | 24 | 7 | 0 | 31 | 153 |
| Approach % | 52.4 | 0.0 | 47.6 | 0.0 | | 18.9 | 81.1 | 0.0 | 0.0 | | 16.7 | 16.7 | 66.7 | 0.0 | | 0.0 | 77.4 | 22.6 | 0.0 | | |
| Total % | 21.6 | 0.0 | 19.6 | 0.0 | 41.2 | 6.5 | 28.1 | 0.0 | 0.0 | 34.6 | 0.7 | 0.7 | 2.6 | 0.0 | 3.9 | 0.0 | 15.7 | 4.6 | 0.0 | 20.3 | |
| Exiting Leg Total | | | | | 18 | | | | | 55 | | | | | 0 | | | | | 80 | 153 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 8:00 AM | Pappas Way | | | | | East 1st Street | | | | | West 1st Street | | | | | West 1st Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | Southeast | | | | | Northwest | | | | | |
| | Hard Righ | Bear Left | Left | U-Turn | Total | Right | Bear Righ | Hard Left | U-Turn | Total | Hard Righ | Bear Righ | Thru | U-Turn | Total | Thru | Bear Left | Hard Left | U-Turn | Total | Total |
| 8:00 AM | 6 | 0 | 2 | 0 | 8 | 1 | 2 | 0 | 0 | 3 | 0 | 1 | 1 | 0 | 2 | 0 | 1 | 2 | 0 | 3 | 16 |
| 8:15 AM | 4 | 0 | 2 | 0 | 6 | 4 | 6 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 7 | 23 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 2 | 0 | 6 | 11 |
| 8:45 AM | 7 | 0 | 8 | 0 | 15 | 0 | 13 | 0 | 0 | 13 | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 2 | 31 |
| Total Volume | 17 | 0 | 12 | 0 | 29 | 5 | 26 | 0 | 0 | 31 | 1 | 1 | 1 | 0 | 3 | 0 | 14 | 4 | 0 | 18 | 81 |
| % Approach Total | 58.6 | 0.0 | 41.4 | 0.0 | | 16.1 | 83.9 | 0.0 | 0.0 | | 33.3 | 33.3 | 33.3 | 0.0 | | 0.0 | 77.8 | 22.2 | 0.0 | | |
| PHF | 0.607 | 0.000 | 0.375 | 0.000 | 0.483 | 0.313 | 0.500 | 0.000 | 0.000 | 0.596 | 0.250 | 0.250 | 0.250 | 0.000 | 0.375 | 0.000 | 0.500 | 0.500 | 0.000 | 0.643 | 0.653 |
| Entering Leg | 17 | 0 | 12 | 0 | 29 | 5 | 26 | 0 | 0 | 31 | 1 | 1 | 1 | 0 | 3 | 0 | 14 | 4 | 0 | 18 | 81 |
| Exiting Leg | | | | | 10 | | | | | 27 | | | | | 0 | | | | | 44 | 81 |
| Total | | | | | 39 | | | | | 58 | | | | | 3 | | | | | 62 | 162 |

PDI File #: **175708 L**
Location: **N: Pappas Way NW: West 1st Street**
Location: **E: East 1st Street SE: West 1st Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Buses

| | Pappas Way | | | | | East 1st Street | | | | | West 1st Street | | | | | West 1st Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | Southeast | | | | | Northwest | | | | | |
| | Hard Righ | Bear Left | Left | U-Turn | Total | Right | Bear Righ | Hard Left | U-Turn | Total | Hard Righ | Bear Righ | Thru | U-Turn | Total | Thru | Bear Left | Hard Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 2 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 3 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 5 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 2 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 10 | 12 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 3 | 3 |
| 8:15 AM | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 2 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| 8:45 AM | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Total | 1 | 0 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 0 | 5 | 8 |
| Grand Total | 1 | 0 | 1 | 0 | 2 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 2 | 0 | 15 | 20 |
| Approach % | 50.0 | 0.0 | 50.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 86.7 | 13.3 | 0.0 | | |
| Total % | 5.0 | 0.0 | 5.0 | 0.0 | 10.0 | 0.0 | 15.0 | 0.0 | 0.0 | 15.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 65.0 | 10.0 | 0.0 | 75.0 | |
| Exiting Leg Total | | | | | 2 | | | | | 14 | | | | | 0 | | | | | 4 | 20 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:15 AM | Pappas Way | | | | | East 1st Street | | | | | West 1st Street | | | | | West 1st Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | Southeast | | | | | Northwest | | | | | |
| | Hard Righ | Bear Left | Left | U-Turn | Total | Right | Bear Righ | Hard Left | U-Turn | Total | Hard Righ | Bear Righ | Thru | U-Turn | Total | Thru | Bear Left | Hard Left | U-Turn | Total | Total |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 3 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 5 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 2 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 3 | 3 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 1 | 0 | 11 | 13 |
| % Approach Total | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 90.9 | 9.1 | 0.0 | | |
| PHF | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.500 | 0.000 | 0.000 | 0.500 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.625 | 0.250 | 0.000 | 0.688 | 0.650 |
| Entering Leg | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 1 | 0 | 11 | 13 |
| Exiting Leg | | | | | 1 | | | | | 10 | | | | | 0 | | | | | 2 | 13 |
| Total | | | | | 1 | | | | | 12 | | | | | 0 | | | | | 13 | 26 |

PDI File #: **175708 L**
Location: **N: Pappas Way NW: West 1st Street**
Location: **E: East 1st Street SE: West 1st Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Bicycles (on Roadway and Crosswalks)

| | Pappas Way North | | | | | | | East 1st Street East | | | | | | | West 1st Street Southeast | | | | | | | West 1st Street Northwest | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hard Right | Bear Left | Left | U-Turn | CW-EB | CW-WB | Total | Right | Bear Right | Hard Left | U-Turn | CW-SB | CW-NB | Total | Hard Right | Bear Right | Thru | U-Turn | CW-SWB | CW-NEB | Total | Thru | Bear Left | Hard Left | U-Turn | CW-NEB | CW-SWB | Total | Total |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 5 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 6 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 0 | 1 | 1 | 0 | 0 | 0 | 2 | 7 |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 4 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6 | 0 | 0 | 0 | 0 | 8 | 1 | 1 | 9 | 0 | 0 | 0 | 11 | 0 | 1 | 1 | 0 | 0 | 0 | 2 | 21 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 7 | 0 | 0 | 0 | 0 | 10 | 1 | 2 | 10 | 0 | 0 | 0 | 13 | 0 | 3 | 1 | 0 | 0 | 0 | 4 | 27 |
| Approach % | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 30.0 | 70.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 7.7 | 15.4 | 76.9 | 0.0 | 0.0 | 0.0 | | 0.0 | 75.0 | 25.0 | 0.0 | 0.0 | 0.0 | | |
| Total % | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 11.1 | 25.9 | 0.0 | 0.0 | 0.0 | 0.0 | 37.0 | 3.7 | 7.4 | 37.0 | 0.0 | 0.0 | 0.0 | 48.1 | 0.0 | 11.1 | 3.7 | 0.0 | 0.0 | 0.0 | 14.8 | |
| Exiting Leg Total | | | | | | | 6 | | | | | | | 4 | | | | | | | 0 | | | | | | | 17 | 27 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 8:00 AM | Pappas Way North | | | | | | | East 1st Street East | | | | | | | West 1st Street Southeast | | | | | | | West 1st Street Northwest | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hard Right | Bear Left | Left | U-Turn | CW-EB | CW-WB | Total | Right | Bear Right | Hard Left | U-Turn | CW-SB | CW-NB | Total | Hard Right | Bear Right | Thru | U-Turn | CW-SWB | CW-NEB | Total | Thru | Bear Left | Hard Left | U-Turn | CW-NEB | CW-SWB | Total | Total |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 0 | 1 | 1 | 0 | 0 | 0 | 2 | 7 |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 4 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6 | 0 | 0 | 0 | 0 | 8 | 1 | 1 | 9 | 0 | 0 | 0 | 11 | 0 | 1 | 1 | 0 | 0 | 0 | 2 | 21 |
| % Approach Total | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 25.0 | 75.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 9.1 | 9.1 | 81.8 | 0.0 | 0.0 | 0.0 | | 0.0 | 50.0 | 50.0 | 0.0 | 0.0 | 0.0 | | |
| PHF | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.500 | 0.500 | 0.000 | 0.000 | 0.000 | 0.000 | 0.500 | 0.250 | 0.250 | 0.563 | 0.000 | 0.000 | 0.000 | 0.550 | 0.000 | 0.250 | 0.250 | 0.000 | 0.000 | 0.000 | 0.250 | 0.750 |
| Entering Leg | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6 | 0 | 0 | 0 | 0 | 8 | 1 | 1 | 9 | 0 | 0 | 0 | 11 | 0 | 1 | 1 | 0 | 0 | 0 | 2 | 21 |
| Exiting Leg | | | | | | | 4 | | | | | | | 2 | | | | | | | 0 | | | | | | | 15 | 21 |
| Total | | | | | | | 4 | | | | | | | 10 | | | | | | | 11 | | | | | | | 17 | 42 |

PDI File #: **175708 L**
Location: **N: Pappas Way NW: West 1st Street**
Location: **E: East 1st Street SE: West 1st Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Pedestrians

| | Pappas Way | | | | | | | East 1st Street | | | | | | | West 1st Street | | | | | | | West 1st Street | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | East | | | | | | | Southeast | | | | | | | Northwest | | | | | | | |
| | Hard Right | Bear Left | Left | U-Turn | CW-EB | CW-WB | Total | Right | Bear Right | Hard Left | U-Turn | CW-SB | CW-NB | Total | Hard Right | Bear Right | Thru | U-Turn | CW-SWB | CW-NEB | Total | Thru | Bear Left | Hard Left | U-Turn | CW-NEB | CW-SWB | Total | Total |
| 7:00 AM | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 3 | 1 | 4 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 4 | 0 | 0 | 0 | 0 | 1 | 3 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 3 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 5 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 8 |
| Total | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 6 | 8 | 14 | 0 | 0 | 0 | 0 | 5 | 7 | 12 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 28 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 7 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 6 |
| 8:45 AM | 0 | 0 | 0 | 0 | 3 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 6 | 6 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| Total | 0 | 0 | 0 | 0 | 3 | 1 | 4 | 0 | 0 | 0 | 0 | 1 | 23 | 24 | 0 | 0 | 0 | 0 | 4 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 34 |
| Grand Total | 0 | 0 | 0 | 0 | 4 | 1 | 5 | 0 | 0 | 0 | 0 | 7 | 31 | 38 | 0 | 0 | 0 | 0 | 9 | 8 | 17 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 62 |
| Approach % | 0.0 | 0.0 | 0.0 | 0.0 | 80.0 | 20.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 18.4 | 81.6 | | 0.0 | 0.0 | 0.0 | 0.0 | 52.9 | 47.1 | | 0.0 | 0.0 | 0.0 | 0.0 | 50.0 | 50.0 | | |
| Total % | 0.0 | 0.0 | 0.0 | 0.0 | 6.5 | 1.6 | 8.1 | 0.0 | 0.0 | 0.0 | 0.0 | 11.3 | 50.0 | 61.3 | 0.0 | 0.0 | 0.0 | 0.0 | 14.5 | 12.9 | 27.4 | 0.0 | 0.0 | 0.0 | 0.0 | 1.6 | 1.6 | 3.2 | |
| Exiting Leg Total | | | | | | | 5 | | | | | | | 38 | | | | | | | 17 | | | | | | | 2 | 62 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 8:00 AM | Pappas Way | | | | | | | East 1st Street | | | | | | | West 1st Street | | | | | | | West 1st Street | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | East | | | | | | | Southeast | | | | | | | Northwest | | | | | | | |
| | Hard Right | Bear Left | Left | U-Turn | CW-EB | CW-WB | Total | Right | Bear Right | Hard Left | U-Turn | CW-SB | CW-NB | Total | Hard Right | Bear Right | Thru | U-Turn | CW-SWB | CW-NEB | Total | Thru | Bear Left | Hard Left | U-Turn | CW-NEB | CW-SWB | Total | Total |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 7 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 6 |
| 8:45 AM | 0 | 0 | 0 | 0 | 3 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 6 | 6 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| Total Volume | 0 | 0 | 0 | 0 | 3 | 1 | 4 | 0 | 0 | 0 | 0 | 1 | 23 | 24 | 0 | 0 | 0 | 0 | 4 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 34 |
| % Approach Total | 0.0 | 0.0 | 0.0 | 0.0 | 75.0 | 25.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 4.2 | 95.8 | | 0.0 | 0.0 | 0.0 | 0.0 | 80.0 | 20.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | | |
| PHF | 0.000 | 0.000 | 0.000 | 0.000 | 0.250 | 0.250 | 0.250 | 0.000 | 0.000 | 0.000 | 0.000 | 0.250 | 0.821 | 0.857 | 0.000 | 0.000 | 0.000 | 0.000 | 0.500 | 0.250 | 0.417 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.250 | 0.250 | 0.773 |
| Entering Leg | 0 | 0 | 0 | 0 | 3 | 1 | 4 | 0 | 0 | 0 | 0 | 1 | 23 | 24 | 0 | 0 | 0 | 0 | 4 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 34 |
| Exiting Leg | | | | | | | 4 | | | | | | | 24 | | | | | | | 5 | | | | | | | 1 | 34 |
| Total | | | | | | | 8 | | | | | | | 48 | | | | | | | 10 | | | | | | | 2 | 68 |

PDI File #: **175708 LL**
Location: **N: Pappas Way NW: West 1st Street**
Location: **E: East 1st Street SE: West 1st Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Cars, Heavy Vehicles, and Buses (Combined)

| | Pappas Way | | | | | East 1st Street | | | | | West 1st Street | | | | | West 1st Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | Southeast | | | | | Northwest | | | | | |
| | Hard Righ | Bear Left | Left | U-Turn | Total | Right | Bear Righ | Hard Left | U-Turn | Total | Hard Righ | Bear Righ | Thru | U-Turn | Total | Thru | Bear Left | Hard Left | U-Turn | Total | Total |
| 4:00 PM | 12 | 0 | 88 | 0 | 100 | 16 | 42 | 0 | 0 | 58 | 5 | 3 | 16 | 1 | 25 | 0 | 78 | 4 | 0 | 82 | 265 |
| 4:15 PM | 12 | 0 | 70 | 0 | 82 | 24 | 33 | 0 | 0 | 57 | 0 | 10 | 12 | 0 | 22 | 0 | 87 | 4 | 0 | 91 | 252 |
| 4:30 PM | 19 | 0 | 67 | 0 | 86 | 26 | 41 | 0 | 0 | 67 | 1 | 3 | 15 | 0 | 19 | 0 | 68 | 5 | 1 | 74 | 246 |
| 4:45 PM | 12 | 0 | 66 | 0 | 78 | 13 | 49 | 0 | 0 | 62 | 2 | 7 | 8 | 0 | 17 | 0 | 81 | 12 | 0 | 93 | 250 |
| Total | 55 | 0 | 291 | 0 | 346 | 79 | 165 | 0 | 0 | 244 | 8 | 23 | 51 | 1 | 83 | 0 | 314 | 25 | 1 | 340 | 1013 |
| 5:00 PM | 18 | 0 | 87 | 0 | 105 | 19 | 32 | 0 | 0 | 51 | 3 | 7 | 11 | 0 | 21 | 0 | 102 | 3 | 0 | 105 | 282 |
| 5:15 PM | 16 | 0 | 77 | 0 | 93 | 22 | 41 | 0 | 0 | 63 | 3 | 8 | 3 | 0 | 14 | 0 | 85 | 9 | 0 | 94 | 264 |
| 5:30 PM | 11 | 0 | 78 | 0 | 89 | 23 | 38 | 0 | 0 | 61 | 0 | 9 | 13 | 0 | 22 | 0 | 80 | 4 | 0 | 84 | 256 |
| 5:45 PM | 15 | 0 | 87 | 0 | 102 | 15 | 44 | 0 | 0 | 59 | 3 | 11 | 9 | 0 | 23 | 0 | 103 | 9 | 0 | 112 | 296 |
| Total | 60 | 0 | 329 | 0 | 389 | 79 | 155 | 0 | 0 | 234 | 9 | 35 | 36 | 0 | 80 | 0 | 370 | 25 | 0 | 395 | 1098 |
| Grand Total | 115 | 0 | 620 | 0 | 735 | 158 | 320 | 0 | 0 | 478 | 17 | 58 | 87 | 1 | 163 | 0 | 684 | 50 | 1 | 735 | 2111 |
| Approach % | 15.6 | 0.0 | 84.4 | 0.0 | | 33.1 | 66.9 | 0.0 | 0.0 | | 10.4 | 35.6 | 53.4 | 0.6 | | 0.0 | 93.1 | 6.8 | 0.1 | | |
| Total % | 5.4 | 0.0 | 29.4 | 0.0 | 34.8 | 7.5 | 15.2 | 0.0 | 0.0 | 22.6 | 0.8 | 2.7 | 4.1 | 0.0 | 7.7 | 0.0 | 32.4 | 2.4 | 0.0 | 34.8 | |
| Exiting Leg Total | | | | | 266 | | | | | 1321 | | | | | 1 | | | | | 523 | 2111 |
| Cars | 111 | 0 | 612 | 0 | 723 | 155 | 309 | 0 | 0 | 464 | 17 | 55 | 83 | 1 | 156 | 0 | 658 | 43 | 1 | 702 | 2045 |
| % Cars | 96.5 | 0.0 | 98.7 | 0.0 | 98.4 | 98.1 | 96.6 | 0.0 | 0.0 | 97.1 | 100.0 | 94.8 | 95.4 | 100.0 | 95.7 | 0.0 | 96.2 | 86.0 | 100.0 | 95.5 | 96.9 |
| Exiting Leg Total | | | | | 253 | | | | | 1287 | | | | | 1 | | | | | 504 | 2045 |
| Heavy Vehicles | 4 | 0 | 6 | 0 | 10 | 2 | 9 | 0 | 0 | 11 | 0 | 3 | 4 | 0 | 7 | 0 | 22 | 4 | 0 | 26 | 54 |
| % Heavy Vehicles | 3.5 | 0.0 | 1.0 | 0.0 | 1.4 | 1.3 | 2.8 | 0.0 | 0.0 | 2.3 | 0.0 | 5.2 | 4.6 | 0.0 | 4.3 | 0.0 | 3.2 | 8.0 | 0.0 | 3.5 | 2.6 |
| Exiting Leg Total | | | | | 9 | | | | | 28 | | | | | 0 | | | | | 17 | 54 |
| Buses | 0 | 0 | 2 | 0 | 2 | 1 | 2 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 3 | 0 | 7 | 12 |
| % Buses | 0.0 | 0.0 | 0.3 | 0.0 | 0.3 | 0.6 | 0.6 | 0.0 | 0.0 | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | 6.0 | 0.0 | 1.0 | 0.6 |
| Exiting Leg Total | | | | | 4 | | | | | 6 | | | | | 0 | | | | | 2 | 12 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:00 PM | Pappas Way | | | | | East 1st Street | | | | | West 1st Street | | | | | West 1st Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | Southeast | | | | | Northwest | | | | | |
| | Hard Righ | Bear Left | Left | U-Turn | Total | Right | Bear Righ | Hard Left | U-Turn | Total | Hard Righ | Bear Righ | Thru | U-Turn | Total | Thru | Bear Left | Hard Left | U-Turn | Total | Total |
| 4:00 PM | 12 | 0 | 88 | 0 | 100 | 16 | 42 | 0 | 0 | 58 | 5 | 3 | 16 | 1 | 25 | 0 | 78 | 4 | 0 | 82 | 265 |
| 4:15 PM | 12 | 0 | 70 | 0 | 82 | 24 | 33 | 0 | 0 | 57 | 0 | 10 | 12 | 0 | 22 | 0 | 87 | 4 | 0 | 91 | 252 |
| 4:30 PM | 19 | 0 | 67 | 0 | 86 | 26 | 41 | 0 | 0 | 67 | 1 | 3 | 15 | 0 | 19 | 0 | 68 | 5 | 1 | 74 | 246 |
| 4:45 PM | 12 | 0 | 66 | 0 | 78 | 13 | 49 | 0 | 0 | 62 | 2 | 7 | 8 | 0 | 17 | 0 | 81 | 12 | 0 | 93 | 250 |
| Total Volume | 55 | 0 | 291 | 0 | 346 | 79 | 165 | 0 | 0 | 244 | 8 | 23 | 51 | 1 | 83 | 0 | 314 | 25 | 1 | 340 | 1013 |
| % Approach Total | 15.9 | 0.0 | 84.1 | 0.0 | | 32.4 | 67.6 | 0.0 | 0.0 | | 9.6 | 27.7 | 61.4 | 1.2 | | 0.0 | 92.4 | 7.4 | 0.3 | | |
| PHF | 0.724 | 0.000 | 0.827 | 0.000 | 0.865 | 0.760 | 0.842 | 0.000 | 0.000 | 0.910 | 0.400 | 0.575 | 0.797 | 0.250 | 0.830 | 0.000 | 0.902 | 0.521 | 0.250 | 0.914 | 0.956 |
| Cars | 53 | 0 | 284 | 0 | 337 | 78 | 159 | 0 | 0 | 237 | 8 | 23 | 48 | 1 | 80 | 0 | 299 | 21 | 1 | 321 | 975 |
| Cars % | 96.4 | 0.0 | 97.6 | 0.0 | 97.4 | 98.7 | 96.4 | 0.0 | 0.0 | 97.1 | 100.0 | 100.0 | 94.1 | 100.0 | 96.4 | 0.0 | 95.2 | 84.0 | 100.0 | 94.4 | 96.2 |
| Heavy Vehicles | 2 | 0 | 5 | 0 | 7 | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 3 | 0 | 3 | 0 | 12 | 3 | 0 | 15 | 31 |
| Heavy Vehicles % | 3.6 | 0.0 | 1.7 | 0.0 | 2.0 | 0.0 | 3.6 | 0.0 | 0.0 | 2.5 | 0.0 | 0.0 | 5.9 | 0.0 | 3.6 | 0.0 | 3.8 | 12.0 | 0.0 | 4.4 | 3.1 |
| Buses | 0 | 0 | 2 | 0 | 2 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 4 | 7 |
| Buses % | 0.0 | 0.0 | 0.7 | 0.0 | 0.6 | 1.3 | 0.0 | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 4.0 | 0.0 | 1.2 | 0.7 |
| Cars Enter Leg | 53 | 0 | 284 | 0 | 337 | 78 | 159 | 0 | 0 | 237 | 8 | 23 | 48 | 1 | 80 | 0 | 299 | 21 | 1 | 321 | 975 |
| Heavy Enter Leg | 2 | 0 | 5 | 0 | 7 | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 3 | 0 | 3 | 0 | 12 | 3 | 0 | 15 | 31 |
| Bus Enter Leg | 0 | 0 | 2 | 0 | 2 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 4 | 7 |
| Total Entering Leg | 55 | 0 | 291 | 0 | 346 | 79 | 165 | 0 | 0 | 244 | 8 | 23 | 51 | 1 | 83 | 0 | 314 | 25 | 1 | 340 | 1013 |
| Cars Exiting Leg | | | | | 122 | | | | | 591 | | | | | 1 | | | | | 261 | 975 |
| Heavy Exiting Leg | | | | | 3 | | | | | 17 | | | | | 0 | | | | | 11 | 31 |
| Buses Exiting Leg | | | | | 2 | | | | | 5 | | | | | 0 | | | | | 0 | 7 |
| Total Exiting Leg | | | | | 127 | | | | | 613 | | | | | 1 | | | | | 272 | 1013 |

PDI File #: **175708 LL**
Location: **N: Pappas Way NW: West 1st Street**
Location: **E: East 1st Street SE: West 1st Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Cars

| | Pappas Way | | | | | East 1st Street | | | | | West 1st Street | | | | | West 1st Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | Southeast | | | | | Northwest | | | | | |
| | Hard Righ | Bear Left | Left | U-Turn | Total | Right | Bear Righ | Hard Left | U-Turn | Total | Hard Righ | Bear Righ | Thru | U-Turn | Total | Thru | Bear Left | Hard Left | U-Turn | Total | Total |
| 4:00 PM | 12 | 0 | 84 | 0 | 96 | 16 | 41 | 0 | 0 | 57 | 5 | 3 | 16 | 1 | 25 | 0 | 74 | 4 | 0 | 78 | 256 |
| 4:15 PM | 11 | 0 | 68 | 0 | 79 | 23 | 31 | 0 | 0 | 54 | 0 | 10 | 10 | 0 | 20 | 0 | 80 | 4 | 0 | 84 | 237 |
| 4:30 PM | 18 | 0 | 67 | 0 | 85 | 26 | 40 | 0 | 0 | 66 | 1 | 3 | 14 | 0 | 18 | 0 | 67 | 4 | 1 | 72 | 241 |
| 4:45 PM | 12 | 0 | 65 | 0 | 77 | 13 | 47 | 0 | 0 | 60 | 2 | 7 | 8 | 0 | 17 | 0 | 78 | 9 | 0 | 87 | 241 |
| Total | 53 | 0 | 284 | 0 | 337 | 78 | 159 | 0 | 0 | 237 | 8 | 23 | 48 | 1 | 80 | 0 | 299 | 21 | 1 | 321 | 975 |
| 5:00 PM | 17 | 0 | 86 | 0 | 103 | 19 | 31 | 0 | 0 | 50 | 3 | 7 | 11 | 0 | 21 | 0 | 98 | 3 | 0 | 101 | 275 |
| 5:15 PM | 16 | 0 | 77 | 0 | 93 | 22 | 41 | 0 | 0 | 63 | 3 | 8 | 3 | 0 | 14 | 0 | 84 | 8 | 0 | 92 | 262 |
| 5:30 PM | 10 | 0 | 78 | 0 | 88 | 21 | 36 | 0 | 0 | 57 | 0 | 8 | 12 | 0 | 20 | 0 | 77 | 3 | 0 | 80 | 245 |
| 5:45 PM | 15 | 0 | 87 | 0 | 102 | 15 | 42 | 0 | 0 | 57 | 3 | 9 | 9 | 0 | 21 | 0 | 100 | 8 | 0 | 108 | 288 |
| Total | 58 | 0 | 328 | 0 | 386 | 77 | 150 | 0 | 0 | 227 | 9 | 32 | 35 | 0 | 76 | 0 | 359 | 22 | 0 | 381 | 1070 |
| Grand Total | 111 | 0 | 612 | 0 | 723 | 155 | 309 | 0 | 0 | 464 | 17 | 55 | 83 | 1 | 156 | 0 | 658 | 43 | 1 | 702 | 2045 |
| Approach % | 15.4 | 0.0 | 84.6 | 0.0 | | 33.4 | 66.6 | 0.0 | 0.0 | | 10.9 | 35.3 | 53.2 | 0.6 | | 0.0 | 93.7 | 6.1 | 0.1 | | |
| Total % | 5.4 | 0.0 | 29.9 | 0.0 | 35.4 | 7.6 | 15.1 | 0.0 | 0.0 | 22.7 | 0.8 | 2.7 | 4.1 | 0.0 | 7.6 | 0.0 | 32.2 | 2.1 | 0.0 | 34.3 | |
| Exiting Leg Total | | | | | 253 | | | | | 1287 | | | | | 1 | | | | | 504 | 2045 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 5:00 PM | Pappas Way | | | | | East 1st Street | | | | | West 1st Street | | | | | West 1st Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | Southeast | | | | | Northwest | | | | | |
| | Hard Righ | Bear Left | Left | U-Turn | Total | Right | Bear Righ | Hard Left | U-Turn | Total | Hard Righ | Bear Righ | Thru | U-Turn | Total | Thru | Bear Left | Hard Left | U-Turn | Total | Total |
| 5:00 PM | 17 | 0 | 86 | 0 | 103 | 19 | 31 | 0 | 0 | 50 | 3 | 7 | 11 | 0 | 21 | 0 | 98 | 3 | 0 | 101 | 275 |
| 5:15 PM | 16 | 0 | 77 | 0 | 93 | 22 | 41 | 0 | 0 | 63 | 3 | 8 | 3 | 0 | 14 | 0 | 84 | 8 | 0 | 92 | 262 |
| 5:30 PM | 10 | 0 | 78 | 0 | 88 | 21 | 36 | 0 | 0 | 57 | 0 | 8 | 12 | 0 | 20 | 0 | 77 | 3 | 0 | 80 | 245 |
| 5:45 PM | 15 | 0 | 87 | 0 | 102 | 15 | 42 | 0 | 0 | 57 | 3 | 9 | 9 | 0 | 21 | 0 | 100 | 8 | 0 | 108 | 288 |
| Total Volume | 58 | 0 | 328 | 0 | 386 | 77 | 150 | 0 | 0 | 227 | 9 | 32 | 35 | 0 | 76 | 0 | 359 | 22 | 0 | 381 | 1070 |
| % Approach Total | 15.0 | 0.0 | 85.0 | 0.0 | | 33.9 | 66.1 | 0.0 | 0.0 | | 11.8 | 42.1 | 46.1 | 0.0 | | 0.0 | 94.2 | 5.8 | 0.0 | | |
| PHF | 0.853 | 0.000 | 0.943 | 0.000 | 0.937 | 0.875 | 0.893 | 0.000 | 0.000 | 0.901 | 0.750 | 0.889 | 0.729 | 0.000 | 0.905 | 0.000 | 0.898 | 0.688 | 0.000 | 0.882 | 0.929 |
| Entering Leg | 58 | 0 | 328 | 0 | 386 | 77 | 150 | 0 | 0 | 227 | 9 | 32 | 35 | 0 | 76 | 0 | 359 | 22 | 0 | 381 | 1070 |
| Exiting Leg | | | | | 131 | | | | | 696 | | | | | 0 | | | | | 243 | 1070 |
| Total | | | | | 517 | | | | | 923 | | | | | 76 | | | | | 624 | 2140 |

PDI File #: **175708 LL**
Location: **N: Pappas Way NW: West 1st Street**
Location: **E: East 1st Street SE: West 1st Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Heavy Vehicles

| | Pappas Way | | | | | East 1st Street | | | | | West 1st Street | | | | | West 1st Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | Southeast | | | | | Northwest | | | | | |
| | Hard Right | Bear Left | Left | U-Turn | Total | Right | Bear Right | Hard Left | U-Turn | Total | Hard Right | Bear Right | Thru | U-Turn | Total | Thru | Bear Left | Hard Left | U-Turn | Total | Total |
| 4:00 PM | 0 | 0 | 3 | 0 | 3 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 8 |
| 4:15 PM | 1 | 0 | 1 | 0 | 2 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 2 | 0 | 5 | 0 | 0 | 5 | 11 |
| 4:30 PM | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 |
| 4:45 PM | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 6 | 9 |
| Total | 2 | 0 | 5 | 0 | 7 | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 3 | 0 | 3 | 0 | 12 | 3 | 0 | 15 | 31 |
| 5:00 PM | 1 | 0 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 7 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 2 |
| 5:30 PM | 1 | 0 | 0 | 0 | 1 | 2 | 1 | 0 | 0 | 3 | 0 | 1 | 1 | 0 | 2 | 0 | 3 | 0 | 0 | 3 | 9 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 2 | 5 |
| Total | 2 | 0 | 1 | 0 | 3 | 2 | 3 | 0 | 0 | 5 | 0 | 3 | 1 | 0 | 4 | 0 | 10 | 1 | 0 | 11 | 23 |
| Grand Total | 4 | 0 | 6 | 0 | 10 | 2 | 9 | 0 | 0 | 11 | 0 | 3 | 4 | 0 | 7 | 0 | 22 | 4 | 0 | 26 | 54 |
| Approach % | 40.0 | 0.0 | 60.0 | 0.0 | | 18.2 | 81.8 | 0.0 | 0.0 | | 0.0 | 42.9 | 57.1 | 0.0 | | 0.0 | 84.6 | 15.4 | 0.0 | | |
| Total % | 7.4 | 0.0 | 11.1 | 0.0 | 18.5 | 3.7 | 16.7 | 0.0 | 0.0 | 20.4 | 0.0 | 5.6 | 7.4 | 0.0 | 13.0 | 0.0 | 40.7 | 7.4 | 0.0 | 48.1 | |
| Exiting Leg Total | | | | | 9 | | | | | 28 | | | | | 0 | | | | | 17 | 54 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:00 PM | Pappas Way | | | | | East 1st Street | | | | | West 1st Street | | | | | West 1st Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | Southeast | | | | | Northwest | | | | | |
| | Hard Right | Bear Left | Left | U-Turn | Total | Right | Bear Right | Hard Left | U-Turn | Total | Hard Right | Bear Right | Thru | U-Turn | Total | Thru | Bear Left | Hard Left | U-Turn | Total | Total |
| 4:00 PM | 0 | 0 | 3 | 0 | 3 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 8 |
| 4:15 PM | 1 | 0 | 1 | 0 | 2 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 2 | 0 | 5 | 0 | 0 | 5 | 11 |
| 4:30 PM | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 |
| 4:45 PM | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 6 | 9 |
| Total Volume | 2 | 0 | 5 | 0 | 7 | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 3 | 0 | 3 | 0 | 12 | 3 | 0 | 15 | 31 |
| % Approach Total | 28.6 | 0.0 | 71.4 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 100.0 | 0.0 | | 0.0 | 80.0 | 20.0 | 0.0 | | |
| PHF | 0.500 | 0.000 | 0.417 | 0.000 | 0.583 | 0.000 | 0.750 | 0.000 | 0.000 | 0.750 | 0.000 | 0.000 | 0.375 | 0.000 | 0.375 | 0.000 | 0.600 | 0.250 | 0.000 | 0.625 | 0.705 |
| Entering Leg | 2 | 0 | 5 | 0 | 7 | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 3 | 0 | 3 | 0 | 12 | 3 | 0 | 15 | 31 |
| Exiting Leg | | | | | 3 | | | | | 17 | | | | | 0 | | | | | 11 | 31 |
| Total | | | | | 10 | | | | | 23 | | | | | 3 | | | | | 26 | 62 |

PDI File #: **175708 LL**
Location: **N: Pappas Way NW: West 1st Street**
Location: **E: East 1st Street SE: West 1st Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Buses

| | Pappas Way | | | | | East 1st Street | | | | | West 1st Street | | | | | West 1st Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | Southeast | | | | | Northwest | | | | | |
| | Hard Right | Bear Left | Left | U-Turn | Total | Right | Bear Right | Hard Left | U-Turn | Total | Hard Right | Bear Right | Thru | U-Turn | Total | Thru | Bear Left | Hard Left | U-Turn | Total | Total |
| 4:00 PM | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 4:15 PM | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 4 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 2 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 2 | 0 | 2 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 4 | 7 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 3 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 3 | 5 |
| Grand Total | 0 | 0 | 2 | 0 | 2 | 1 | 2 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 3 | 0 | 7 | 12 |
| Approach % | 0.0 | 0.0 | 100.0 | 0.0 | | 33.3 | 66.7 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 57.1 | 42.9 | 0.0 | | |
| Total % | 0.0 | 0.0 | 16.7 | 0.0 | 16.7 | 8.3 | 16.7 | 0.0 | 0.0 | 25.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 33.3 | 25.0 | 0.0 | 58.3 | |
| Exiting Leg Total | | | | | 4 | | | | | 6 | | | | | 0 | | | | | 2 | 12 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:00 PM | Pappas Way | | | | | East 1st Street | | | | | West 1st Street | | | | | West 1st Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | East | | | | | Southeast | | | | | Northwest | | | | | |
| | Hard Right | Bear Left | Left | U-Turn | Total | Right | Bear Right | Hard Left | U-Turn | Total | Hard Right | Bear Right | Thru | U-Turn | Total | Thru | Bear Left | Hard Left | U-Turn | Total | Total |
| 4:00 PM | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 4:15 PM | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 4 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 2 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 2 | 0 | 2 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 4 | 7 |
| % Approach Total | 0.0 | 0.0 | 100.0 | 0.0 | | 100.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 75.0 | 25.0 | 0.0 | | |
| PHF | 0.000 | 0.000 | 0.500 | 0.000 | 0.500 | 0.250 | 0.000 | 0.000 | 0.000 | 0.250 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.375 | 0.250 | 0.000 | 0.500 | 0.438 |
| Entering Leg | 0 | 0 | 2 | 0 | 2 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 4 | 7 |
| Exiting Leg | | | | | 2 | | | | | 5 | | | | | 0 | | | | | 0 | 7 |
| Total | | | | | 4 | | | | | 6 | | | | | 0 | | | | | 4 | 14 |

PDI File #: **175708 LL**
Location: **N: Pappas Way NW: West 1st Street**
Location: **E: East 1st Street SE: West 1st Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Bicycles (on Roadway and Crosswalks)

| | Pappas Way | | | | | | | East 1st Street | | | | | | | West 1st Street | | | | | | | West 1st Street | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | East | | | | | | | Southeast | | | | | | | Northwest | | | | | | | |
| | Hard Right | Bear Left | Left | U-Turn | CW-EB | CW-WB | Total | Right | Bear Right | Hard Left | U-Turn | CW-SB | CW-NB | Total | Hard Right | Bear Right | Thru | U-Turn | CW-SWB | CW-NEB | Total | Thru | Bear Left | Hard Left | U-Turn | CW-NEB | CW-SWB | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 4:15 PM | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 2 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 4:45 PM | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 2 | 5 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 5:15 PM | 1 | 0 | 2 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 6 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 2 |
| 5:45 PM | 0 | 1 | 3 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 6 |
| Total | 1 | 1 | 5 | 0 | 0 | 0 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 3 | 0 | 5 | 0 | 0 | 0 | 0 | 5 | 16 |
| Grand Total | 1 | 1 | 7 | 0 | 0 | 0 | 9 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 3 | 1 | 5 | 1 | 0 | 0 | 0 | 7 | 21 |
| Approach % | 11.1 | 11.1 | 77.8 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 66.7 | 33.3 | 0.0 | 0.0 | 0.0 | 0.0 | | 14.3 | 71.4 | 14.3 | 0.0 | 0.0 | 0.0 | | |
| Total % | 4.8 | 4.8 | 33.3 | 0.0 | 0.0 | 0.0 | 42.9 | 0.0 | 9.5 | 0.0 | 0.0 | 0.0 | 0.0 | 9.5 | 9.5 | 4.8 | 0.0 | 0.0 | 0.0 | 0.0 | 14.3 | 4.8 | 23.8 | 4.8 | 0.0 | 0.0 | 0.0 | 33.3 | |
| Exiting Leg Total | | | | | | | 2 | | | | | | | 14 | | | | | | | 2 | | | | | | | 3 | 21 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:00 PM | Pappas Way | | | | | | | East 1st Street | | | | | | | West 1st Street | | | | | | | West 1st Street | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | East | | | | | | | Southeast | | | | | | | Northwest | | | | | | | |
| | Hard Right | Bear Left | Left | U-Turn | CW-EB | CW-WB | Total | Right | Bear Right | Hard Left | U-Turn | CW-SB | CW-NB | Total | Hard Right | Bear Right | Thru | U-Turn | CW-SWB | CW-NEB | Total | Thru | Bear Left | Hard Left | U-Turn | CW-NEB | CW-SWB | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 4:15 PM | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 2 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 4:45 PM | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total Volume | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 2 | 5 |
| % Approach Total | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 50.0 | 0.0 | 50.0 | 0.0 | 0.0 | 0.0 | | |
| PHF | 0.000 | 0.000 | 0.500 | 0.000 | 0.000 | 0.000 | 0.500 | 0.000 | 0.250 | 0.000 | 0.000 | 0.000 | 0.000 | 0.250 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.250 | 0.000 | 0.250 | 0.000 | 0.000 | 0.000 | 0.500 | 0.625 |
| Entering Leg | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 2 | 5 |
| Exiting Leg | | | | | | | 1 | | | | | | | 2 | | | | | | | 1 | | | | | | | 1 | 5 |
| Total | | | | | | | 3 | | | | | | | 3 | | | | | | | 1 | | | | | | | 3 | 10 |

PDI File #: **175708 LL**
Location: **N: Pappas Way NW: West 1st Street**
Location: **E: East 1st Street SE: West 1st Street**
City, State: **South Boston, MA**
Client: **VHB/ C. Dube**
Site Code: **TBA**
Count Date: **Thursday, June 8, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Pedestrians

| | Pappas Way | | | | | | | East 1st Street | | | | | | | West 1st Street | | | | | | | West 1st Street | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | East | | | | | | | Southeast | | | | | | | Northwest | | | | | | | |
| | Hard Right | Bear Left | Left | U-Turn | CW-EB | CW-WB | Total | Right | Bear Right | Hard Left | U-Turn | CW-SB | CW-NB | Total | Hard Right | Bear Right | Thru | U-Turn | CW-SWB | CW-NEB | Total | Thru | Bear Left | Hard Left | U-Turn | CW-NEB | CW-SWB | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 4 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 5 | 2 | 7 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 8 | 4 | 12 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 18 |
| 5:15 PM | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 5 | 2 | 7 | 0 | 0 | 0 | 0 | 2 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 5 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 3 | 8 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| Total | 0 | 0 | 0 | 0 | 1 | 3 | 4 | 0 | 0 | 0 | 0 | 23 | 9 | 32 | 0 | 0 | 0 | 0 | 5 | 5 | 10 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 47 |
| Grand Total | 0 | 0 | 0 | 0 | 1 | 4 | 5 | 0 | 0 | 0 | 0 | 28 | 11 | 39 | 0 | 0 | 0 | 0 | 6 | 5 | 11 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 56 |
| Approach % | 0.0 | 0.0 | 0.0 | 0.0 | 20.0 | 80.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 71.8 | 28.2 | | 0.0 | 0.0 | 0.0 | 0.0 | 54.5 | 45.5 | | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total % | 0.0 | 0.0 | 0.0 | 0.0 | 1.8 | 7.1 | 8.9 | 0.0 | 0.0 | 0.0 | 0.0 | 50.0 | 19.6 | 69.6 | 0.0 | 0.0 | 0.0 | 0.0 | 10.7 | 8.9 | 19.6 | 0.0 | 1.8 | 0.0 | 0.0 | 0.0 | 0.0 | 1.8 | |
| Exiting Leg Total | | | | | | | 5 | | | | | | | 40 | | | | | | | 11 | | | | | | | 0 | 56 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 5:00 PM | Pappas Way | | | | | | | East 1st Street | | | | | | | West 1st Street | | | | | | | West 1st Street | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | | | | | | | East | | | | | | | Southeast | | | | | | | Northwest | | | | | | | |
| | Hard Right | Bear Left | Left | U-Turn | CW-EB | CW-WB | Total | Right | Bear Right | Hard Left | U-Turn | CW-SB | CW-NB | Total | Hard Right | Bear Right | Thru | U-Turn | CW-SWB | CW-NEB | Total | Thru | Bear Left | Hard Left | U-Turn | CW-NEB | CW-SWB | Total | Total |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 8 | 4 | 12 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 18 |
| 5:15 PM | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 5 | 2 | 7 | 0 | 0 | 0 | 0 | 2 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 5 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 3 | 8 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| Total Volume | 0 | 0 | 0 | 0 | 1 | 3 | 4 | 0 | 0 | 0 | 0 | 23 | 9 | 32 | 0 | 0 | 0 | 0 | 5 | 5 | 10 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 47 |
| % Approach Total | 0.0 | 0.0 | 0.0 | 0.0 | 25.0 | 75.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 71.9 | 28.1 | | 0.0 | 0.0 | 0.0 | 0.0 | 50.0 | 50.0 | | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| PHF | 0.000 | 0.000 | 0.000 | 0.000 | 0.250 | 0.250 | 0.333 | 0.000 | 0.000 | 0.000 | 0.000 | 0.719 | 0.563 | 0.667 | 0.000 | 0.000 | 0.000 | 0.000 | 0.625 | 0.625 | 0.625 | 0.000 | 0.250 | 0.000 | 0.000 | 0.000 | 0.000 | 0.250 | 0.653 |
| Entering Leg | 0 | 0 | 0 | 0 | 1 | 3 | 4 | 0 | 0 | 0 | 0 | 23 | 9 | 32 | 0 | 0 | 0 | 0 | 5 | 5 | 10 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 47 |
| Exiting Leg | | | | | | | 4 | | | | | | | 33 | | | | | | | 10 | | | | | | | 0 | 47 |
| Total | | | | | | | 8 | | | | | | | 65 | | | | | | | 20 | | | | | | | 1 | 94 |

PDI File #: **186316 A**
Location: **N: Summer Street S: Summer Street**
Location: **E: Massport Freight Cor W: FedEx Driveway**
City, State: **Boston, MA**
Client: **VHB/ S. Mandzo**
Site Code: **12:00 AM**
Count Date: **Monday, June 11, 2018**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Cars and Heavy Vehicles (Combined)

| | Summer Street from North | | | | | Massport Freight Cor from East | | | | | Summer Street from South | | | | | FedEx Driveway from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 2 | 83 | 14 | 0 | 99 | 3 | 0 | 2 | 0 | 5 | 11 | 251 | 0 | 0 | 262 | 0 | 0 | 1 | 0 | 1 | 367 |
| 7:15 AM | 0 | 95 | 16 | 0 | 111 | 4 | 0 | 1 | 0 | 5 | 3 | 281 | 0 | 0 | 284 | 0 | 0 | 0 | 0 | 0 | 400 |
| 7:30 AM | 1 | 123 | 16 | 0 | 140 | 7 | 1 | 2 | 0 | 10 | 3 | 328 | 0 | 0 | 331 | 0 | 0 | 3 | 0 | 3 | 484 |
| 7:45 AM | 0 | 110 | 12 | 0 | 122 | 10 | 0 | 1 | 0 | 11 | 4 | 286 | 1 | 0 | 291 | 1 | 1 | 7 | 0 | 9 | 433 |
| Total | 3 | 411 | 58 | 0 | 472 | 24 | 1 | 6 | 0 | 31 | 21 | 1146 | 1 | 0 | 1168 | 1 | 1 | 11 | 0 | 13 | 1684 |
| 8:00 AM | 2 | 142 | 17 | 0 | 161 | 17 | 0 | 4 | 0 | 21 | 4 | 265 | 0 | 0 | 269 | 1 | 0 | 11 | 0 | 12 | 463 |
| 8:15 AM | 3 | 120 | 5 | 0 | 128 | 16 | 0 | 5 | 0 | 21 | 4 | 248 | 1 | 0 | 253 | 0 | 0 | 4 | 0 | 4 | 406 |
| 8:30 AM | 2 | 104 | 5 | 0 | 111 | 11 | 0 | 1 | 0 | 12 | 1 | 216 | 1 | 0 | 218 | 3 | 0 | 2 | 0 | 5 | 346 |
| 8:45 AM | 1 | 122 | 7 | 0 | 130 | 10 | 0 | 1 | 0 | 11 | 4 | 221 | 2 | 0 | 227 | 0 | 0 | 2 | 0 | 2 | 370 |
| Total | 8 | 488 | 34 | 0 | 530 | 54 | 0 | 11 | 0 | 65 | 13 | 950 | 4 | 0 | 967 | 4 | 0 | 19 | 0 | 23 | 1585 |
| Grand Total | 11 | 899 | 92 | 0 | 1002 | 78 | 1 | 17 | 0 | 96 | 34 | 2096 | 5 | 0 | 2135 | 5 | 1 | 30 | 0 | 36 | 3269 |
| Approach % | 1.1 | 89.7 | 9.2 | 0.0 | | 81.3 | 1.0 | 17.7 | 0.0 | | 1.6 | 98.2 | 0.2 | 0.0 | | 13.9 | 2.8 | 83.3 | 0.0 | | |
| Total % | 0.3 | 27.5 | 2.8 | 0.0 | 30.7 | 2.4 | 0.0 | 0.5 | 0.0 | 2.9 | 1.0 | 64.1 | 0.2 | 0.0 | 65.3 | 0.2 | 0.0 | 0.9 | 0.0 | 1.1 | |
| Exiting Leg Total | | | | | 2204 | | | | | 127 | | | | | 921 | | | | | 17 | 3269 |
| Cars | 11 | 832 | 35 | 0 | 878 | 20 | 1 | 12 | 0 | 33 | 30 | 2006 | 5 | 0 | 2041 | 4 | 1 | 22 | 0 | 27 | 2979 |
| % Cars | 100.0 | 92.5 | 38.0 | 0.0 | 87.6 | 25.6 | 100.0 | 70.6 | 0.0 | 34.4 | 88.2 | 95.7 | 100.0 | 0.0 | 95.6 | 80.0 | 100.0 | 73.3 | 0.0 | 75.0 | 91.1 |
| Exiting Leg Total | | | | | 2048 | | | | | 66 | | | | | 848 | | | | | 17 | 2979 |
| Heavy Vehicles | 0 | 67 | 57 | 0 | 124 | 58 | 0 | 5 | 0 | 63 | 4 | 90 | 0 | 0 | 94 | 1 | 0 | 8 | 0 | 9 | 290 |
| % Heavy Vehicles | 0.0 | 7.5 | 62.0 | 0.0 | 12.4 | 74.4 | 0.0 | 29.4 | 0.0 | 65.6 | 11.8 | 4.3 | 0.0 | 0.0 | 4.4 | 20.0 | 0.0 | 26.7 | 0.0 | 25.0 | 8.9 |
| Exiting Leg Total | | | | | 156 | | | | | 61 | | | | | 73 | | | | | 0 | 290 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:30 AM | Summer Street from North | | | | | Massport Freight Cor from East | | | | | Summer Street from South | | | | | FedEx Driveway from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:30 AM | 1 | 123 | 16 | 0 | 140 | 7 | 1 | 2 | 0 | 10 | 3 | 328 | 0 | 0 | 331 | 0 | 0 | 3 | 0 | 3 | 484 |
| 7:45 AM | 0 | 110 | 12 | 0 | 122 | 10 | 0 | 1 | 0 | 11 | 4 | 286 | 1 | 0 | 291 | 1 | 1 | 7 | 0 | 9 | 433 |
| 8:00 AM | 2 | 142 | 17 | 0 | 161 | 17 | 0 | 4 | 0 | 21 | 4 | 265 | 0 | 0 | 269 | 1 | 0 | 11 | 0 | 12 | 463 |
| 8:15 AM | 3 | 120 | 5 | 0 | 128 | 16 | 0 | 5 | 0 | 21 | 4 | 248 | 1 | 0 | 253 | 0 | 0 | 4 | 0 | 4 | 406 |
| Total Volume | 6 | 495 | 50 | 0 | 551 | 50 | 1 | 12 | 0 | 63 | 15 | 1127 | 2 | 0 | 1144 | 2 | 1 | 25 | 0 | 28 | 1786 |
| % Approach Total | 1.1 | 89.8 | 9.1 | 0.0 | | 79.4 | 1.6 | 19.0 | 0.0 | | 1.3 | 98.5 | 0.2 | 0.0 | | 7.1 | 3.6 | 89.3 | 0.0 | | |
| PHF | 0.500 | 0.871 | 0.735 | 0.000 | 0.856 | 0.735 | 0.250 | 0.600 | 0.000 | 0.750 | 0.938 | 0.859 | 0.500 | 0.000 | 0.864 | 0.500 | 0.250 | 0.568 | 0.000 | 0.583 | 0.923 |
| Cars | 6 | 460 | 23 | 0 | 489 | 10 | 1 | 9 | 0 | 20 | 12 | 1070 | 2 | 0 | 1084 | 2 | 1 | 17 | 0 | 20 | 1613 |
| Cars % | 100.0 | 92.9 | 46.0 | 0.0 | 88.7 | 20.0 | 100.0 | 75.0 | 0.0 | 31.7 | 80.0 | 94.9 | 100.0 | 0.0 | 94.8 | 100.0 | 100.0 | 68.0 | 0.0 | 71.4 | 90.3 |
| Heavy Vehicles | 0 | 35 | 27 | 0 | 62 | 40 | 0 | 3 | 0 | 43 | 3 | 57 | 0 | 0 | 60 | 0 | 0 | 8 | 0 | 8 | 173 |
| Heavy Vehicles % | 0.0 | 7.1 | 54.0 | 0.0 | 11.3 | 80.0 | 0.0 | 25.0 | 0.0 | 68.3 | 20.0 | 5.1 | 0.0 | 0.0 | 5.2 | 0.0 | 0.0 | 32.0 | 0.0 | 28.6 | 9.7 |
| Cars Enter Leg | 6 | 460 | 23 | 0 | 489 | 10 | 1 | 9 | 0 | 20 | 12 | 1070 | 2 | 0 | 1084 | 2 | 1 | 17 | 0 | 20 | 1613 |
| Heavy Enter Leg | 0 | 35 | 27 | 0 | 62 | 40 | 0 | 3 | 0 | 43 | 3 | 57 | 0 | 0 | 60 | 0 | 0 | 8 | 0 | 8 | 173 |
| Total Entering Leg | 6 | 495 | 50 | 0 | 551 | 50 | 1 | 12 | 0 | 63 | 15 | 1127 | 2 | 0 | 1144 | 2 | 1 | 25 | 0 | 28 | 1786 |
| Cars Exiting Leg | | | | | 1097 | | | | | 36 | | | | | 471 | | | | | 9 | 1613 |
| Heavy Exiting Leg | | | | | 105 | | | | | 30 | | | | | 38 | | | | | 0 | 173 |
| Total Exiting Leg | | | | | 1202 | | | | | 66 | | | | | 509 | | | | | 9 | 1786 |

PDI File #: **186316 A**
Location: **N: Summer Street S: Summer Street**
Location: **E: Massport Freight Cor W: FedEx Driveway**
City, State: **Boston, MA**
Client: **VHB/ S. Mandzo**
Site Code: **12:00 AM**
Count Date: **Monday, June 11, 2018**
Start Time: **7:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Class:

## Cars-Combined (Motorcycles, Cars, Light Goods)

| | Summer Street | | | | | Massport Freight Cor | | | | | Summer Street | | | | | FedEx Driveway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 2 | 78 | 2 | 0 | 82 | 3 | 0 | 1 | 0 | 4 | 11 | 244 | 0 | 0 | 255 | 0 | 0 | 1 | 0 | 1 | 342 |
| 7:15 AM | 0 | 83 | 8 | 0 | 91 | 4 | 0 | 1 | 0 | 5 | 3 | 272 | 0 | 0 | 275 | 0 | 0 | 0 | 0 | 0 | 371 |
| 7:30 AM | 1 | 115 | 6 | 0 | 122 | 4 | 1 | 1 | 0 | 6 | 2 | 319 | 0 | 0 | 321 | 0 | 0 | 3 | 0 | 3 | 452 |
| 7:45 AM | 0 | 102 | 3 | 0 | 105 | 2 | 0 | 0 | 0 | 2 | 4 | 265 | 1 | 0 | 270 | 1 | 1 | 2 | 0 | 4 | 381 |
| Total | 3 | 378 | 19 | 0 | 400 | 13 | 1 | 3 | 0 | 17 | 20 | 1100 | 1 | 0 | 1121 | 1 | 1 | 6 | 0 | 8 | 1546 |
| 8:00 AM | 2 | 133 | 12 | 0 | 147 | 0 | 0 | 3 | 0 | 3 | 3 | 249 | 0 | 0 | 252 | 1 | 0 | 8 | 0 | 9 | 411 |
| 8:15 AM | 3 | 110 | 2 | 0 | 115 | 4 | 0 | 5 | 0 | 9 | 3 | 237 | 1 | 0 | 241 | 0 | 0 | 4 | 0 | 4 | 369 |
| 8:30 AM | 2 | 97 | 0 | 0 | 99 | 2 | 0 | 1 | 0 | 3 | 1 | 207 | 1 | 0 | 209 | 2 | 0 | 2 | 0 | 4 | 315 |
| 8:45 AM | 1 | 114 | 2 | 0 | 117 | 1 | 0 | 0 | 0 | 1 | 3 | 213 | 2 | 0 | 218 | 0 | 0 | 2 | 0 | 2 | 338 |
| Total | 8 | 454 | 16 | 0 | 478 | 7 | 0 | 9 | 0 | 16 | 10 | 906 | 4 | 0 | 920 | 3 | 0 | 16 | 0 | 19 | 1433 |
| Grand Total | 11 | 832 | 35 | 0 | 878 | 20 | 1 | 12 | 0 | 33 | 30 | 2006 | 5 | 0 | 2041 | 4 | 1 | 22 | 0 | 27 | 2979 |
| Approach % | 1.3 | 94.8 | 4.0 | 0.0 | | 60.6 | 3.0 | 36.4 | 0.0 | | 1.5 | 98.3 | 0.2 | 0.0 | | 14.8 | 3.7 | 81.5 | 0.0 | | |
| Total % | 0.4 | 27.9 | 1.2 | 0.0 | 29.5 | 0.7 | 0.0 | 0.4 | 0.0 | 1.1 | 1.0 | 67.3 | 0.2 | 0.0 | 68.5 | 0.1 | 0.0 | 0.7 | 0.0 | 0.9 | |
| Exiting Leg Total | | | | | 2048 | | | | | 66 | | | | | 848 | | | | | 17 | 2979 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:15 AM | Summer Street | | | | | Massport Freight Cor | | | | | Summer Street | | | | | FedEx Driveway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:15 AM | 0 | 83 | 8 | 0 | 91 | 4 | 0 | 1 | 0 | 5 | 3 | 272 | 0 | 0 | 275 | 0 | 0 | 0 | 0 | 0 | 371 |
| 7:30 AM | 1 | 115 | 6 | 0 | 122 | 4 | 1 | 1 | 0 | 6 | 2 | 319 | 0 | 0 | 321 | 0 | 0 | 3 | 0 | 3 | 452 |
| 7:45 AM | 0 | 102 | 3 | 0 | 105 | 2 | 0 | 0 | 0 | 2 | 4 | 265 | 1 | 0 | 270 | 1 | 1 | 2 | 0 | 4 | 381 |
| 8:00 AM | 2 | 133 | 12 | 0 | 147 | 0 | 0 | 3 | 0 | 3 | 3 | 249 | 0 | 0 | 252 | 1 | 0 | 8 | 0 | 9 | 411 |
| Total Volume | 3 | 433 | 29 | 0 | 465 | 10 | 1 | 5 | 0 | 16 | 12 | 1105 | 1 | 0 | 1118 | 2 | 1 | 13 | 0 | 16 | 1615 |
| % Approach Total | 0.6 | 93.1 | 6.2 | 0.0 | | 62.5 | 6.3 | 31.3 | 0.0 | | 1.1 | 98.8 | 0.1 | 0.0 | | 12.5 | 6.3 | 81.3 | 0.0 | | |
| PHF | 0.375 | 0.814 | 0.604 | 0.000 | 0.791 | 0.625 | 0.250 | 0.417 | 0.000 | 0.667 | 0.750 | 0.866 | 0.250 | 0.000 | 0.871 | 0.500 | 0.250 | 0.406 | 0.000 | 0.444 | 0.893 |
| Entering Leg | 3 | 433 | 29 | 0 | 465 | 10 | 1 | 5 | 0 | 16 | 12 | 1105 | 1 | 0 | 1118 | 2 | 1 | 13 | 0 | 16 | 1615 |
| Exiting Leg | | | | | 1128 | | | | | 42 | | | | | 440 | | | | | 5 | 1615 |
| Total | | | | | 1593 | | | | | 58 | | | | | 1558 | | | | | 21 | 3230 |

PDI File #: **186316 A**
Location: **N: Summer Street S: Summer Street**
Location: **E: Massport Freight Cor W: FedEx Driveway**
City, State: **Boston, MA**
Client: **VHB/ S. Mandzo**
Site Code: **12:00 AM**
Count Date: **Monday, June 11, 2018**
Start Time: **7:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

| | Summer Street from North | | | | | Massport Freight Cor from East | | | | | Summer Street from South | | | | | FedEx Driveway from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 5 | 12 | 0 | 17 | 0 | 0 | 1 | 0 | 1 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 25 |
| 7:15 AM | 0 | 12 | 8 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 29 |
| 7:30 AM | 0 | 8 | 10 | 0 | 18 | 3 | 0 | 1 | 0 | 4 | 1 | 9 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 32 |
| 7:45 AM | 0 | 8 | 9 | 0 | 17 | 8 | 0 | 1 | 0 | 9 | 0 | 21 | 0 | 0 | 21 | 0 | 0 | 5 | 0 | 5 | 52 |
| Total | 0 | 33 | 39 | 0 | 72 | 11 | 0 | 3 | 0 | 14 | 1 | 46 | 0 | 0 | 47 | 0 | 0 | 5 | 0 | 5 | 138 |
| 8:00 AM | 0 | 9 | 5 | 0 | 14 | 17 | 0 | 1 | 0 | 18 | 1 | 16 | 0 | 0 | 17 | 0 | 0 | 3 | 0 | 3 | 52 |
| 8:15 AM | 0 | 10 | 3 | 0 | 13 | 12 | 0 | 0 | 0 | 12 | 1 | 11 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 37 |
| 8:30 AM | 0 | 7 | 5 | 0 | 12 | 9 | 0 | 0 | 0 | 9 | 0 | 9 | 0 | 0 | 9 | 1 | 0 | 0 | 0 | 1 | 31 |
| 8:45 AM | 0 | 8 | 5 | 0 | 13 | 9 | 0 | 1 | 0 | 10 | 1 | 8 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 32 |
| Total | 0 | 34 | 18 | 0 | 52 | 47 | 0 | 2 | 0 | 49 | 3 | 44 | 0 | 0 | 47 | 1 | 0 | 3 | 0 | 4 | 152 |
| Grand Total | 0 | 67 | 57 | 0 | 124 | 58 | 0 | 5 | 0 | 63 | 4 | 90 | 0 | 0 | 94 | 1 | 0 | 8 | 0 | 9 | 290 |
| Approach % | 0.0 | 54.0 | 46.0 | 0.0 | | 92.1 | 0.0 | 7.9 | 0.0 | | 4.3 | 95.7 | 0.0 | 0.0 | | 11.1 | 0.0 | 88.9 | 0.0 | | |
| Total % | 0.0 | 23.1 | 19.7 | 0.0 | 42.8 | 20.0 | 0.0 | 1.7 | 0.0 | 21.7 | 1.4 | 31.0 | 0.0 | 0.0 | 32.4 | 0.3 | 0.0 | 2.8 | 0.0 | 3.1 | |
| Exiting Leg Total | | | | | 156 | | | | | 61 | | | | | 73 | | | | | 0 | 290 |
| Buses | 0 | 41 | 0 | 0 | 41 | 0 | 0 | 0 | 0 | 0 | 0 | 45 | 0 | 0 | 45 | 0 | 0 | 0 | 0 | 0 | 86 |
| % Buses | 0.0 | 61.2 | 0.0 | 0.0 | 33.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 50.0 | 0.0 | 0.0 | 47.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 29.7 |
| Exiting Leg Total | | | | | 45 | | | | | 0 | | | | | 41 | | | | | 0 | 86 |
| Single-Unit Trucks | 0 | 22 | 2 | 0 | 24 | 1 | 0 | 5 | 0 | 6 | 4 | 37 | 0 | 0 | 41 | 1 | 0 | 8 | 0 | 9 | 80 |
| % Single-Unit | 0.0 | 32.8 | 3.5 | 0.0 | 19.4 | 1.7 | 0.0 | 100.0 | 0.0 | 9.5 | 100.0 | 41.1 | 0.0 | 0.0 | 43.6 | 100.0 | 0.0 | 100.0 | 0.0 | 100.0 | 27.6 |
| Exiting Leg Total | | | | | 46 | | | | | 6 | | | | | 28 | | | | | 0 | 80 |
| Articulated Trucks | 0 | 4 | 55 | 0 | 59 | 57 | 0 | 0 | 0 | 57 | 0 | 8 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 124 |
| % Articulated | 0.0 | 6.0 | 96.5 | 0.0 | 47.6 | 98.3 | 0.0 | 0.0 | 0.0 | 90.5 | 0.0 | 8.9 | 0.0 | 0.0 | 8.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 42.8 |
| Exiting Leg Total | | | | | 65 | | | | | 55 | | | | | 4 | | | | | 0 | 124 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:30 AM | Summer Street from North | | | | | Massport Freight Cor from East | | | | | Summer Street from South | | | | | FedEx Driveway from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:30 AM | 0 | 8 | 10 | 0 | 18 | 3 | 0 | 1 | 0 | 4 | 1 | 9 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 32 |
| 7:45 AM | 0 | 8 | 9 | 0 | 17 | 8 | 0 | 1 | 0 | 9 | 0 | 21 | 0 | 0 | 21 | 0 | 0 | 5 | 0 | 5 | 52 |
| 8:00 AM | 0 | 9 | 5 | 0 | 14 | 17 | 0 | 1 | 0 | 18 | 1 | 16 | 0 | 0 | 17 | 0 | 0 | 3 | 0 | 3 | 52 |
| 8:15 AM | 0 | 10 | 3 | 0 | 13 | 12 | 0 | 0 | 0 | 12 | 1 | 11 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 37 |
| Total Volume | 0 | 35 | 27 | 0 | 62 | 40 | 0 | 3 | 0 | 43 | 3 | 57 | 0 | 0 | 60 | 0 | 0 | 8 | 0 | 8 | 173 |
| % Approach Total | 0.0 | 56.5 | 43.5 | 0.0 | | 93.0 | 0.0 | 7.0 | 0.0 | | 5.0 | 95.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 100.0 | 0.0 | | |
| PHF | 0.000 | 0.875 | 0.675 | 0.000 | 0.861 | 0.588 | 0.000 | 0.750 | 0.000 | 0.597 | 0.750 | 0.679 | 0.000 | 0.000 | 0.714 | 0.000 | 0.000 | 0.400 | 0.000 | 0.400 | 0.832 |
| Buses | 0 | 22 | 0 | 0 | 22 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 47 |
| Buses % | 0.0 | 62.9 | 0.0 | 0.0 | 35.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 43.9 | 0.0 | 0.0 | 41.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 27.2 |
| Single-Unit Trucks | 0 | 9 | 1 | 0 | 10 | 1 | 0 | 3 | 0 | 4 | 3 | 27 | 0 | 0 | 30 | 0 | 0 | 8 | 0 | 8 | 52 |
| Single-Unit % | 0.0 | 25.7 | 3.7 | 0.0 | 16.1 | 2.5 | 0.0 | 100.0 | 0.0 | 9.3 | 100.0 | 47.4 | 0.0 | 0.0 | 50.0 | 0.0 | 0.0 | 100.0 | 0.0 | 100.0 | 30.1 |
| Articulated Trucks | 0 | 4 | 26 | 0 | 30 | 39 | 0 | 0 | 0 | 39 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 74 |
| Articulated % | 0.0 | 11.4 | 96.3 | 0.0 | 48.4 | 97.5 | 0.0 | 0.0 | 0.0 | 90.7 | 0.0 | 8.8 | 0.0 | 0.0 | 8.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 42.8 |
| Buses | 0 | 22 | 0 | 0 | 22 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 47 |
| Single-Unit Trucks | 0 | 9 | 1 | 0 | 10 | 1 | 0 | 3 | 0 | 4 | 3 | 27 | 0 | 0 | 30 | 0 | 0 | 8 | 0 | 8 | 52 |
| Articulated Trucks | 0 | 4 | 26 | 0 | 30 | 39 | 0 | 0 | 0 | 39 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 74 |
| Total Entering Leg | 0 | 35 | 27 | 0 | 62 | 40 | 0 | 3 | 0 | 43 | 3 | 57 | 0 | 0 | 60 | 0 | 0 | 8 | 0 | 8 | 173 |
| Buses | | | | | 25 | | | | | 0 | | | | | 22 | | | | | 0 | 47 |
| Single-Unit Trucks | | | | | 36 | | | | | 4 | | | | | 12 | | | | | 0 | 52 |
| Articulated Trucks | | | | | 44 | | | | | 26 | | | | | 4 | | | | | 0 | 74 |
| Total Exiting Leg | | | | | 105 | | | | | 30 | | | | | 38 | | | | | 0 | 173 |

PDI File #: **186316 A**
Location: **N: Summer Street S: Summer Street**
Location: **E: Massport Freight Cor W: FedEx Driveway**
City, State: **Boston, MA**
Client: **VHB/ S. Mandzo**
Site Code: **12:00 AM**
Count Date: **Monday, June 11, 2018**
Start Time: **7:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Class: **Cars**

| | Summer Street | | | | | Massport Freight Cor | | | | | Summer Street | | | | | FedEx Driveway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 1 | 71 | 0 | 0 | 72 | 3 | 0 | 1 | 0 | 4 | 6 | 223 | 0 | 0 | 229 | 0 | 0 | 1 | 0 | 1 | 306 |
| 7:15 AM | 0 | 75 | 5 | 0 | 80 | 3 | 0 | 1 | 0 | 4 | 1 | 251 | 0 | 0 | 252 | 0 | 0 | 0 | 0 | 0 | 336 |
| 7:30 AM | 1 | 103 | 6 | 0 | 110 | 2 | 0 | 1 | 0 | 3 | 2 | 300 | 0 | 0 | 302 | 0 | 0 | 3 | 0 | 3 | 418 |
| 7:45 AM | 0 | 92 | 2 | 0 | 94 | 0 | 0 | 0 | 0 | 0 | 4 | 246 | 0 | 0 | 250 | 0 | 0 | 1 | 0 | 1 | 345 |
| Total | 2 | 341 | 13 | 0 | 356 | 8 | 0 | 3 | 0 | 11 | 13 | 1020 | 0 | 0 | 1033 | 0 | 0 | 5 | 0 | 5 | 1405 |
| 8:00 AM | 2 | 119 | 11 | 0 | 132 | 0 | 0 | 2 | 0 | 2 | 3 | 240 | 0 | 0 | 243 | 1 | 0 | 3 | 0 | 4 | 381 |
| 8:15 AM | 3 | 102 | 2 | 0 | 107 | 4 | 0 | 3 | 0 | 7 | 2 | 211 | 0 | 0 | 213 | 0 | 0 | 2 | 0 | 2 | 329 |
| 8:30 AM | 1 | 87 | 0 | 0 | 88 | 2 | 0 | 0 | 0 | 2 | 1 | 190 | 1 | 0 | 192 | 0 | 0 | 2 | 0 | 2 | 284 |
| 8:45 AM | 1 | 105 | 1 | 0 | 107 | 0 | 0 | 0 | 0 | 0 | 2 | 199 | 2 | 0 | 203 | 0 | 0 | 2 | 0 | 2 | 312 |
| Total | 7 | 413 | 14 | 0 | 434 | 6 | 0 | 5 | 0 | 11 | 8 | 840 | 3 | 0 | 851 | 1 | 0 | 9 | 0 | 10 | 1306 |
| Grand Total | 9 | 754 | 27 | 0 | 790 | 14 | 0 | 8 | 0 | 22 | 21 | 1860 | 3 | 0 | 1884 | 1 | 0 | 14 | 0 | 15 | 2711 |
| Approach % | 1.1 | 95.4 | 3.4 | 0.0 | | 63.6 | 0.0 | 36.4 | 0.0 | | 1.1 | 98.7 | 0.2 | 0.0 | | 6.7 | 0.0 | 93.3 | 0.0 | | |
| Total % | 0.3 | 27.8 | 1.0 | 0.0 | 29.1 | 0.5 | 0.0 | 0.3 | 0.0 | 0.8 | 0.8 | 68.6 | 0.1 | 0.0 | 69.5 | 0.0 | 0.0 | 0.5 | 0.0 | 0.6 | |
| Exiting Leg Total | | | | | 1888 | | | | | 48 | | | | | 763 | | | | | 12 | 2711 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:15 AM | Summer Street | | | | | Massport Freight Cor | | | | | Summer Street | | | | | FedEx Driveway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:15 AM | 0 | 75 | 5 | 0 | 80 | 3 | 0 | 1 | 0 | 4 | 1 | 251 | 0 | 0 | 252 | 0 | 0 | 0 | 0 | 0 | 336 |
| 7:30 AM | 1 | 103 | 6 | 0 | 110 | 2 | 0 | 1 | 0 | 3 | 2 | 300 | 0 | 0 | 302 | 0 | 0 | 3 | 0 | 3 | 418 |
| 7:45 AM | 0 | 92 | 2 | 0 | 94 | 0 | 0 | 0 | 0 | 0 | 4 | 246 | 0 | 0 | 250 | 0 | 0 | 1 | 0 | 1 | 345 |
| 8:00 AM | 2 | 119 | 11 | 0 | 132 | 0 | 0 | 2 | 0 | 2 | 3 | 240 | 0 | 0 | 243 | 1 | 0 | 3 | 0 | 4 | 381 |
| Total Volume | 3 | 389 | 24 | 0 | 416 | 5 | 0 | 4 | 0 | 9 | 10 | 1037 | 0 | 0 | 1047 | 1 | 0 | 7 | 0 | 8 | 1480 |
| % Approach Total | 0.7 | 93.5 | 5.8 | 0.0 | | 55.6 | 0.0 | 44.4 | 0.0 | | 1.0 | 99.0 | 0.0 | 0.0 | | 12.5 | 0.0 | 87.5 | 0.0 | | |
| PHF | 0.375 | 0.817 | 0.545 | 0.000 | 0.788 | 0.417 | 0.000 | 0.500 | 0.000 | 0.563 | 0.625 | 0.864 | 0.000 | 0.000 | 0.867 | 0.250 | 0.000 | 0.583 | 0.000 | 0.500 | 0.885 |
| Entering Leg | 3 | 389 | 24 | 0 | 416 | 5 | 0 | 4 | 0 | 9 | 10 | 1037 | 0 | 0 | 1047 | 1 | 0 | 7 | 0 | 8 | 1480 |
| Exiting Leg | | | | | 1049 | | | | | 34 | | | | | 394 | | | | | 3 | 1480 |
| Total | | | | | 1465 | | | | | 43 | | | | | 1441 | | | | | 11 | 2960 |

PDI File #: **186316 A**
Location: **N: Summer Street S: Summer Street**
Location: **E: Massport Freight Cor W: FedEx Driveway**
City, State: **Boston, MA**
Client: **VHB/ S. Mandzo**
Site Code: **12:00 AM**
Count Date: **Monday, June 11, 2018**
Start Time: **7:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Class:

## Light Goods Vehicle

| | Summer Street | | | | | Massport Freight Cor | | | | | Summer Street | | | | | FedEx Driveway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 1 | 7 | 2 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 4 | 21 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 35 |
| 7:15 AM | 0 | 8 | 3 | 0 | 11 | 1 | 0 | 0 | 0 | 1 | 2 | 21 | 0 | 0 | 23 | 0 | 0 | 0 | 0 | 0 | 35 |
| 7:30 AM | 0 | 12 | 0 | 0 | 12 | 2 | 1 | 0 | 0 | 3 | 0 | 18 | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 33 |
| 7:45 AM | 0 | 9 | 1 | 0 | 10 | 2 | 0 | 0 | 0 | 2 | 0 | 18 | 1 | 0 | 19 | 1 | 1 | 1 | 0 | 3 | 34 |
| Total | 1 | 36 | 6 | 0 | 43 | 5 | 1 | 0 | 0 | 6 | 6 | 78 | 1 | 0 | 85 | 1 | 1 | 1 | 0 | 3 | 137 |
| 8:00 AM | 0 | 14 | 1 | 0 | 15 | 0 | 0 | 1 | 0 | 1 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 5 | 0 | 5 | 28 |
| 8:15 AM | 0 | 8 | 0 | 0 | 8 | 0 | 0 | 2 | 0 | 2 | 1 | 26 | 1 | 0 | 28 | 0 | 0 | 2 | 0 | 2 | 40 |
| 8:30 AM | 1 | 10 | 0 | 0 | 11 | 0 | 0 | 1 | 0 | 1 | 0 | 17 | 0 | 0 | 17 | 2 | 0 | 0 | 0 | 2 | 31 |
| 8:45 AM | 0 | 9 | 1 | 0 | 10 | 1 | 0 | 0 | 0 | 1 | 1 | 14 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 26 |
| Total | 1 | 41 | 2 | 0 | 44 | 1 | 0 | 4 | 0 | 5 | 2 | 64 | 1 | 0 | 67 | 2 | 0 | 7 | 0 | 9 | 125 |
| Grand Total | 2 | 77 | 8 | 0 | 87 | 6 | 1 | 4 | 0 | 11 | 8 | 142 | 2 | 0 | 152 | 3 | 1 | 8 | 0 | 12 | 262 |
| Approach % | 2.3 | 88.5 | 9.2 | 0.0 | | 54.5 | 9.1 | 36.4 | 0.0 | | 5.3 | 93.4 | 1.3 | 0.0 | | 25.0 | 8.3 | 66.7 | 0.0 | | |
| Total % | 0.8 | 29.4 | 3.1 | 0.0 | 33.2 | 2.3 | 0.4 | 1.5 | 0.0 | 4.2 | 3.1 | 54.2 | 0.8 | 0.0 | 58.0 | 1.1 | 0.4 | 3.1 | 0.0 | 4.6 | |
| Exiting Leg Total | | | | | 156 | | | | | 17 | | | | | 84 | | | | | 5 | 262 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:00 AM | Summer Street | | | | | Massport Freight Cor | | | | | Summer Street | | | | | FedEx Driveway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 1 | 7 | 2 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 4 | 21 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 35 |
| 7:15 AM | 0 | 8 | 3 | 0 | 11 | 1 | 0 | 0 | 0 | 1 | 2 | 21 | 0 | 0 | 23 | 0 | 0 | 0 | 0 | 0 | 35 |
| 7:30 AM | 0 | 12 | 0 | 0 | 12 | 2 | 1 | 0 | 0 | 3 | 0 | 18 | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 33 |
| 7:45 AM | 0 | 9 | 1 | 0 | 10 | 2 | 0 | 0 | 0 | 2 | 0 | 18 | 1 | 0 | 19 | 1 | 1 | 1 | 0 | 3 | 34 |
| Total Volume | 1 | 36 | 6 | 0 | 43 | 5 | 1 | 0 | 0 | 6 | 6 | 78 | 1 | 0 | 85 | 1 | 1 | 1 | 0 | 3 | 137 |
| % Approach Total | 2.3 | 83.7 | 14.0 | 0.0 | | 83.3 | 16.7 | 0.0 | 0.0 | | 7.1 | 91.8 | 1.2 | 0.0 | | 33.3 | 33.3 | 33.3 | 0.0 | | |
| PHF | 0.250 | 0.750 | 0.500 | 0.000 | 0.896 | 0.625 | 0.250 | 0.000 | 0.000 | 0.500 | 0.375 | 0.929 | 0.250 | 0.000 | 0.850 | 0.250 | 0.250 | 0.250 | 0.000 | 0.250 | 0.979 |
| Entering Leg | 1 | 36 | 6 | 0 | 43 | 5 | 1 | 0 | 0 | 6 | 6 | 78 | 1 | 0 | 85 | 1 | 1 | 1 | 0 | 3 | 137 |
| Exiting Leg | | | | | 84 | | | | | 13 | | | | | 37 | | | | | 3 | 137 |
| Total | | | | | 127 | | | | | 19 | | | | | 122 | | | | | 6 | 274 |

PDI File #: **186316 A**
Location: **N: Summer Street S: Summer Street**
Location: **E: Massport Freight Cor W: FedEx Driveway**
City, State: **Boston, MA**
Client: **VHB/ S. Mandzo**
Site Code: **12:00 AM**
Count Date: **Monday, June 11, 2018**
Start Time: **7:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Class: **Buses**

| | Summer Street | | | | | Massport Freight Cor | | | | | Summer Street | | | | | FedEx Driveway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 9 |
| 7:15 AM | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 11 |
| 7:30 AM | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 12 |
| 7:45 AM | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 10 |
| Total | 0 | 19 | 0 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | 0 | 0 | 23 | 0 | 0 | 0 | 0 | 0 | 42 |
| 8:00 AM | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 11 |
| 8:15 AM | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 14 |
| 8:30 AM | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 11 |
| 8:45 AM | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 8 |
| Total | 0 | 22 | 0 | 0 | 22 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | 0 | 0 | 22 | 0 | 0 | 0 | 0 | 0 | 44 |
| Grand Total | 0 | 41 | 0 | 0 | 41 | 0 | 0 | 0 | 0 | 0 | 0 | 45 | 0 | 0 | 45 | 0 | 0 | 0 | 0 | 0 | 86 |
| Approach % | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total % | 0.0 | 47.7 | 0.0 | 0.0 | 47.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 52.3 | 0.0 | 0.0 | 52.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Exiting Leg Total | | | | | 45 | | | | | 0 | | | | | 41 | | | | | 0 | 86 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:30 AM | Summer Street | | | | | Massport Freight Cor | | | | | Summer Street | | | | | FedEx Driveway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:30 AM | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 12 |
| 7:45 AM | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 10 |
| 8:00 AM | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 11 |
| 8:15 AM | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 14 |
| Total Volume | 0 | 22 | 0 | 0 | 22 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 47 |
| % Approach Total | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | |
| PHF | 0.000 | 0.786 | 0.000 | 0.000 | 0.786 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.893 | 0.000 | 0.000 | 0.893 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.839 |
| Entering Leg | 0 | 22 | 0 | 0 | 22 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 47 |
| Exiting Leg | | | | | 25 | | | | | 0 | | | | | 22 | | | | | 0 | 47 |
| Total | | | | | 47 | | | | | 0 | | | | | 47 | | | | | 0 | 94 |

PDI File #: **186316 A**
Location: **N: Summer Street S: Summer Street**
Location: **E: Massport Freight Cor W: FedEx Driveway**
City, State: **Boston, MA**
Client: **VHB/ S. Mandzo**
Site Code: **12:00 AM**
Count Date: **Monday, June 11, 2018**
Start Time: **7:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Class: **Single-Unit Trucks**

| | Summer Street | | | | | Massport Freight Cor | | | | | Summer Street | | | | | FedEx Driveway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 4 |
| 7:15 AM | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 9 |
| 7:30 AM | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 4 |
| 7:45 AM | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 1 | 0 | 1 | 0 | 13 | 0 | 0 | 13 | 0 | 0 | 5 | 0 | 5 | 23 |
| Total | 0 | 12 | 1 | 0 | 13 | 0 | 0 | 3 | 0 | 3 | 1 | 18 | 0 | 0 | 19 | 0 | 0 | 5 | 0 | 5 | 40 |
| 8:00 AM | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 1 | 1 | 10 | 0 | 0 | 11 | 0 | 0 | 3 | 0 | 3 | 18 |
| 8:15 AM | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 4 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 7 |
| 8:30 AM | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 1 | 5 |
| 8:45 AM | 0 | 4 | 1 | 0 | 5 | 0 | 0 | 1 | 0 | 1 | 1 | 3 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 10 |
| Total | 0 | 10 | 1 | 0 | 11 | 1 | 0 | 2 | 0 | 3 | 3 | 19 | 0 | 0 | 22 | 1 | 0 | 3 | 0 | 4 | 40 |
| Grand Total | 0 | 22 | 2 | 0 | 24 | 1 | 0 | 5 | 0 | 6 | 4 | 37 | 0 | 0 | 41 | 1 | 0 | 8 | 0 | 9 | 80 |
| Approach % | 0.0 | 91.7 | 8.3 | 0.0 | | 16.7 | 0.0 | 83.3 | 0.0 | | 9.8 | 90.2 | 0.0 | 0.0 | | 11.1 | 0.0 | 88.9 | 0.0 | | |
| Total % | 0.0 | 27.5 | 2.5 | 0.0 | 30.0 | 1.3 | 0.0 | 6.3 | 0.0 | 7.5 | 5.0 | 46.3 | 0.0 | 0.0 | 51.3 | 1.3 | 0.0 | 10.0 | 0.0 | 11.3 | |
| Exiting Leg Total | | | | | 46 | | | | | 6 | | | | | 28 | | | | | 0 | 80 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:15 AM | Summer Street | | | | | Massport Freight Cor | | | | | Summer Street | | | | | FedEx Driveway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:15 AM | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 9 |
| 7:30 AM | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 4 |
| 7:45 AM | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 1 | 0 | 1 | 0 | 13 | 0 | 0 | 13 | 0 | 0 | 5 | 0 | 5 | 23 |
| 8:00 AM | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 1 | 1 | 10 | 0 | 0 | 11 | 0 | 0 | 3 | 0 | 3 | 18 |
| Total Volume | 0 | 13 | 1 | 0 | 14 | 0 | 0 | 3 | 0 | 3 | 2 | 27 | 0 | 0 | 29 | 0 | 0 | 8 | 0 | 8 | 54 |
| % Approach Total | 0.0 | 92.9 | 7.1 | 0.0 | | 0.0 | 0.0 | 100.0 | 0.0 | | 6.9 | 93.1 | 0.0 | 0.0 | | 0.0 | 0.0 | 100.0 | 0.0 | | |
| PHF | 0.000 | 0.650 | 0.250 | 0.000 | 0.700 | 0.000 | 0.000 | 0.750 | 0.000 | 0.750 | 0.500 | 0.519 | 0.000 | 0.000 | 0.558 | 0.000 | 0.000 | 0.400 | 0.000 | 0.400 | 0.587 |
| Entering Leg | 0 | 13 | 1 | 0 | 14 | 0 | 0 | 3 | 0 | 3 | 2 | 27 | 0 | 0 | 29 | 0 | 0 | 8 | 0 | 8 | 54 |
| Exiting Leg | | | | | 35 | | | | | 3 | | | | | 16 | | | | | 0 | 54 |
| Total | | | | | 49 | | | | | 6 | | | | | 45 | | | | | 8 | 108 |

PDI File #: **186316 A**
Location: **N: Summer Street S: Summer Street**
Location: **E: Massport Freight Cor W: FedEx Driveway**
City, State: **Boston, MA**
Client: **VHB/ S. Mandzo**
Site Code: **12:00 AM**
Count Date: **Monday, June 11, 2018**
Start Time: **7:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Class:

## Articulated Trucks

| | Summer Street from North | | | | | Massport Freight Cor from East | | | | | Summer Street from South | | | | | FedEx Driveway from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 0 | 12 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 7:15 AM | 0 | 0 | 8 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 9 |
| 7:30 AM | 0 | 2 | 9 | 0 | 11 | 3 | 0 | 0 | 0 | 3 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 16 |
| 7:45 AM | 0 | 0 | 9 | 0 | 9 | 8 | 0 | 0 | 0 | 8 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 19 |
| Total | 0 | 2 | 38 | 0 | 40 | 11 | 0 | 0 | 0 | 11 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 56 |
| 8:00 AM | 0 | 0 | 5 | 0 | 5 | 17 | 0 | 0 | 0 | 17 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 23 |
| 8:15 AM | 0 | 2 | 3 | 0 | 5 | 11 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| 8:30 AM | 0 | 0 | 5 | 0 | 5 | 9 | 0 | 0 | 0 | 9 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 15 |
| 8:45 AM | 0 | 0 | 4 | 0 | 4 | 9 | 0 | 0 | 0 | 9 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 14 |
| Total | 0 | 2 | 17 | 0 | 19 | 46 | 0 | 0 | 0 | 46 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 68 |
| Grand Total | 0 | 4 | 55 | 0 | 59 | 57 | 0 | 0 | 0 | 57 | 0 | 8 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 124 |
| Approach % | 0.0 | 6.8 | 93.2 | 0.0 | | 100.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total % | 0.0 | 3.2 | 44.4 | 0.0 | 47.6 | 46.0 | 0.0 | 0.0 | 0.0 | 46.0 | 0.0 | 6.5 | 0.0 | 0.0 | 6.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Exiting Leg Total | | | | | 65 | | | | | 55 | | | | | 4 | | | | | 0 | 124 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:30 AM | Summer Street from North | | | | | Massport Freight Cor from East | | | | | Summer Street from South | | | | | FedEx Driveway from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:30 AM | 0 | 2 | 9 | 0 | 11 | 3 | 0 | 0 | 0 | 3 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 16 |
| 7:45 AM | 0 | 0 | 9 | 0 | 9 | 8 | 0 | 0 | 0 | 8 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 19 |
| 8:00 AM | 0 | 0 | 5 | 0 | 5 | 17 | 0 | 0 | 0 | 17 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 23 |
| 8:15 AM | 0 | 2 | 3 | 0 | 5 | 11 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| Total Volume | 0 | 4 | 26 | 0 | 30 | 39 | 0 | 0 | 0 | 39 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 74 |
| % Approach Total | 0.0 | 13.3 | 86.7 | 0.0 | | 100.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | |
| PHF | 0.000 | 0.500 | 0.722 | 0.000 | 0.682 | 0.574 | 0.000 | 0.000 | 0.000 | 0.574 | 0.000 | 0.625 | 0.000 | 0.000 | 0.625 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.804 |
| Entering Leg | 0 | 4 | 26 | 0 | 30 | 39 | 0 | 0 | 0 | 39 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 74 |
| Exiting Leg | | | | | 44 | | | | | 26 | | | | | 4 | | | | | 0 | 74 |
| Total | | | | | 74 | | | | | 65 | | | | | 9 | | | | | 0 | 148 |

PDI File #: **186316 A**
Location: **N: Summer Street S: Summer Street**
Location: **E: Massport Freight Cor W: FedEx Driveway**
City, State: **Boston, MA**
Client: **VHB/ S. Mandzo**
Site Code: **12:00 AM**
Count Date: **Monday, June 11, 2018**
Start Time: **7:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Class:

## Bicycles (on Roadway and Crosswalks)

| | Summer Street | | | | | | | Massport Freight Cor | | | | | | | Summer Street | | | | | | | FedEx Driveway | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | | | from East | | | | | | | from South | | | | | | | from West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 7:15 AM | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 7 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 10 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| Total | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 24 | 0 | 0 | 1 | 0 | 0 | 1 | 2 | 27 |
| 8:00 AM | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| 8:15 AM | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 8:45 AM | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| Total | 1 | 2 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 45 | 0 | 0 | 0 | 0 | 45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 48 |
| Grand Total | 1 | 3 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 69 | 0 | 0 | 0 | 0 | 69 | 0 | 0 | 1 | 0 | 0 | 1 | 2 | 75 |
| Approach % | 25.0 | 75.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 50.0 | 0.0 | 0.0 | 50.0 | | |
| Total % | 1.3 | 4.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 92.0 | 0.0 | 0.0 | 0.0 | 0.0 | 92.0 | 0.0 | 0.0 | 1.3 | 0.0 | 0.0 | 1.3 | 2.7 | |
| Exiting Leg Total | | | | | | | 70 | | | | | | | 0 | | | | | | | 3 | | | | | | | 2 | 75 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 8:00 AM | Summer Street | | | | | | | Massport Freight Cor | | | | | | | Summer Street | | | | | | | FedEx Driveway | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | | | from East | | | | | | | from South | | | | | | | from West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 8:00 AM | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| 8:15 AM | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 8:45 AM | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| Total Volume | 1 | 2 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 45 | 0 | 0 | 0 | 0 | 45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 48 |
| % Approach Total | 33.3 | 66.7 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| PHF | 0.250 | 0.500 | 0.000 | 0.000 | 0.000 | 0.000 | 0.750 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.865 | 0.000 | 0.000 | 0.000 | 0.000 | 0.865 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.857 |
| Entering Leg | 1 | 2 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 45 | 0 | 0 | 0 | 0 | 45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 48 |
| Exiting Leg | | | | | | | 45 | | | | | | | 0 | | | | | | | 2 | | | | | | | 1 | 48 |
| Total | | | | | | | 48 | | | | | | | 0 | | | | | | | 47 | | | | | | | 1 | 96 |

PDI File #: **186316 A**
Location: **N: Summer Street S: Summer Street**
Location: **E: Massport Freight Cor W: FedEx Driveway**
City, State: **Boston, MA**
Client: **VHB/ S. Mandzo**
Site Code: **12:00 AM**
Count Date: **Monday, June 11, 2018**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Pedestrians

| | Summer Street | | | | | | | Massport Freight Cor | | | | | | | Summer Street | | | | | | | FedEx Driveway | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | | | from East | | | | | | | from South | | | | | | | from West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 7 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 14 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 9 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 6 | 18 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 1 | 8 | 21 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 1 | 19 | 28 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 38 | 45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 3 | 36 | 81 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 2 | 18 | 36 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | 34 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 0 | 0 | 0 | 0 | 11 | 0 | 11 | 49 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | 30 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 20 | 0 | 20 | 52 |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 2 | 17 | 32 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 97 | 97 | 0 | 0 | 0 | 0 | 0 | 6 | 6 | 0 | 0 | 0 | 0 | 62 | 4 | 66 | 169 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 135 | 142 | 0 | 0 | 0 | 0 | 0 | 6 | 6 | 0 | 0 | 0 | 0 | 95 | 7 | 102 | 250 |
| Approach % | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 4.93 | 95.1 | | 0 | 0 | 0 | 0 | 0 | 100 | | 0 | 0 | 0 | 0 | 93.1 | 6.86 | | |
| Total % | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2.8 | 54 | 56.8 | 0 | 0 | 0 | 0 | 0 | 2.4 | 2.4 | 0 | 0 | 0 | 0 | 38 | 2.8 | 40.8 | |
| Exiting Leg Total | | | | | | | 0 | | | | | | | 142 | | | | | | | 6 | | | | | | | 102 | 250 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 8:00 AM | Summer Street | | | | | | | Massport Freight Cor | | | | | | | Summer Street | | | | | | | FedEx Driveway | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | | | from East | | | | | | | from South | | | | | | | from West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 2 | 18 | 36 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | 34 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 0 | 0 | 0 | 0 | 11 | 0 | 11 | 49 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | 30 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 20 | 0 | 20 | 52 |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 2 | 17 | 32 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 97 | 97 | 0 | 0 | 0 | 0 | 0 | 6 | 6 | 0 | 0 | 0 | 0 | 62 | 4 | 66 | 169 |
| % Approach Total | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 93.9 | 6.1 | | |
| PHF | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.713 | 0.713 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.375 | 0.375 | 0.000 | 0.000 | 0.000 | 0.000 | 0.775 | 0.500 | 0.825 | 0.813 |
| Entering Leg | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 97 | 97 | 0 | 0 | 0 | 0 | 0 | 6 | 6 | 0 | 0 | 0 | 0 | 62 | 4 | 66 | 169 |
| Exiting Leg | | | | | | | 0 | | | | | | | 97 | | | | | | | 6 | | | | | | | 66 | 169 |
| Total | | | | | | | 0 | | | | | | | 194 | | | | | | | 12 | | | | | | | 132 | 338 |

PDI File #: **186316 AA**
Location: **N: Summer Street S: Summer Street**
Location: **E: Massport Freight Cor W: FedEx Driveway**
City, State: **Boston, MA**
Client: **VHB/ S. Mandzo**
Site Code: **TBA**
Count Date: **Monday, June 11, 2018**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Cars and Heavy Vehicles (Combined)

| | Summer Street | | | | | Massport Freight Cor | | | | | Summer Street | | | | | FedEx Driveway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 3 | 199 | 5 | 0 | 207 | 18 | 0 | 7 | 0 | 25 | 0 | 132 | 2 | 0 | 134 | 1 | 0 | 6 | 0 | 7 | 373 |
| 4:15 PM | 6 | 234 | 0 | 0 | 240 | 18 | 0 | 4 | 0 | 22 | 0 | 146 | 1 | 0 | 147 | 1 | 0 | 4 | 0 | 5 | 414 |
| 4:30 PM | 7 | 229 | 0 | 0 | 236 | 8 | 0 | 7 | 0 | 15 | 1 | 135 | 0 | 0 | 136 | 1 | 0 | 4 | 0 | 5 | 392 |
| 4:45 PM | 2 | 242 | 0 | 0 | 244 | 9 | 0 | 11 | 0 | 20 | 0 | 153 | 1 | 0 | 154 | 5 | 0 | 6 | 0 | 11 | 429 |
| Total | 18 | 904 | 5 | 0 | 927 | 53 | 0 | 29 | 0 | 82 | 1 | 566 | 4 | 0 | 571 | 8 | 0 | 20 | 0 | 28 | 1608 |
| 5:00 PM | 4 | 276 | 0 | 0 | 280 | 8 | 1 | 7 | 0 | 16 | 1 | 138 | 1 | 0 | 140 | 3 | 0 | 6 | 0 | 9 | 445 |
| 5:15 PM | 10 | 239 | 1 | 1 | 251 | 4 | 0 | 8 | 0 | 12 | 0 | 111 | 1 | 0 | 112 | 2 | 0 | 9 | 0 | 11 | 386 |
| 5:30 PM | 13 | 246 | 0 | 0 | 259 | 0 | 0 | 2 | 0 | 2 | 3 | 101 | 0 | 0 | 104 | 2 | 0 | 9 | 0 | 11 | 376 |
| 5:45 PM | 7 | 248 | 0 | 0 | 255 | 0 | 0 | 0 | 0 | 0 | 0 | 109 | 5 | 0 | 114 | 3 | 0 | 9 | 0 | 12 | 381 |
| Total | 34 | 1009 | 1 | 1 | 1045 | 12 | 1 | 17 | 0 | 30 | 4 | 459 | 7 | 0 | 470 | 10 | 0 | 33 | 0 | 43 | 1588 |
| Grand Total | 52 | 1913 | 6 | 1 | 1972 | 65 | 1 | 46 | 0 | 112 | 5 | 1025 | 11 | 0 | 1041 | 18 | 0 | 53 | 0 | 71 | 3196 |
| Approach % | 2.6 | 97.0 | 0.3 | 0.1 | | 58.0 | 0.9 | 41.1 | 0.0 | | 0.5 | 98.5 | 1.1 | 0.0 | | 25.4 | 0.0 | 74.6 | 0.0 | | |
| Total % | 1.6 | 59.9 | 0.2 | 0.0 | 61.7 | 2.0 | 0.0 | 1.4 | 0.0 | 3.5 | 0.2 | 32.1 | 0.3 | 0.0 | 32.6 | 0.6 | 0.0 | 1.7 | 0.0 | 2.2 | |
| Exiting Leg Total | | | | | 1144 | | | | | 11 | | | | | 1977 | | | | | 64 | 3196 |
| Cars | 47 | 1862 | 2 | 1 | 1912 | 29 | 1 | 46 | 0 | 76 | 4 | 989 | 11 | 0 | 1004 | 18 | 0 | 50 | 0 | 68 | 3060 |
| % Cars | 90.4 | 97.3 | 33.3 | 100.0 | 97.0 | 44.6 | 100.0 | 100.0 | 0.0 | 67.9 | 80.0 | 96.5 | 100.0 | 0.0 | 96.4 | 100.0 | 0.0 | 94.3 | 0.0 | 95.8 | 95.7 |
| Exiting Leg Total | | | | | 1069 | | | | | 6 | | | | | 1926 | | | | | 59 | 3060 |
| Heavy Vehicles | 5 | 51 | 4 | 0 | 60 | 36 | 0 | 0 | 0 | 36 | 1 | 36 | 0 | 0 | 37 | 0 | 0 | 3 | 0 | 3 | 136 |
| % Heavy Vehicles | 9.6 | 2.7 | 66.7 | 0.0 | 3.0 | 55.4 | 0.0 | 0.0 | 0.0 | 32.1 | 20.0 | 3.5 | 0.0 | 0.0 | 3.6 | 0.0 | 0.0 | 5.7 | 0.0 | 4.2 | 4.3 |
| Exiting Leg Total | | | | | 75 | | | | | 5 | | | | | 51 | | | | | 5 | 136 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:15 PM | Summer Street | | | | | Massport Freight Cor | | | | | Summer Street | | | | | FedEx Driveway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:15 PM | 6 | 234 | 0 | 0 | 240 | 18 | 0 | 4 | 0 | 22 | 0 | 146 | 1 | 0 | 147 | 1 | 0 | 4 | 0 | 5 | 414 |
| 4:30 PM | 7 | 229 | 0 | 0 | 236 | 8 | 0 | 7 | 0 | 15 | 1 | 135 | 0 | 0 | 136 | 1 | 0 | 4 | 0 | 5 | 392 |
| 4:45 PM | 2 | 242 | 0 | 0 | 244 | 9 | 0 | 11 | 0 | 20 | 0 | 153 | 1 | 0 | 154 | 5 | 0 | 6 | 0 | 11 | 429 |
| 5:00 PM | 4 | 276 | 0 | 0 | 280 | 8 | 1 | 7 | 0 | 16 | 1 | 138 | 1 | 0 | 140 | 3 | 0 | 6 | 0 | 9 | 445 |
| Total Volume | 19 | 981 | 0 | 0 | 1000 | 43 | 1 | 29 | 0 | 73 | 2 | 572 | 3 | 0 | 577 | 10 | 0 | 20 | 0 | 30 | 1680 |
| % Approach Total | 1.9 | 98.1 | 0.0 | 0.0 | | 58.9 | 1.4 | 39.7 | 0.0 | | 0.3 | 99.1 | 0.5 | 0.0 | | 33.3 | 0.0 | 66.7 | 0.0 | | |
| PHF | 0.679 | 0.889 | 0.000 | 0.000 | 0.893 | 0.597 | 0.250 | 0.659 | 0.000 | 0.830 | 0.500 | 0.935 | 0.750 | 0.000 | 0.937 | 0.500 | 0.000 | 0.833 | 0.000 | 0.682 | 0.944 |
| Cars | 16 | 953 | 0 | 0 | 969 | 23 | 1 | 29 | 0 | 53 | 1 | 552 | 3 | 0 | 556 | 10 | 0 | 17 | 0 | 27 | 1605 |
| Cars % | 84.2 | 97.1 | 0.0 | 0.0 | 96.9 | 53.5 | 100.0 | 100.0 | 0.0 | 72.6 | 50.0 | 96.5 | 100.0 | 0.0 | 96.4 | 100.0 | 0.0 | 85.0 | 0.0 | 90.0 | 95.5 |
| Heavy Vehicles | 3 | 28 | 0 | 0 | 31 | 20 | 0 | 0 | 0 | 20 | 1 | 20 | 0 | 0 | 21 | 0 | 0 | 3 | 0 | 3 | 75 |
| Heavy Vehicles % | 15.8 | 2.9 | 0.0 | 0.0 | 3.1 | 46.5 | 0.0 | 0.0 | 0.0 | 27.4 | 50.0 | 3.5 | 0.0 | 0.0 | 3.6 | 0.0 | 0.0 | 15.0 | 0.0 | 10.0 | 4.5 |
| Cars Enter Leg | 16 | 953 | 0 | 0 | 969 | 23 | 1 | 29 | 0 | 53 | 1 | 552 | 3 | 0 | 556 | 10 | 0 | 17 | 0 | 27 | 1605 |
| Heavy Enter Leg | 3 | 28 | 0 | 0 | 31 | 20 | 0 | 0 | 0 | 20 | 1 | 20 | 0 | 0 | 21 | 0 | 0 | 3 | 0 | 3 | 75 |
| Total Entering Leg | 19 | 981 | 0 | 0 | 1000 | 43 | 1 | 29 | 0 | 73 | 2 | 572 | 3 | 0 | 577 | 10 | 0 | 20 | 0 | 30 | 1680 |
| Cars Exiting Leg | | | | | 592 | | | | | 1 | | | | | 992 | | | | | 20 | 1605 |
| Heavy Exiting Leg | | | | | 43 | | | | | 1 | | | | | 28 | | | | | 3 | 75 |
| Total Exiting Leg | | | | | 635 | | | | | 2 | | | | | 1020 | | | | | 23 | 1680 |

PDI File #: **186316 AA**
Location: **N: Summer Street S: Summer Street**
Location: **E: Massport Freight Cor W: FedEx Driveway**
City, State: **Boston, MA**
Client: **VHB/ S. Mandzo**
Site Code: **TBA**
Count Date: **Monday, June 11, 2018**
Start Time: **4:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Class: **Cars-Combined (Motorcycles, Cars, Light Goods)**

| | Summer Street | | | | | Massport Freight Cor | | | | | Summer Street | | | | | FedEx Driveway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 3 | 194 | 1 | 0 | 198 | 2 | 0 | 7 | 0 | 9 | 0 | 130 | 2 | 0 | 132 | 1 | 0 | 6 | 0 | 7 | 346 |
| 4:15 PM | 6 | 225 | 0 | 0 | 231 | 5 | 0 | 4 | 0 | 9 | 0 | 140 | 1 | 0 | 141 | 1 | 0 | 4 | 0 | 5 | 386 |
| 4:30 PM | 4 | 220 | 0 | 0 | 224 | 4 | 0 | 7 | 0 | 11 | 0 | 131 | 0 | 0 | 131 | 1 | 0 | 3 | 0 | 4 | 370 |
| 4:45 PM | 2 | 236 | 0 | 0 | 238 | 7 | 0 | 11 | 0 | 18 | 0 | 148 | 1 | 0 | 149 | 5 | 0 | 5 | 0 | 10 | 415 |
| Total | 15 | 875 | 1 | 0 | 891 | 18 | 0 | 29 | 0 | 47 | 0 | 549 | 4 | 0 | 553 | 8 | 0 | 18 | 0 | 26 | 1517 |
| 5:00 PM | 4 | 272 | 0 | 0 | 276 | 7 | 1 | 7 | 0 | 15 | 1 | 133 | 1 | 0 | 135 | 3 | 0 | 5 | 0 | 8 | 434 |
| 5:15 PM | 9 | 230 | 1 | 1 | 241 | 4 | 0 | 8 | 0 | 12 | 0 | 107 | 1 | 0 | 108 | 2 | 0 | 9 | 0 | 11 | 372 |
| 5:30 PM | 12 | 242 | 0 | 0 | 254 | 0 | 0 | 2 | 0 | 2 | 3 | 94 | 0 | 0 | 97 | 2 | 0 | 9 | 0 | 11 | 364 |
| 5:45 PM | 7 | 243 | 0 | 0 | 250 | 0 | 0 | 0 | 0 | 0 | 0 | 106 | 5 | 0 | 111 | 3 | 0 | 9 | 0 | 12 | 373 |
| Total | 32 | 987 | 1 | 1 | 1021 | 11 | 1 | 17 | 0 | 29 | 4 | 440 | 7 | 0 | 451 | 10 | 0 | 32 | 0 | 42 | 1543 |
| Grand Total | 47 | 1862 | 2 | 1 | 1912 | 29 | 1 | 46 | 0 | 76 | 4 | 989 | 11 | 0 | 1004 | 18 | 0 | 50 | 0 | 68 | 3060 |
| Approach % | 2.5 | 97.4 | 0.1 | 0.1 | | 38.2 | 1.3 | 60.5 | 0.0 | | 0.4 | 98.5 | 1.1 | 0.0 | | 26.5 | 0.0 | 73.5 | 0.0 | | |
| Total % | 1.5 | 60.8 | 0.1 | 0.0 | 62.5 | 0.9 | 0.0 | 1.5 | 0.0 | 2.5 | 0.1 | 32.3 | 0.4 | 0.0 | 32.8 | 0.6 | 0.0 | 1.6 | 0.0 | 2.2 | |
| Exiting Leg Total | | | | | 1069 | | | | | 6 | | | | | 1926 | | | | | 59 | 3060 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:15 PM | Summer Street | | | | | Massport Freight Cor | | | | | Summer Street | | | | | FedEx Driveway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:15 PM | 6 | 225 | 0 | 0 | 231 | 5 | 0 | 4 | 0 | 9 | 0 | 140 | 1 | 0 | 141 | 1 | 0 | 4 | 0 | 5 | 386 |
| 4:30 PM | 4 | 220 | 0 | 0 | 224 | 4 | 0 | 7 | 0 | 11 | 0 | 131 | 0 | 0 | 131 | 1 | 0 | 3 | 0 | 4 | 370 |
| 4:45 PM | 2 | 236 | 0 | 0 | 238 | 7 | 0 | 11 | 0 | 18 | 0 | 148 | 1 | 0 | 149 | 5 | 0 | 5 | 0 | 10 | 415 |
| 5:00 PM | 4 | 272 | 0 | 0 | 276 | 7 | 1 | 7 | 0 | 15 | 1 | 133 | 1 | 0 | 135 | 3 | 0 | 5 | 0 | 8 | 434 |
| Total Volume | 16 | 953 | 0 | 0 | 969 | 23 | 1 | 29 | 0 | 53 | 1 | 552 | 3 | 0 | 556 | 10 | 0 | 17 | 0 | 27 | 1605 |
| % Approach Total | 1.7 | 98.3 | 0.0 | 0.0 | | 43.4 | 1.9 | 54.7 | 0.0 | | 0.2 | 99.3 | 0.5 | 0.0 | | 37.0 | 0.0 | 63.0 | 0.0 | | |
| PHF | 0.667 | 0.876 | 0.000 | 0.000 | 0.878 | 0.821 | 0.250 | 0.659 | 0.000 | 0.736 | 0.250 | 0.932 | 0.750 | 0.000 | 0.933 | 0.500 | 0.000 | 0.850 | 0.000 | 0.675 | 0.925 |
| Entering Leg | 16 | 953 | 0 | 0 | 969 | 23 | 1 | 29 | 0 | 53 | 1 | 552 | 3 | 0 | 556 | 10 | 0 | 17 | 0 | 27 | 1605 |
| Exiting Leg | | | | | 592 | | | | | 1 | | | | | 992 | | | | | 20 | 1605 |
| Total | | | | | 1561 | | | | | 54 | | | | | 1548 | | | | | 47 | 3210 |

PDI File #: **186316 AA**
Location: **N: Summer Street S: Summer Street**
Location: **E: Massport Freight Cor W: FedEx Driveway**
City, State: **Boston, MA**
Client: **VHB/ S. Mandzo**
Site Code: **TBA**
Count Date: **Monday, June 11, 2018**
Start Time: **4:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

| | Summer Street from North | | | | | Massport Freight Cor from East | | | | | Summer Street from South | | | | | FedEx Driveway from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 0 | 5 | 4 | 0 | 9 | 16 | 0 | 0 | 0 | 16 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 27 |
| 4:15 PM | 0 | 9 | 0 | 0 | 9 | 13 | 0 | 0 | 0 | 13 | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 28 |
| 4:30 PM | 3 | 9 | 0 | 0 | 12 | 4 | 0 | 0 | 0 | 4 | 1 | 4 | 0 | 0 | 5 | 0 | 0 | 1 | 0 | 1 | 22 |
| 4:45 PM | 0 | 6 | 0 | 0 | 6 | 2 | 0 | 0 | 0 | 2 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 1 | 0 | 1 | 14 |
| Total | 3 | 29 | 4 | 0 | 36 | 35 | 0 | 0 | 0 | 35 | 1 | 17 | 0 | 0 | 18 | 0 | 0 | 2 | 0 | 2 | 91 |
| 5:00 PM | 0 | 4 | 0 | 0 | 4 | 1 | 0 | 0 | 0 | 1 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 1 | 0 | 1 | 11 |
| 5:15 PM | 1 | 9 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 14 |
| 5:30 PM | 1 | 4 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 12 |
| 5:45 PM | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 8 |
| Total | 2 | 22 | 0 | 0 | 24 | 1 | 0 | 0 | 0 | 1 | 0 | 19 | 0 | 0 | 19 | 0 | 0 | 1 | 0 | 1 | 45 |
| Grand Total | 5 | 51 | 4 | 0 | 60 | 36 | 0 | 0 | 0 | 36 | 1 | 36 | 0 | 0 | 37 | 0 | 0 | 3 | 0 | 3 | 136 |
| Approach % | 8.3 | 85.0 | 6.7 | 0.0 | | 100.0 | 0.0 | 0.0 | 0.0 | | 2.7 | 97.3 | 0.0 | 0.0 | | 0.0 | 0.0 | 100.0 | 0.0 | | |
| Total % | 3.7 | 37.5 | 2.9 | 0.0 | 44.1 | 26.5 | 0.0 | 0.0 | 0.0 | 26.5 | 0.7 | 26.5 | 0.0 | 0.0 | 27.2 | 0.0 | 0.0 | 2.2 | 0.0 | 2.2 | |
| Exiting Leg Total | | | | | 75 | | | | | 5 | | | | | 51 | | | | | 5 | 136 |
| Buses | 1 | 31 | 0 | 0 | 32 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 0 | 0 | 27 | 0 | 0 | 0 | 0 | 0 | 59 |
| % Buses | 20.0 | 60.8 | 0.0 | 0.0 | 53.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 75.0 | 0.0 | 0.0 | 73.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 43.4 |
| Exiting Leg Total | | | | | 27 | | | | | 0 | | | | | 31 | | | | | 1 | 59 |
| Single-Unit Trucks | 4 | 19 | 0 | 0 | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 2 | 0 | 2 | 31 |
| % Single-Unit | 80.0 | 37.3 | 0.0 | 0.0 | 38.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 16.7 | 0.0 | 0.0 | 16.2 | 0.0 | 0.0 | 66.7 | 0.0 | 66.7 | 22.8 |
| Exiting Leg Total | | | | | 8 | | | | | 0 | | | | | 19 | | | | | 4 | 31 |
| Articulated Trucks | 0 | 1 | 4 | 0 | 5 | 36 | 0 | 0 | 0 | 36 | 1 | 3 | 0 | 0 | 4 | 0 | 0 | 1 | 0 | 1 | 46 |
| % Articulated | 0.0 | 2.0 | 100.0 | 0.0 | 8.3 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | 8.3 | 0.0 | 0.0 | 10.8 | 0.0 | 0.0 | 33.3 | 0.0 | 33.3 | 33.8 |
| Exiting Leg Total | | | | | 40 | | | | | 5 | | | | | 1 | | | | | 0 | 46 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:00 PM | Summer Street from North | | | | | Massport Freight Cor from East | | | | | Summer Street from South | | | | | FedEx Driveway from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 0 | 5 | 4 | 0 | 9 | 16 | 0 | 0 | 0 | 16 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 27 |
| 4:15 PM | 0 | 9 | 0 | 0 | 9 | 13 | 0 | 0 | 0 | 13 | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 28 |
| 4:30 PM | 3 | 9 | 0 | 0 | 12 | 4 | 0 | 0 | 0 | 4 | 1 | 4 | 0 | 0 | 5 | 0 | 0 | 1 | 0 | 1 | 22 |
| 4:45 PM | 0 | 6 | 0 | 0 | 6 | 2 | 0 | 0 | 0 | 2 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 1 | 0 | 1 | 14 |
| Total Volume | 3 | 29 | 4 | 0 | 36 | 35 | 0 | 0 | 0 | 35 | 1 | 17 | 0 | 0 | 18 | 0 | 0 | 2 | 0 | 2 | 91 |
| % Approach Total | 8.3 | 80.6 | 11.1 | 0.0 | | 100.0 | 0.0 | 0.0 | 0.0 | | 5.6 | 94.4 | 0.0 | 0.0 | | 0.0 | 0.0 | 100.0 | 0.0 | | |
| PHF | 0.250 | 0.806 | 0.250 | 0.000 | 0.750 | 0.547 | 0.000 | 0.000 | 0.000 | 0.547 | 0.250 | 0.708 | 0.000 | 0.000 | 0.750 | 0.000 | 0.000 | 0.500 | 0.000 | 0.500 | 0.813 |
| Buses | 0 | 15 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 28 |
| Buses % | 0.0 | 51.7 | 0.0 | 0.0 | 41.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 76.5 | 0.0 | 0.0 | 72.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 30.8 |
| Single-Unit Trucks | 3 | 13 | 0 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 1 | 19 |
| Single-Unit % | 100.0 | 44.8 | 0.0 | 0.0 | 44.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 11.8 | 0.0 | 0.0 | 11.1 | 0.0 | 0.0 | 50.0 | 0.0 | 50.0 | 20.9 |
| Articulated Trucks | 0 | 1 | 4 | 0 | 5 | 35 | 0 | 0 | 0 | 35 | 1 | 2 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 1 | 44 |
| Articulated % | 0.0 | 3.4 | 100.0 | 0.0 | 13.9 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | 11.8 | 0.0 | 0.0 | 16.7 | 0.0 | 0.0 | 50.0 | 0.0 | 50.0 | 48.4 |
| Buses | 0 | 15 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 28 |
| Single-Unit Trucks | 3 | 13 | 0 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 1 | 19 |
| Articulated Trucks | 0 | 1 | 4 | 0 | 5 | 35 | 0 | 0 | 0 | 35 | 1 | 2 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 1 | 44 |
| Total Entering Leg | 3 | 29 | 4 | 0 | 36 | 35 | 0 | 0 | 0 | 35 | 1 | 17 | 0 | 0 | 18 | 0 | 0 | 2 | 0 | 2 | 91 |
| Buses | | | | | 13 | | | | | 0 | | | | | 15 | | | | | 0 | 28 |
| Single-Unit Trucks | | | | | 3 | | | | | 0 | | | | | 13 | | | | | 3 | 19 |
| Articulated Trucks | | | | | 38 | | | | | 5 | | | | | 1 | | | | | 0 | 44 |
| Total Exiting Leg | | | | | 54 | | | | | 5 | | | | | 29 | | | | | 3 | 91 |

PDI File #: **186316 AA**
Location: **N: Summer Street S: Summer Street**
Location: **E: Massport Freight Cor W: FedEx Driveway**
City, State: **Boston, MA**
Client: **VHB/ S. Mandzo**
Site Code: **TBA**
Count Date: **Monday, June 11, 2018**
Start Time: **4:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Class: **Cars**

| | Summer Street | | | | | Massport Freight Cor | | | | | Summer Street | | | | | FedEx Driveway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 3 | 172 | 1 | 0 | 176 | 2 | 0 | 6 | 0 | 8 | 0 | 118 | 2 | 0 | 120 | 1 | 0 | 5 | 0 | 6 | 310 |
| 4:15 PM | 6 | 200 | 0 | 0 | 206 | 3 | 0 | 2 | 0 | 5 | 0 | 129 | 1 | 0 | 130 | 1 | 0 | 4 | 0 | 5 | 346 |
| 4:30 PM | 3 | 203 | 0 | 0 | 206 | 4 | 0 | 4 | 0 | 8 | 0 | 115 | 0 | 0 | 115 | 1 | 0 | 3 | 0 | 4 | 333 |
| 4:45 PM | 2 | 220 | 0 | 0 | 222 | 7 | 0 | 5 | 0 | 12 | 0 | 135 | 1 | 0 | 136 | 5 | 0 | 4 | 0 | 9 | 379 |
| Total | 14 | 795 | 1 | 0 | 810 | 16 | 0 | 17 | 0 | 33 | 0 | 497 | 4 | 0 | 501 | 8 | 0 | 16 | 0 | 24 | 1368 |
| 5:00 PM | 3 | 255 | 0 | 0 | 258 | 4 | 1 | 7 | 0 | 12 | 1 | 123 | 1 | 0 | 125 | 3 | 0 | 4 | 0 | 7 | 402 |
| 5:15 PM | 8 | 213 | 1 | 1 | 223 | 1 | 0 | 5 | 0 | 6 | 0 | 101 | 1 | 0 | 102 | 2 | 0 | 9 | 0 | 11 | 342 |
| 5:30 PM | 9 | 222 | 0 | 0 | 231 | 0 | 0 | 1 | 0 | 1 | 3 | 90 | 0 | 0 | 93 | 2 | 0 | 6 | 0 | 8 | 333 |
| 5:45 PM | 7 | 228 | 0 | 0 | 235 | 0 | 0 | 0 | 0 | 0 | 0 | 103 | 4 | 0 | 107 | 3 | 0 | 8 | 0 | 11 | 353 |
| Total | 27 | 918 | 1 | 1 | 947 | 5 | 1 | 13 | 0 | 19 | 4 | 417 | 6 | 0 | 427 | 10 | 0 | 27 | 0 | 37 | 1430 |
| Grand Total | 41 | 1713 | 2 | 1 | 1757 | 21 | 1 | 30 | 0 | 52 | 4 | 914 | 10 | 0 | 928 | 18 | 0 | 43 | 0 | 61 | 2798 |
| Approach % | 2.3 | 97.5 | 0.1 | 0.1 | | 40.4 | 1.9 | 57.7 | 0.0 | | 0.4 | 98.5 | 1.1 | 0.0 | | 29.5 | 0.0 | 70.5 | 0.0 | | |
| Total % | 1.5 | 61.2 | 0.1 | 0.0 | 62.8 | 0.8 | 0.0 | 1.1 | 0.0 | 1.9 | 0.1 | 32.7 | 0.4 | 0.0 | 33.2 | 0.6 | 0.0 | 1.5 | 0.0 | 2.2 | |
| Exiting Leg Total | | | | | 979 | | | | | 6 | | | | | 1761 | | | | | 52 | 2798 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:15 PM | Summer Street | | | | | Massport Freight Cor | | | | | Summer Street | | | | | FedEx Driveway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:15 PM | 6 | 200 | 0 | 0 | 206 | 3 | 0 | 2 | 0 | 5 | 0 | 129 | 1 | 0 | 130 | 1 | 0 | 4 | 0 | 5 | 346 |
| 4:30 PM | 3 | 203 | 0 | 0 | 206 | 4 | 0 | 4 | 0 | 8 | 0 | 115 | 0 | 0 | 115 | 1 | 0 | 3 | 0 | 4 | 333 |
| 4:45 PM | 2 | 220 | 0 | 0 | 222 | 7 | 0 | 5 | 0 | 12 | 0 | 135 | 1 | 0 | 136 | 5 | 0 | 4 | 0 | 9 | 379 |
| 5:00 PM | 3 | 255 | 0 | 0 | 258 | 4 | 1 | 7 | 0 | 12 | 1 | 123 | 1 | 0 | 125 | 3 | 0 | 4 | 0 | 7 | 402 |
| Total Volume | 14 | 878 | 0 | 0 | 892 | 18 | 1 | 18 | 0 | 37 | 1 | 502 | 3 | 0 | 506 | 10 | 0 | 15 | 0 | 25 | 1460 |
| % Approach Total | 1.6 | 98.4 | 0.0 | 0.0 | | 48.6 | 2.7 | 48.6 | 0.0 | | 0.2 | 99.2 | 0.6 | 0.0 | | 40.0 | 0.0 | 60.0 | 0.0 | | |
| PHF | 0.583 | 0.861 | 0.000 | 0.000 | 0.864 | 0.643 | 0.250 | 0.643 | 0.000 | 0.771 | 0.250 | 0.930 | 0.750 | 0.000 | 0.930 | 0.500 | 0.000 | 0.938 | 0.000 | 0.694 | 0.908 |
| Entering Leg | 14 | 878 | 0 | 0 | 892 | 18 | 1 | 18 | 0 | 37 | 1 | 502 | 3 | 0 | 506 | 10 | 0 | 15 | 0 | 25 | 1460 |
| Exiting Leg | | | | | 535 | | | | | 1 | | | | | 906 | | | | | 18 | 1460 |
| Total | | | | | 1427 | | | | | 38 | | | | | 1412 | | | | | 43 | 2920 |

PDI File #: **186316 AA**
Location: **N: Summer Street S: Summer Street**
Location: **E: Massport Freight Cor W: FedEx Driveway**
City, State: **Boston, MA**
Client: **VHB/ S. Mandzo**
Site Code: **TBA**
Count Date: **Monday, June 11, 2018**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Light Goods Vehicle

| | Summer Street | | | | | Massport Freight Cor | | | | | Summer Street | | | | | FedEx Driveway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 0 | 21 | 0 | 0 | 21 | 0 | 0 | 1 | 0 | 1 | 0 | 12 | 0 | 0 | 12 | 0 | 0 | 1 | 0 | 1 | 35 |
| 4:15 PM | 0 | 25 | 0 | 0 | 25 | 2 | 0 | 2 | 0 | 4 | 0 | 9 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 38 |
| 4:30 PM | 1 | 16 | 0 | 0 | 17 | 0 | 0 | 3 | 0 | 3 | 0 | 16 | 0 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 36 |
| 4:45 PM | 0 | 14 | 0 | 0 | 14 | 0 | 0 | 6 | 0 | 6 | 0 | 12 | 0 | 0 | 12 | 0 | 0 | 1 | 0 | 1 | 33 |
| Total | 1 | 76 | 0 | 0 | 77 | 2 | 0 | 12 | 0 | 14 | 0 | 49 | 0 | 0 | 49 | 0 | 0 | 2 | 0 | 2 | 142 |
| 5:00 PM | 1 | 15 | 0 | 0 | 16 | 3 | 0 | 0 | 0 | 3 | 0 | 9 | 0 | 0 | 9 | 0 | 0 | 1 | 0 | 1 | 29 |
| 5:15 PM | 1 | 16 | 0 | 0 | 17 | 3 | 0 | 3 | 0 | 6 | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 29 |
| 5:30 PM | 2 | 19 | 0 | 0 | 21 | 0 | 0 | 1 | 0 | 1 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 3 | 0 | 3 | 29 |
| 5:45 PM | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 4 | 0 | 0 | 1 | 0 | 1 | 15 |
| Total | 4 | 60 | 0 | 0 | 64 | 6 | 0 | 4 | 0 | 10 | 0 | 22 | 1 | 0 | 23 | 0 | 0 | 5 | 0 | 5 | 102 |
| Grand Total | 5 | 136 | 0 | 0 | 141 | 8 | 0 | 16 | 0 | 24 | 0 | 71 | 1 | 0 | 72 | 0 | 0 | 7 | 0 | 7 | 244 |
| Approach % | 3.5 | 96.5 | 0.0 | 0.0 | | 33.3 | 0.0 | 66.7 | 0.0 | | 0.0 | 98.6 | 1.4 | 0.0 | | 0.0 | 0.0 | 100.0 | 0.0 | | |
| Total % | 2.0 | 55.7 | 0.0 | 0.0 | 57.8 | 3.3 | 0.0 | 6.6 | 0.0 | 9.8 | 0.0 | 29.1 | 0.4 | 0.0 | 29.5 | 0.0 | 0.0 | 2.9 | 0.0 | 2.9 | |
| Exiting Leg Total | | | | | 86 | | | | | 0 | | | | | 152 | | | | | 6 | 244 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:00 PM | Summer Street | | | | | Massport Freight Cor | | | | | Summer Street | | | | | FedEx Driveway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 0 | 21 | 0 | 0 | 21 | 0 | 0 | 1 | 0 | 1 | 0 | 12 | 0 | 0 | 12 | 0 | 0 | 1 | 0 | 1 | 35 |
| 4:15 PM | 0 | 25 | 0 | 0 | 25 | 2 | 0 | 2 | 0 | 4 | 0 | 9 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 38 |
| 4:30 PM | 1 | 16 | 0 | 0 | 17 | 0 | 0 | 3 | 0 | 3 | 0 | 16 | 0 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 36 |
| 4:45 PM | 0 | 14 | 0 | 0 | 14 | 0 | 0 | 6 | 0 | 6 | 0 | 12 | 0 | 0 | 12 | 0 | 0 | 1 | 0 | 1 | 33 |
| Total Volume | 1 | 76 | 0 | 0 | 77 | 2 | 0 | 12 | 0 | 14 | 0 | 49 | 0 | 0 | 49 | 0 | 0 | 2 | 0 | 2 | 142 |
| % Approach Total | 1.3 | 98.7 | 0.0 | 0.0 | | 14.3 | 0.0 | 85.7 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 100.0 | 0.0 | | |
| PHF | 0.250 | 0.760 | 0.000 | 0.000 | 0.770 | 0.250 | 0.000 | 0.500 | 0.000 | 0.583 | 0.000 | 0.766 | 0.000 | 0.000 | 0.766 | 0.000 | 0.000 | 0.500 | 0.000 | 0.500 | 0.934 |
| Entering Leg | 1 | 76 | 0 | 0 | 77 | 2 | 0 | 12 | 0 | 14 | 0 | 49 | 0 | 0 | 49 | 0 | 0 | 2 | 0 | 2 | 142 |
| Exiting Leg | | | | | 53 | | | | | 0 | | | | | 88 | | | | | 1 | 142 |
| Total | | | | | 130 | | | | | 14 | | | | | 137 | | | | | 3 | 284 |

PDI File #: **186316 AA**
Location: **N: Summer Street S: Summer Street**
Location: **E: Massport Freight Cor W: FedEx Driveway**
City, State: **Boston, MA**
Client: **VHB/ S. Mandzo**
Site Code: **TBA**
Count Date: **Monday, June 11, 2018**
Start Time: **4:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Class: **Buses**

| | Summer Street | | | | | Massport Freight Cor | | | | | Summer Street | | | | | FedEx Driveway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 6 |
| 4:15 PM | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 9 |
| 4:30 PM | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 6 |
| 4:45 PM | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 7 |
| Total | 0 | 15 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 28 |
| 5:00 PM | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 5 |
| 5:15 PM | 1 | 7 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 11 |
| 5:30 PM | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 10 |
| 5:45 PM | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 5 |
| Total | 1 | 16 | 0 | 0 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 31 |
| Grand Total | 1 | 31 | 0 | 0 | 32 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 0 | 0 | 27 | 0 | 0 | 0 | 0 | 0 | 59 |
| Approach % | 3.1 | 96.9 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total % | 1.7 | 52.5 | 0.0 | 0.0 | 54.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 45.8 | 0.0 | 0.0 | 45.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Exiting Leg Total | | | | | 27 | | | | | 0 | | | | | 31 | | | | | 1 | 59 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:45 PM | Summer Street | | | | | Massport Freight Cor | | | | | Summer Street | | | | | FedEx Driveway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:45 PM | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 7 |
| 5:00 PM | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 5 |
| 5:15 PM | 1 | 7 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 11 |
| 5:30 PM | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 10 |
| Total Volume | 1 | 17 | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 33 |
| % Approach Total | 5.6 | 94.4 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | |
| PHF | 0.250 | 0.607 | 0.000 | 0.000 | 0.563 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.625 | 0.000 | 0.000 | 0.625 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.750 |
| Entering Leg | 1 | 17 | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 33 |
| Exiting Leg | | | | | 15 | | | | | 0 | | | | | 17 | | | | | 1 | 33 |
| Total | | | | | 33 | | | | | 0 | | | | | 32 | | | | | 1 | 66 |

PDI File #: **186316 AA**
Location: **N: Summer Street S: Summer Street**
Location: **E: Massport Freight Cor W: FedEx Driveway**
City, State: **Boston, MA**
Client: **VHB/ S. Mandzo**
Site Code: **TBA**
Count Date: **Monday, June 11, 2018**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Single-Unit Trucks

| | Summer Street from North | | | | | Massport Freight Cor from East | | | | | Summer Street from South | | | | | FedEx Driveway from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 4:15 PM | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 6 |
| 4:30 PM | 3 | 5 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 10 |
| 4:45 PM | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Total | 3 | 13 | 0 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 1 | 19 |
| 5:00 PM | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 4 |
| 5:15 PM | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 |
| 5:30 PM | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| 5:45 PM | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 |
| Total | 1 | 6 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 1 | 0 | 1 | 12 |
| Grand Total | 4 | 19 | 0 | 0 | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 2 | 0 | 2 | 31 |
| Approach % | 17.4 | 82.6 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 100.0 | 0.0 | | |
| Total % | 12.9 | 61.3 | 0.0 | 0.0 | 74.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 19.4 | 0.0 | 0.0 | 19.4 | 0.0 | 0.0 | 6.5 | 0.0 | 6.5 | |
| Exiting Leg Total | | | | | 8 | | | | | 0 | | | | | 19 | | | | | 4 | 31 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:15 PM | Summer Street from North | | | | | Massport Freight Cor from East | | | | | Summer Street from South | | | | | FedEx Driveway from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:15 PM | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 6 |
| 4:30 PM | 3 | 5 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 10 |
| 4:45 PM | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 5:00 PM | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 4 |
| Total Volume | 3 | 14 | 0 | 0 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 2 | 0 | 2 | 22 |
| % Approach Total | 17.6 | 82.4 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 100.0 | 0.0 | | |
| PHF | 0.250 | 0.700 | 0.000 | 0.000 | 0.531 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.750 | 0.000 | 0.000 | 0.750 | 0.000 | 0.000 | 0.500 | 0.000 | 0.500 | 0.550 |
| Entering Leg | 3 | 14 | 0 | 0 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 2 | 0 | 2 | 22 |
| Exiting Leg | | | | | 5 | | | | | 0 | | | | | 14 | | | | | 3 | 22 |
| Total | | | | | 22 | | | | | 0 | | | | | 17 | | | | | 5 | 44 |

PDI File #: **186316 AA**
Location: **N: Summer Street S: Summer Street**
Location: **E: Massport Freight Cor W: FedEx Driveway**
City, State: **Boston, MA**
Client: **VHB/ S. Mandzo**
Site Code: **TBA**
Count Date: **Monday, June 11, 2018**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Articulated Trucks

| | Summer Street from North | | | | | Massport Freight Cor from East | | | | | Summer Street from South | | | | | FedEx Driveway from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 0 | 0 | 4 | 0 | 4 | 16 | 0 | 0 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| 4:30 PM | 0 | 1 | 0 | 0 | 1 | 4 | 0 | 0 | 0 | 4 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 6 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 1 | 5 |
| Total | 0 | 1 | 4 | 0 | 5 | 35 | 0 | 0 | 0 | 35 | 1 | 2 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 1 | 44 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| Grand Total | 0 | 1 | 4 | 0 | 5 | 36 | 0 | 0 | 0 | 36 | 1 | 3 | 0 | 0 | 4 | 0 | 0 | 1 | 0 | 1 | 46 |
| Approach % | 0.0 | 20.0 | 80.0 | 0.0 | | 100.0 | 0.0 | 0.0 | 0.0 | | 25.0 | 75.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 100.0 | 0.0 | | |
| Total % | 0.0 | 2.2 | 8.7 | 0.0 | 10.9 | 78.3 | 0.0 | 0.0 | 0.0 | 78.3 | 2.2 | 6.5 | 0.0 | 0.0 | 8.7 | 0.0 | 0.0 | 2.2 | 0.0 | 2.2 | |
| Exiting Leg Total | | | | | 40 | | | | | 5 | | | | | 1 | | | | | 0 | 46 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:00 PM | Summer Street from North | | | | | Massport Freight Cor from East | | | | | Summer Street from South | | | | | FedEx Driveway from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 0 | 0 | 4 | 0 | 4 | 16 | 0 | 0 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| 4:30 PM | 0 | 1 | 0 | 0 | 1 | 4 | 0 | 0 | 0 | 4 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 6 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 1 | 5 |
| Total Volume | 0 | 1 | 4 | 0 | 5 | 35 | 0 | 0 | 0 | 35 | 1 | 2 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 1 | 44 |
| % Approach Total | 0.0 | 20.0 | 80.0 | 0.0 | | 100.0 | 0.0 | 0.0 | 0.0 | | 33.3 | 66.7 | 0.0 | 0.0 | | 0.0 | 0.0 | 100.0 | 0.0 | | |
| PHF | 0.000 | 0.250 | 0.250 | 0.000 | 0.313 | 0.547 | 0.000 | 0.000 | 0.000 | 0.547 | 0.250 | 0.250 | 0.000 | 0.000 | 0.375 | 0.000 | 0.000 | 0.250 | 0.000 | 0.250 | 0.550 |
| Entering Leg | 0 | 1 | 4 | 0 | 5 | 35 | 0 | 0 | 0 | 35 | 1 | 2 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 1 | 44 |
| Exiting Leg | | | | | 38 | | | | | 5 | | | | | 1 | | | | | 0 | 44 |
| Total | | | | | 43 | | | | | 40 | | | | | 4 | | | | | 1 | 88 |

PDI File #: **186316 AA**
Location: **N: Summer Street S: Summer Street**
Location: **E: Massport Freight Cor W: FedEx Driveway**
City, State: **Boston, MA**
Client: **VHB/ S. Mandzo**
Site Code: **TBA**
Count Date: **Monday, June 11, 2018**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Bicycles (on Roadway and Crosswalks)

| | Summer Street from North | | | | | | | Massport Freight Cor from East | | | | | | | Summer Street from South | | | | | | | FedEx Driveway from West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 4:00 PM | 1 | 2 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 4:15 PM | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 4:30 PM | 2 | 3 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 4:45 PM | 0 | 7 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 9 |
| Total | 3 | 13 | 0 | 0 | 0 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 23 |
| 5:00 PM | 0 | 11 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| 5:15 PM | 0 | 9 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 10 |
| 5:30 PM | 0 | 7 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 0 | 2 | 3 | 13 |
| 5:45 PM | 0 | 7 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 11 |
| Total | 0 | 34 | 0 | 0 | 0 | 0 | 34 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 6 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 1 | 0 | 0 | 5 | 6 | 47 |
| Grand Total | 3 | 47 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 12 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 2 | 0 | 0 | 5 | 7 | 70 |
| Approach % | 6.0 | 94.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 28.6 | 0.0 | 0.0 | 71.4 | | |
| Total % | 4.3 | 67.1 | 0.0 | 0.0 | 0.0 | 0.0 | 71.4 | 0.0 | 0.0 | 0.0 | 0.0 | 1.4 | 0.0 | 1.4 | 0.0 | 17.1 | 0.0 | 0.0 | 0.0 | 0.0 | 17.1 | 0.0 | 0.0 | 2.9 | 0.0 | 0.0 | 7.1 | 10.0 | |
| Exiting Leg Total | | | | | | | 14 | | | | | | | 1 | | | | | | | 47 | | | | | | | 8 | 70 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 5:00 PM | Summer Street from North | | | | | | | Massport Freight Cor from East | | | | | | | Summer Street from South | | | | | | | FedEx Driveway from West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 5:00 PM | 0 | 11 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| 5:15 PM | 0 | 9 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 10 |
| 5:30 PM | 0 | 7 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 0 | 2 | 3 | 13 |
| 5:45 PM | 0 | 7 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 11 |
| Total Volume | 0 | 34 | 0 | 0 | 0 | 0 | 34 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 6 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 1 | 0 | 0 | 5 | 6 | 47 |
| % Approach Total | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 16.7 | 0.0 | 0.0 | 83.3 | | |
| PHF | 0.000 | 0.773 | 0.000 | 0.000 | 0.000 | 0.000 | 0.773 | 0.000 | 0.000 | 0.000 | 0.000 | 0.250 | 0.000 | 0.250 | 0.000 | 0.500 | 0.000 | 0.000 | 0.000 | 0.000 | 0.500 | 0.000 | 0.000 | 0.250 | 0.000 | 0.000 | 0.625 | 0.500 | 0.904 |
| Entering Leg | 0 | 34 | 0 | 0 | 0 | 0 | 34 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 6 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 1 | 0 | 0 | 5 | 6 | 47 |
| Exiting Leg | | | | | | | 7 | | | | | | | 1 | | | | | | | 34 | | | | | | | 5 | 47 |
| Total | | | | | | | 41 | | | | | | | 2 | | | | | | | 40 | | | | | | | 11 | 94 |

PDI File #: **186316 AA**
Location: **N: Summer Street S: Summer Street**
Location: **E: Massport Freight Cor W: FedEx Driveway**
City, State: **Boston, MA**
Client: **VHB/ S. Mandzo**
Site Code: **TBA**
Count Date: **Monday, June 11, 2018**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Pedestrians

| | Summer Street | | | | | | | Massport Freight Cor | | | | | | | Summer Street | | | | | | | FedEx Driveway | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | | | from East | | | | | | | from South | | | | | | | from West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 2 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 8 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 6 | 6 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 7 | 20 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 6 | 27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7 | 9 | 36 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 1 | 19 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 7 | 5 | 12 | 34 |
| Total | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 49 | 15 | 64 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 11 | 19 | 30 | 98 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 8 | 26 | 0 | 0 | 0 | 0 | 5 | 0 | 5 | 0 | 0 | 0 | 0 | 3 | 12 | 15 | 46 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 | 5 | 42 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 3 | 21 | 24 | 69 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | 5 | 37 | 0 | 0 | 0 | 0 | 4 | 1 | 5 | 0 | 0 | 0 | 0 | 4 | 35 | 39 | 81 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 43 | 20 | 63 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 4 | 32 | 36 | 102 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 130 | 38 | 168 | 0 | 0 | 0 | 0 | 10 | 6 | 16 | 0 | 0 | 0 | 0 | 14 | 100 | 114 | 298 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 179 | 53 | 232 | 0 | 0 | 0 | 0 | 13 | 6 | 19 | 0 | 0 | 0 | 0 | 25 | 119 | 144 | 396 |
| Approach % | 0 | 0 | 0 | 0 | 0 | 100 | | 0 | 0 | 0 | 0 | 77.2 | 22.8 | | 0 | 0 | 0 | 0 | 68.4 | 31.6 | | 0 | 0 | 0 | 0 | 17.4 | 82.6 | | |
| Total % | 0 | 0 | 0 | 0 | 0 | 0.25 | 0.25 | 0 | 0 | 0 | 0 | 45.2 | 13.4 | 58.6 | 0 | 0 | 0 | 0 | 3.28 | 1.52 | 4.8 | 0 | 0 | 0 | 0 | 6.31 | 30.1 | 36.4 | |
| Exiting Leg Total | | | | | | | 1 | | | | | | | 232 | | | | | | | 19 | | | | | | | 144 | 396 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 5:00 PM | Summer Street | | | | | | | Massport Freight Cor | | | | | | | Summer Street | | | | | | | FedEx Driveway | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | | | from East | | | | | | | from South | | | | | | | from West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 8 | 26 | 0 | 0 | 0 | 0 | 5 | 0 | 5 | 0 | 0 | 0 | 0 | 3 | 12 | 15 | 46 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 | 5 | 42 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 3 | 21 | 24 | 69 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | 5 | 37 | 0 | 0 | 0 | 0 | 4 | 1 | 5 | 0 | 0 | 0 | 0 | 4 | 35 | 39 | 81 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 43 | 20 | 63 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 4 | 32 | 36 | 102 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 130 | 38 | 168 | 0 | 0 | 0 | 0 | 10 | 6 | 16 | 0 | 0 | 0 | 0 | 14 | 100 | 114 | 298 |
| % Approach Total | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 77.4 | 22.6 | | 0.0 | 0.0 | 0.0 | 0.0 | 62.5 | 37.5 | | 0.0 | 0.0 | 0.0 | 0.0 | 12.3 | 87.7 | | |
| PHF | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.756 | 0.475 | 0.667 | 0.000 | 0.000 | 0.000 | 0.000 | 0.500 | 0.500 | 0.800 | 0.000 | 0.000 | 0.000 | 0.000 | 0.875 | 0.714 | 0.731 | 0.730 |
| Entering Leg | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 130 | 38 | 168 | 0 | 0 | 0 | 0 | 10 | 6 | 16 | 0 | 0 | 0 | 0 | 14 | 100 | 114 | 298 |
| Exiting Leg | | | | | | | 0 | | | | | | | 168 | | | | | | | 16 | | | | | | | 114 | 298 |
| Total | | | | | | | 0 | | | | | | | 336 | | | | | | | 32 | | | | | | | 228 | 596 |

PDI File #: **186316 AAA**
Location: **N: Summer Street S: Summer Street**
Location: **E: Massport Freight Cor W: FedEx Driveway**
City, State: **Boston, MA**
Client: **VHB/ S. Mandzo**
Site Code: **TBA**
Count Date: **Tuesday, June 12, 2018**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Cars and Heavy Vehicles (Combined)

| | Summer Street | | | | | Massport Freight Cor | | | | | Summer Street | | | | | FedEx Driveway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 3 | 101 | 15 | 0 | 119 | 6 | 0 | 2 | 0 | 8 | 9 | 267 | 0 | 0 | 276 | 2 | 0 | 1 | 0 | 3 | 406 |
| 7:15 AM | 0 | 92 | 14 | 0 | 106 | 8 | 0 | 1 | 0 | 9 | 6 | 296 | 1 | 0 | 303 | 0 | 0 | 2 | 0 | 2 | 420 |
| 7:30 AM | 0 | 112 | 11 | 0 | 123 | 11 | 0 | 0 | 0 | 11 | 5 | 297 | 0 | 0 | 302 | 0 | 0 | 0 | 0 | 0 | 436 |
| 7:45 AM | 1 | 109 | 12 | 0 | 122 | 16 | 0 | 3 | 0 | 19 | 3 | 261 | 0 | 0 | 264 | 0 | 0 | 1 | 0 | 1 | 406 |
| Total | 4 | 414 | 52 | 0 | 470 | 41 | 0 | 6 | 0 | 47 | 23 | 1121 | 1 | 0 | 1145 | 2 | 0 | 4 | 0 | 6 | 1668 |
| 8:00 AM | 1 | 122 | 17 | 0 | 140 | 13 | 0 | 9 | 0 | 22 | 2 | 247 | 2 | 0 | 251 | 1 | 0 | 0 | 0 | 1 | 414 |
| 8:15 AM | 3 | 123 | 11 | 0 | 137 | 23 | 0 | 5 | 0 | 28 | 7 | 228 | 0 | 0 | 235 | 0 | 0 | 1 | 0 | 1 | 401 |
| 8:30 AM | 1 | 128 | 12 | 0 | 141 | 11 | 0 | 6 | 0 | 17 | 8 | 200 | 1 | 0 | 209 | 3 | 1 | 4 | 0 | 8 | 375 |
| 8:45 AM | 2 | 137 | 5 | 0 | 144 | 6 | 0 | 2 | 0 | 8 | 4 | 185 | 3 | 1 | 193 | 0 | 1 | 19 | 0 | 20 | 365 |
| Total | 7 | 510 | 45 | 0 | 562 | 53 | 0 | 22 | 0 | 75 | 21 | 860 | 6 | 1 | 888 | 4 | 2 | 24 | 0 | 30 | 1555 |
| Grand Total | 11 | 924 | 97 | 0 | 1032 | 94 | 0 | 28 | 0 | 122 | 44 | 1981 | 7 | 1 | 2033 | 6 | 2 | 28 | 0 | 36 | 3223 |
| Approach % | 1.1 | 89.5 | 9.4 | 0.0 | | 77.0 | 0.0 | 23.0 | 0.0 | | 2.2 | 97.4 | 0.3 | 0.0 | | 16.7 | 5.6 | 77.8 | 0.0 | | |
| Total % | 0.3 | 28.7 | 3.0 | 0.0 | 32.0 | 2.9 | 0.0 | 0.9 | 0.0 | 3.8 | 1.4 | 61.5 | 0.2 | 0.0 | 63.1 | 0.2 | 0.1 | 0.9 | 0.0 | 1.1 | |
| Exiting Leg Total | | | | | 2103 | | | | | 143 | | | | | 959 | | | | | 18 | 3223 |
| Cars | 11 | 849 | 40 | 0 | 900 | 19 | 0 | 23 | 0 | 42 | 41 | 1890 | 7 | 1 | 1939 | 6 | 2 | 20 | 0 | 28 | 2909 |
| % Cars | 100.0 | 91.9 | 41.2 | 0.0 | 87.2 | 20.2 | 0.0 | 82.1 | 0.0 | 34.4 | 93.2 | 95.4 | 100.0 | 100.0 | 95.4 | 100.0 | 100.0 | 71.4 | 0.0 | 77.8 | 90.3 |
| Exiting Leg Total | | | | | 1929 | | | | | 83 | | | | | 879 | | | | | 18 | 2909 |
| Heavy Vehicles | 0 | 75 | 57 | 0 | 132 | 75 | 0 | 5 | 0 | 80 | 3 | 91 | 0 | 0 | 94 | 0 | 0 | 8 | 0 | 8 | 314 |
| % Heavy Vehicles | 0.0 | 8.1 | 58.8 | 0.0 | 12.8 | 79.8 | 0.0 | 17.9 | 0.0 | 65.6 | 6.8 | 4.6 | 0.0 | 0.0 | 4.6 | 0.0 | 0.0 | 28.6 | 0.0 | 22.2 | 9.7 |
| Exiting Leg Total | | | | | 174 | | | | | 60 | | | | | 80 | | | | | 0 | 314 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:15 AM | Summer Street | | | | | Massport Freight Cor | | | | | Summer Street | | | | | FedEx Driveway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:15 AM | 0 | 92 | 14 | 0 | 106 | 8 | 0 | 1 | 0 | 9 | 6 | 296 | 1 | 0 | 303 | 0 | 0 | 2 | 0 | 2 | 420 |
| 7:30 AM | 0 | 112 | 11 | 0 | 123 | 11 | 0 | 0 | 0 | 11 | 5 | 297 | 0 | 0 | 302 | 0 | 0 | 0 | 0 | 0 | 436 |
| 7:45 AM | 1 | 109 | 12 | 0 | 122 | 16 | 0 | 3 | 0 | 19 | 3 | 261 | 0 | 0 | 264 | 0 | 0 | 1 | 0 | 1 | 406 |
| 8:00 AM | 1 | 122 | 17 | 0 | 140 | 13 | 0 | 9 | 0 | 22 | 2 | 247 | 2 | 0 | 251 | 1 | 0 | 0 | 0 | 1 | 414 |
| Total Volume | 2 | 435 | 54 | 0 | 491 | 48 | 0 | 13 | 0 | 61 | 16 | 1101 | 3 | 0 | 1120 | 1 | 0 | 3 | 0 | 4 | 1676 |
| % Approach Total | 0.4 | 88.6 | 11.0 | 0.0 | | 78.7 | 0.0 | 21.3 | 0.0 | | 1.4 | 98.3 | 0.3 | 0.0 | | 25.0 | 0.0 | 75.0 | 0.0 | | |
| PHF | 0.500 | 0.891 | 0.794 | 0.000 | 0.877 | 0.750 | 0.000 | 0.361 | 0.000 | 0.693 | 0.667 | 0.927 | 0.375 | 0.000 | 0.924 | 0.250 | 0.000 | 0.375 | 0.000 | 0.500 | 0.961 |
| Cars | 2 | 392 | 26 | 0 | 420 | 8 | 0 | 10 | 0 | 18 | 14 | 1059 | 3 | 0 | 1076 | 1 | 0 | 3 | 0 | 4 | 1518 |
| Cars % | 100.0 | 90.1 | 48.1 | 0.0 | 85.5 | 16.7 | 0.0 | 76.9 | 0.0 | 29.5 | 87.5 | 96.2 | 100.0 | 0.0 | 96.1 | 100.0 | 0.0 | 100.0 | 0.0 | 100.0 | 90.6 |
| Heavy Vehicles | 0 | 43 | 28 | 0 | 71 | 40 | 0 | 3 | 0 | 43 | 2 | 42 | 0 | 0 | 44 | 0 | 0 | 0 | 0 | 0 | 158 |
| Heavy Vehicles % | 0.0 | 9.9 | 51.9 | 0.0 | 14.5 | 83.3 | 0.0 | 23.1 | 0.0 | 70.5 | 12.5 | 3.8 | 0.0 | 0.0 | 3.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 9.4 |
| Cars Enter Leg | 2 | 392 | 26 | 0 | 420 | 8 | 0 | 10 | 0 | 18 | 14 | 1059 | 3 | 0 | 1076 | 1 | 0 | 3 | 0 | 4 | 1518 |
| Heavy Enter Leg | 0 | 43 | 28 | 0 | 71 | 40 | 0 | 3 | 0 | 43 | 2 | 42 | 0 | 0 | 44 | 0 | 0 | 0 | 0 | 0 | 158 |
| Total Entering Leg | 2 | 435 | 54 | 0 | 491 | 48 | 0 | 13 | 0 | 61 | 16 | 1101 | 3 | 0 | 1120 | 1 | 0 | 3 | 0 | 4 | 1676 |
| Cars Exiting Leg | | | | | 1070 | | | | | 40 | | | | | 403 | | | | | 5 | 1518 |
| Heavy Exiting Leg | | | | | 82 | | | | | 30 | | | | | 46 | | | | | 0 | 158 |
| Total Exiting Leg | | | | | 1152 | | | | | 70 | | | | | 449 | | | | | 5 | 1676 |

PDI File #: **186316 AAA**
Location: **N: Summer Street S: Summer Street**
Location: **E: Massport Freight Cor W: FedEx Driveway**
City, State: **Boston, MA**
Client: **VHB/ S. Mandzo**
Site Code: **TBA**
Count Date: **Tuesday, June 12, 2018**
Start Time: **7:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Class: **Cars-Combined (Motorcycles, Cars, Light Goods)**

| | Summer Street | | | | | Massport Freight Cor | | | | | Summer Street | | | | | FedEx Driveway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 3 | 95 | 4 | 0 | 102 | 5 | 0 | 2 | 0 | 7 | 9 | 259 | 0 | 0 | 268 | 2 | 0 | 1 | 0 | 3 | 380 |
| 7:15 AM | 0 | 78 | 6 | 0 | 84 | 1 | 0 | 0 | 0 | 1 | 6 | 283 | 1 | 0 | 290 | 0 | 0 | 2 | 0 | 2 | 377 |
| 7:30 AM | 0 | 100 | 3 | 0 | 103 | 1 | 0 | 0 | 0 | 1 | 4 | 289 | 0 | 0 | 293 | 0 | 0 | 0 | 0 | 0 | 397 |
| 7:45 AM | 1 | 100 | 6 | 0 | 107 | 1 | 0 | 2 | 0 | 3 | 3 | 246 | 0 | 0 | 249 | 0 | 0 | 1 | 0 | 1 | 360 |
| Total | 4 | 373 | 19 | 0 | 396 | 8 | 0 | 4 | 0 | 12 | 22 | 1077 | 1 | 0 | 1100 | 2 | 0 | 4 | 0 | 6 | 1514 |
| 8:00 AM | 1 | 114 | 11 | 0 | 126 | 5 | 0 | 8 | 0 | 13 | 1 | 241 | 2 | 0 | 244 | 1 | 0 | 0 | 0 | 1 | 384 |
| 8:15 AM | 3 | 115 | 3 | 0 | 121 | 6 | 0 | 4 | 0 | 10 | 7 | 213 | 0 | 0 | 220 | 0 | 0 | 1 | 0 | 1 | 352 |
| 8:30 AM | 1 | 119 | 4 | 0 | 124 | 0 | 0 | 6 | 0 | 6 | 7 | 195 | 1 | 0 | 203 | 3 | 1 | 3 | 0 | 7 | 340 |
| 8:45 AM | 2 | 128 | 3 | 0 | 133 | 0 | 0 | 1 | 0 | 1 | 4 | 164 | 3 | 1 | 172 | 0 | 1 | 12 | 0 | 13 | 319 |
| Total | 7 | 476 | 21 | 0 | 504 | 11 | 0 | 19 | 0 | 30 | 19 | 813 | 6 | 1 | 839 | 4 | 2 | 16 | 0 | 22 | 1395 |
| Grand Total | 11 | 849 | 40 | 0 | 900 | 19 | 0 | 23 | 0 | 42 | 41 | 1890 | 7 | 1 | 1939 | 6 | 2 | 20 | 0 | 28 | 2909 |
| Approach % | 1.2 | 94.3 | 4.4 | 0.0 | | 45.2 | 0.0 | 54.8 | 0.0 | | 2.1 | 97.5 | 0.4 | 0.1 | | 21.4 | 7.1 | 71.4 | 0.0 | | |
| Total % | 0.4 | 29.2 | 1.4 | 0.0 | 30.9 | 0.7 | 0.0 | 0.8 | 0.0 | 1.4 | 1.4 | 65.0 | 0.2 | 0.0 | 66.7 | 0.2 | 0.1 | 0.7 | 0.0 | 1.0 | |
| Exiting Leg Total | | | | | 1929 | | | | | 83 | | | | | 879 | | | | | 18 | 2909 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:15 AM | Summer Street | | | | | Massport Freight Cor | | | | | Summer Street | | | | | FedEx Driveway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:15 AM | 0 | 78 | 6 | 0 | 84 | 1 | 0 | 0 | 0 | 1 | 6 | 283 | 1 | 0 | 290 | 0 | 0 | 2 | 0 | 2 | 377 |
| 7:30 AM | 0 | 100 | 3 | 0 | 103 | 1 | 0 | 0 | 0 | 1 | 4 | 289 | 0 | 0 | 293 | 0 | 0 | 0 | 0 | 0 | 397 |
| 7:45 AM | 1 | 100 | 6 | 0 | 107 | 1 | 0 | 2 | 0 | 3 | 3 | 246 | 0 | 0 | 249 | 0 | 0 | 1 | 0 | 1 | 360 |
| 8:00 AM | 1 | 114 | 11 | 0 | 126 | 5 | 0 | 8 | 0 | 13 | 1 | 241 | 2 | 0 | 244 | 1 | 0 | 0 | 0 | 1 | 384 |
| Total Volume | 2 | 392 | 26 | 0 | 420 | 8 | 0 | 10 | 0 | 18 | 14 | 1059 | 3 | 0 | 1076 | 1 | 0 | 3 | 0 | 4 | 1518 |
| % Approach Total | 0.5 | 93.3 | 6.2 | 0.0 | | 44.4 | 0.0 | 55.6 | 0.0 | | 1.3 | 98.4 | 0.3 | 0.0 | | 25.0 | 0.0 | 75.0 | 0.0 | | |
| PHF | 0.500 | 0.860 | 0.591 | 0.000 | 0.833 | 0.400 | 0.000 | 0.313 | 0.000 | 0.346 | 0.583 | 0.916 | 0.375 | 0.000 | 0.918 | 0.250 | 0.000 | 0.375 | 0.000 | 0.500 | 0.956 |
| Entering Leg | 2 | 392 | 26 | 0 | 420 | 8 | 0 | 10 | 0 | 18 | 14 | 1059 | 3 | 0 | 1076 | 1 | 0 | 3 | 0 | 4 | 1518 |
| Exiting Leg | | | | | 1070 | | | | | 40 | | | | | 403 | | | | | 5 | 1518 |
| Total | | | | | 1490 | | | | | 58 | | | | | 1479 | | | | | 9 | 3036 |

PDI File #: **186316 AAA**
Location: **N: Summer Street S: Summer Street**
Location: **E: Massport Freight Cor W: FedEx Driveway**
City, State: **Boston, MA**
Client: **VHB/ S. Mandzo**
Site Code: **TBA**
Count Date: **Tuesday, June 12, 2018**
Start Time: **7:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

| | Summer Street from North | | | | | Massport Freight Cor from East | | | | | Summer Street from South | | | | | FedEx Driveway from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 6 | 11 | 0 | 17 | 1 | 0 | 0 | 0 | 1 | 0 | 8 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 26 |
| 7:15 AM | 0 | 14 | 8 | 0 | 22 | 7 | 0 | 1 | 0 | 8 | 0 | 13 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 43 |
| 7:30 AM | 0 | 12 | 8 | 0 | 20 | 10 | 0 | 0 | 0 | 10 | 1 | 8 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 39 |
| 7:45 AM | 0 | 9 | 6 | 0 | 15 | 15 | 0 | 1 | 0 | 16 | 0 | 15 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 46 |
| Total | 0 | 41 | 33 | 0 | 74 | 33 | 0 | 2 | 0 | 35 | 1 | 44 | 0 | 0 | 45 | 0 | 0 | 0 | 0 | 0 | 154 |
| 8:00 AM | 0 | 8 | 6 | 0 | 14 | 8 | 0 | 1 | 0 | 9 | 1 | 6 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 30 |
| 8:15 AM | 0 | 8 | 8 | 0 | 16 | 17 | 0 | 1 | 0 | 18 | 0 | 15 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 49 |
| 8:30 AM | 0 | 9 | 8 | 0 | 17 | 11 | 0 | 0 | 0 | 11 | 1 | 5 | 0 | 0 | 6 | 0 | 0 | 1 | 0 | 1 | 35 |
| 8:45 AM | 0 | 9 | 2 | 0 | 11 | 6 | 0 | 1 | 0 | 7 | 0 | 21 | 0 | 0 | 21 | 0 | 0 | 7 | 0 | 7 | 46 |
| Total | 0 | 34 | 24 | 0 | 58 | 42 | 0 | 3 | 0 | 45 | 2 | 47 | 0 | 0 | 49 | 0 | 0 | 8 | 0 | 8 | 160 |
| Grand Total | 0 | 75 | 57 | 0 | 132 | 75 | 0 | 5 | 0 | 80 | 3 | 91 | 0 | 0 | 94 | 0 | 0 | 8 | 0 | 8 | 314 |
| Approach % | 0.0 | 56.8 | 43.2 | 0.0 | | 93.8 | 0.0 | 6.3 | 0.0 | | 3.2 | 96.8 | 0.0 | 0.0 | | 0.0 | 0.0 | 100.0 | 0.0 | | |
| Total % | 0.0 | 23.9 | 18.2 | 0.0 | 42.0 | 23.9 | 0.0 | 1.6 | 0.0 | 25.5 | 1.0 | 29.0 | 0.0 | 0.0 | 29.9 | 0.0 | 0.0 | 2.5 | 0.0 | 2.5 | |
| Exiting Leg Total | | | | | 174 | | | | | 60 | | | | | 80 | | | | | 0 | 314 |
| Buses | 0 | 39 | 0 | 0 | 39 | 0 | 0 | 0 | 0 | 0 | 0 | 45 | 0 | 0 | 45 | 0 | 0 | 0 | 0 | 0 | 84 |
| % Buses | 0.0 | 52.0 | 0.0 | 0.0 | 29.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 49.5 | 0.0 | 0.0 | 47.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 26.8 |
| Exiting Leg Total | | | | | 45 | | | | | 0 | | | | | 39 | | | | | 0 | 84 |
| Single-Unit Trucks | 0 | 25 | 8 | 0 | 33 | 6 | 0 | 5 | 0 | 11 | 3 | 40 | 0 | 0 | 43 | 0 | 0 | 8 | 0 | 8 | 95 |
| % Single-Unit | 0.0 | 33.3 | 14.0 | 0.0 | 25.0 | 8.0 | 0.0 | 100.0 | 0.0 | 13.8 | 100.0 | 44.0 | 0.0 | 0.0 | 45.7 | 0.0 | 0.0 | 100.0 | 0.0 | 100.0 | 30.3 |
| Exiting Leg Total | | | | | 54 | | | | | 11 | | | | | 30 | | | | | 0 | 95 |
| Articulated Trucks | 0 | 11 | 49 | 0 | 60 | 69 | 0 | 0 | 0 | 69 | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 135 |
| % Articulated | 0.0 | 14.7 | 86.0 | 0.0 | 45.5 | 92.0 | 0.0 | 0.0 | 0.0 | 86.3 | 0.0 | 6.6 | 0.0 | 0.0 | 6.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 43.0 |
| Exiting Leg Total | | | | | 75 | | | | | 49 | | | | | 11 | | | | | 0 | 135 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:30 AM | Summer Street from North | | | | | Massport Freight Cor from East | | | | | Summer Street from South | | | | | FedEx Driveway from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:30 AM | 0 | 12 | 8 | 0 | 20 | 10 | 0 | 0 | 0 | 10 | 1 | 8 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 39 |
| 7:45 AM | 0 | 9 | 6 | 0 | 15 | 15 | 0 | 1 | 0 | 16 | 0 | 15 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 46 |
| 8:00 AM | 0 | 8 | 6 | 0 | 14 | 8 | 0 | 1 | 0 | 9 | 1 | 6 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 30 |
| 8:15 AM | 0 | 8 | 8 | 0 | 16 | 17 | 0 | 1 | 0 | 18 | 0 | 15 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 49 |
| Total Volume | 0 | 37 | 28 | 0 | 65 | 50 | 0 | 3 | 0 | 53 | 2 | 44 | 0 | 0 | 46 | 0 | 0 | 0 | 0 | 0 | 164 |
| % Approach Total | 0.0 | 56.9 | 43.1 | 0.0 | | 94.3 | 0.0 | 5.7 | 0.0 | | 4.3 | 95.7 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | |
| PHF | 0.000 | 0.771 | 0.875 | 0.000 | 0.813 | 0.735 | 0.000 | 0.750 | 0.000 | 0.736 | 0.500 | 0.733 | 0.000 | 0.000 | 0.767 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.837 |
| Buses | 0 | 20 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 0 | 0 | 27 | 0 | 0 | 0 | 0 | 0 | 47 |
| Buses % | 0.0 | 54.1 | 0.0 | 0.0 | 30.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 61.4 | 0.0 | 0.0 | 58.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 28.7 |
| Single-Unit Trucks | 0 | 9 | 5 | 0 | 14 | 1 | 0 | 3 | 0 | 4 | 2 | 13 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 33 |
| Single-Unit % | 0.0 | 24.3 | 17.9 | 0.0 | 21.5 | 2.0 | 0.0 | 100.0 | 0.0 | 7.5 | 100.0 | 29.5 | 0.0 | 0.0 | 32.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 20.1 |
| Articulated Trucks | 0 | 8 | 23 | 0 | 31 | 49 | 0 | 0 | 0 | 49 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 84 |
| Articulated % | 0.0 | 21.6 | 82.1 | 0.0 | 47.7 | 98.0 | 0.0 | 0.0 | 0.0 | 92.5 | 0.0 | 9.1 | 0.0 | 0.0 | 8.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 51.2 |
| Buses | 0 | 20 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 0 | 0 | 27 | 0 | 0 | 0 | 0 | 0 | 47 |
| Single-Unit Trucks | 0 | 9 | 5 | 0 | 14 | 1 | 0 | 3 | 0 | 4 | 2 | 13 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 33 |
| Articulated Trucks | 0 | 8 | 23 | 0 | 31 | 49 | 0 | 0 | 0 | 49 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 84 |
| Total Entering Leg | 0 | 37 | 28 | 0 | 65 | 50 | 0 | 3 | 0 | 53 | 2 | 44 | 0 | 0 | 46 | 0 | 0 | 0 | 0 | 0 | 164 |
| Buses | | | | | 27 | | | | | 0 | | | | | 20 | | | | | 0 | 47 |
| Single-Unit Trucks | | | | | 14 | | | | | 7 | | | | | 12 | | | | | 0 | 33 |
| Articulated Trucks | | | | | 53 | | | | | 23 | | | | | 8 | | | | | 0 | 84 |
| Total Exiting Leg | | | | | 94 | | | | | 30 | | | | | 40 | | | | | 0 | 164 |

PDI File #: **186316 AAA**
Location: **N: Summer Street S: Summer Street**
Location: **E: Massport Freight Cor W: FedEx Driveway**
City, State: **Boston, MA**
Client: **VHB/ S. Mandzo**
Site Code: **TBA**
Count Date: **Tuesday, June 12, 2018**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Cars

| | Summer Street | | | | | Massport Freight Cor | | | | | Summer Street | | | | | FedEx Driveway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 1 | 86 | 2 | 0 | 89 | 2 | 0 | 1 | 0 | 3 | 9 | 243 | 0 | 0 | 252 | 1 | 0 | 1 | 0 | 2 | 346 |
| 7:15 AM | 0 | 63 | 4 | 0 | 67 | 1 | 0 | 0 | 0 | 1 | 6 | 264 | 1 | 0 | 271 | 0 | 0 | 2 | 0 | 2 | 341 |
| 7:30 AM | 0 | 85 | 2 | 0 | 87 | 1 | 0 | 0 | 0 | 1 | 3 | 273 | 0 | 0 | 276 | 0 | 0 | 0 | 0 | 0 | 364 |
| 7:45 AM | 1 | 89 | 2 | 0 | 92 | 0 | 0 | 2 | 0 | 2 | 2 | 231 | 0 | 0 | 233 | 0 | 0 | 1 | 0 | 1 | 328 |
| Total | 2 | 323 | 10 | 0 | 335 | 4 | 0 | 3 | 0 | 7 | 20 | 1011 | 1 | 0 | 1032 | 1 | 0 | 4 | 0 | 5 | 1379 |
| 8:00 AM | 1 | 106 | 7 | 0 | 114 | 5 | 0 | 6 | 0 | 11 | 1 | 225 | 2 | 0 | 228 | 1 | 0 | 0 | 0 | 1 | 354 |
| 8:15 AM | 1 | 98 | 2 | 0 | 101 | 2 | 0 | 3 | 0 | 5 | 6 | 203 | 0 | 0 | 209 | 0 | 0 | 1 | 0 | 1 | 316 |
| 8:30 AM | 1 | 110 | 4 | 0 | 115 | 0 | 0 | 3 | 0 | 3 | 7 | 183 | 1 | 0 | 191 | 3 | 0 | 2 | 0 | 5 | 314 |
| 8:45 AM | 0 | 111 | 2 | 0 | 113 | 0 | 0 | 1 | 0 | 1 | 3 | 141 | 3 | 0 | 147 | 0 | 0 | 3 | 0 | 3 | 264 |
| Total | 3 | 425 | 15 | 0 | 443 | 7 | 0 | 13 | 0 | 20 | 17 | 752 | 6 | 0 | 775 | 4 | 0 | 6 | 0 | 10 | 1248 |
| Grand Total | 5 | 748 | 25 | 0 | 778 | 11 | 0 | 16 | 0 | 27 | 37 | 1763 | 7 | 0 | 1807 | 5 | 0 | 10 | 0 | 15 | 2627 |
| Approach % | 0.6 | 96.1 | 3.2 | 0.0 | | 40.7 | 0.0 | 59.3 | 0.0 | | 2.0 | 97.6 | 0.4 | 0.0 | | 33.3 | 0.0 | 66.7 | 0.0 | | |
| Total % | 0.2 | 28.5 | 1.0 | 0.0 | 29.6 | 0.4 | 0.0 | 0.6 | 0.0 | 1.0 | 1.4 | 67.1 | 0.3 | 0.0 | 68.8 | 0.2 | 0.0 | 0.4 | 0.0 | 0.6 | |
| Exiting Leg Total | | | | | 1784 | | | | | 62 | | | | | 769 | | | | | 12 | 2627 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:15 AM | Summer Street | | | | | Massport Freight Cor | | | | | Summer Street | | | | | FedEx Driveway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:15 AM | 0 | 63 | 4 | 0 | 67 | 1 | 0 | 0 | 0 | 1 | 6 | 264 | 1 | 0 | 271 | 0 | 0 | 2 | 0 | 2 | 341 |
| 7:30 AM | 0 | 85 | 2 | 0 | 87 | 1 | 0 | 0 | 0 | 1 | 3 | 273 | 0 | 0 | 276 | 0 | 0 | 0 | 0 | 0 | 364 |
| 7:45 AM | 1 | 89 | 2 | 0 | 92 | 0 | 0 | 2 | 0 | 2 | 2 | 231 | 0 | 0 | 233 | 0 | 0 | 1 | 0 | 1 | 328 |
| 8:00 AM | 1 | 106 | 7 | 0 | 114 | 5 | 0 | 6 | 0 | 11 | 1 | 225 | 2 | 0 | 228 | 1 | 0 | 0 | 0 | 1 | 354 |
| Total Volume | 2 | 343 | 15 | 0 | 360 | 7 | 0 | 8 | 0 | 15 | 12 | 993 | 3 | 0 | 1008 | 1 | 0 | 3 | 0 | 4 | 1387 |
| % Approach Total | 0.6 | 95.3 | 4.2 | 0.0 | | 46.7 | 0.0 | 53.3 | 0.0 | | 1.2 | 98.5 | 0.3 | 0.0 | | 25.0 | 0.0 | 75.0 | 0.0 | | |
| PHF | 0.500 | 0.809 | 0.536 | 0.000 | 0.789 | 0.350 | 0.000 | 0.333 | 0.000 | 0.341 | 0.500 | 0.909 | 0.375 | 0.000 | 0.913 | 0.250 | 0.000 | 0.375 | 0.000 | 0.500 | 0.953 |
| Entering Leg | 2 | 343 | 15 | 0 | 360 | 7 | 0 | 8 | 0 | 15 | 12 | 993 | 3 | 0 | 1008 | 1 | 0 | 3 | 0 | 4 | 1387 |
| Exiting Leg | | | | | 1003 | | | | | 27 | | | | | 352 | | | | | 5 | 1387 |
| Total | | | | | 1363 | | | | | 42 | | | | | 1360 | | | | | 9 | 2774 |

PDI File #: **186316 AAA**
Location: **N: Summer Street S: Summer Street**
Location: **E: Massport Freight Cor W: FedEx Driveway**
City, State: **Boston, MA**
Client: **VHB/ S. Mandzo**
Site Code: **TBA**
Count Date: **Tuesday, June 12, 2018**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Light Goods Vehicle

| | Summer Street | | | | | Massport Freight Cor | | | | | Summer Street | | | | | FedEx Driveway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 2 | 9 | 2 | 0 | 13 | 3 | 0 | 1 | 0 | 4 | 0 | 15 | 0 | 0 | 15 | 1 | 0 | 0 | 0 | 1 | 33 |
| 7:15 AM | 0 | 15 | 2 | 0 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 0 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 36 |
| 7:30 AM | 0 | 15 | 1 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 1 | 15 | 0 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 32 |
| 7:45 AM | 0 | 11 | 3 | 0 | 14 | 1 | 0 | 0 | 0 | 1 | 1 | 14 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 30 |
| Total | 2 | 50 | 8 | 0 | 60 | 4 | 0 | 1 | 0 | 5 | 2 | 63 | 0 | 0 | 65 | 1 | 0 | 0 | 0 | 1 | 131 |
| 8:00 AM | 0 | 8 | 4 | 0 | 12 | 0 | 0 | 2 | 0 | 2 | 0 | 15 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 29 |
| 8:15 AM | 2 | 17 | 1 | 0 | 20 | 4 | 0 | 1 | 0 | 5 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 35 |
| 8:30 AM | 0 | 8 | 0 | 0 | 8 | 0 | 0 | 3 | 0 | 3 | 0 | 11 | 0 | 0 | 11 | 0 | 1 | 1 | 0 | 2 | 24 |
| 8:45 AM | 2 | 16 | 1 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 1 | 20 | 0 | 0 | 21 | 0 | 1 | 9 | 0 | 10 | 50 |
| Total | 4 | 49 | 6 | 0 | 59 | 4 | 0 | 6 | 0 | 10 | 1 | 56 | 0 | 0 | 57 | 0 | 2 | 10 | 0 | 12 | 138 |
| Grand Total | 6 | 99 | 14 | 0 | 119 | 8 | 0 | 7 | 0 | 15 | 3 | 119 | 0 | 0 | 122 | 1 | 2 | 10 | 0 | 13 | 269 |
| Approach % | 5.0 | 83.2 | 11.8 | 0.0 | | 53.3 | 0.0 | 46.7 | 0.0 | | 2.5 | 97.5 | 0.0 | 0.0 | | 7.7 | 15.4 | 76.9 | 0.0 | | |
| Total % | 2.2 | 36.8 | 5.2 | 0.0 | 44.2 | 3.0 | 0.0 | 2.6 | 0.0 | 5.6 | 1.1 | 44.2 | 0.0 | 0.0 | 45.4 | 0.4 | 0.7 | 3.7 | 0.0 | 4.8 | |
| Exiting Leg Total | | | | | 137 | | | | | 19 | | | | | 107 | | | | | 6 | 269 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 8:00 AM | Summer Street | | | | | Massport Freight Cor | | | | | Summer Street | | | | | FedEx Driveway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 8:00 AM | 0 | 8 | 4 | 0 | 12 | 0 | 0 | 2 | 0 | 2 | 0 | 15 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 29 |
| 8:15 AM | 2 | 17 | 1 | 0 | 20 | 4 | 0 | 1 | 0 | 5 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 35 |
| 8:30 AM | 0 | 8 | 0 | 0 | 8 | 0 | 0 | 3 | 0 | 3 | 0 | 11 | 0 | 0 | 11 | 0 | 1 | 1 | 0 | 2 | 24 |
| 8:45 AM | 2 | 16 | 1 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 1 | 20 | 0 | 0 | 21 | 0 | 1 | 9 | 0 | 10 | 50 |
| Total Volume | 4 | 49 | 6 | 0 | 59 | 4 | 0 | 6 | 0 | 10 | 1 | 56 | 0 | 0 | 57 | 0 | 2 | 10 | 0 | 12 | 138 |
| % Approach Total | 6.8 | 83.1 | 10.2 | 0.0 | | 40.0 | 0.0 | 60.0 | 0.0 | | 1.8 | 98.2 | 0.0 | 0.0 | | 0.0 | 16.7 | 83.3 | 0.0 | | |
| PHF | 0.500 | 0.721 | 0.375 | 0.000 | 0.738 | 0.250 | 0.000 | 0.500 | 0.000 | 0.500 | 0.250 | 0.700 | 0.000 | 0.000 | 0.679 | 0.000 | 0.500 | 0.278 | 0.000 | 0.300 | 0.690 |
| Entering Leg | 4 | 49 | 6 | 0 | 59 | 4 | 0 | 6 | 0 | 10 | 1 | 56 | 0 | 0 | 57 | 0 | 2 | 10 | 0 | 12 | 138 |
| Exiting Leg | | | | | 70 | | | | | 9 | | | | | 55 | | | | | 4 | 138 |
| Total | | | | | 129 | | | | | 19 | | | | | 112 | | | | | 16 | 276 |

PDI File #: **186316 AAA**
Location: **N: Summer Street S: Summer Street**
Location: **E: Massport Freight Cor W: FedEx Driveway**
City, State: **Boston, MA**
Client: **VHB/ S. Mandzo**
Site Code: **TBA**
Count Date: **Tuesday, June 12, 2018**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Buses

| | Summer Street | | | | | Massport Freight Cor | | | | | Summer Street | | | | | FedEx Driveway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 7 |
| 7:15 AM | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 12 |
| 7:30 AM | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 8 |
| 7:45 AM | 0 | 8 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 18 |
| Total | 0 | 20 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 45 |
| 8:00 AM | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 9 |
| 8:15 AM | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 12 |
| 8:30 AM | 0 | 8 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 13 |
| 8:45 AM | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 5 |
| Total | 0 | 19 | 0 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 39 |
| Grand Total | 0 | 39 | 0 | 0 | 39 | 0 | 0 | 0 | 0 | 0 | 0 | 45 | 0 | 0 | 45 | 0 | 0 | 0 | 0 | 0 | 84 |
| Approach % | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total % | 0.0 | 46.4 | 0.0 | 0.0 | 46.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 53.6 | 0.0 | 0.0 | 53.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Exiting Leg Total | | | | | 45 | | | | | 0 | | | | | 39 | | | | | 0 | 84 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:45 AM | Summer Street | | | | | Massport Freight Cor | | | | | Summer Street | | | | | FedEx Driveway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:45 AM | 0 | 8 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 18 |
| 8:00 AM | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 9 |
| 8:15 AM | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 12 |
| 8:30 AM | 0 | 8 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 13 |
| Total Volume | 0 | 24 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | 0 | 0 | 28 | 0 | 0 | 0 | 0 | 0 | 52 |
| % Approach Total | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | |
| PHF | 0.000 | 0.750 | 0.000 | 0.000 | 0.750 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.700 | 0.000 | 0.000 | 0.700 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.722 |
| Entering Leg | 0 | 24 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | 0 | 0 | 28 | 0 | 0 | 0 | 0 | 0 | 52 |
| Exiting Leg | | | | | 28 | | | | | 0 | | | | | 24 | | | | | 0 | 52 |
| Total | | | | | 52 | | | | | 0 | | | | | 52 | | | | | 0 | 104 |

PDI File #: **186316 AAA**
Location: **N: Summer Street S: Summer Street**
Location: **E: Massport Freight Cor W: FedEx Driveway**
City, State: **Boston, MA**
Client: **VHB/ S. Mandzo**
Site Code: **TBA**
Count Date: **Tuesday, June 12, 2018**
Start Time: **7:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Class: **Single-Unit Trucks**

| | Summer Street | | | | | Massport Freight Cor | | | | | Summer Street | | | | | FedEx Driveway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 2 | 1 | 0 | 3 | 1 | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 7 |
| 7:15 AM | 0 | 7 | 2 | 0 | 9 | 2 | 0 | 1 | 0 | 3 | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 18 |
| 7:30 AM | 0 | 4 | 1 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 9 |
| 7:45 AM | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 7 |
| Total | 0 | 13 | 5 | 0 | 18 | 3 | 0 | 2 | 0 | 5 | 1 | 17 | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 41 |
| 8:00 AM | 0 | 2 | 1 | 0 | 3 | 1 | 0 | 1 | 0 | 2 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 6 |
| 8:15 AM | 0 | 3 | 2 | 0 | 5 | 0 | 0 | 1 | 0 | 1 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 11 |
| 8:30 AM | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 4 |
| 8:45 AM | 0 | 6 | 0 | 0 | 6 | 1 | 0 | 1 | 0 | 2 | 0 | 18 | 0 | 0 | 18 | 0 | 0 | 7 | 0 | 7 | 33 |
| Total | 0 | 12 | 3 | 0 | 15 | 3 | 0 | 3 | 0 | 6 | 2 | 23 | 0 | 0 | 25 | 0 | 0 | 8 | 0 | 8 | 54 |
| Grand Total | 0 | 25 | 8 | 0 | 33 | 6 | 0 | 5 | 0 | 11 | 3 | 40 | 0 | 0 | 43 | 0 | 0 | 8 | 0 | 8 | 95 |
| Approach % | 0.0 | 75.8 | 24.2 | 0.0 | | 54.5 | 0.0 | 45.5 | 0.0 | | 7.0 | 93.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 100.0 | 0.0 | | |
| Total % | 0.0 | 26.3 | 8.4 | 0.0 | 34.7 | 6.3 | 0.0 | 5.3 | 0.0 | 11.6 | 3.2 | 42.1 | 0.0 | 0.0 | 45.3 | 0.0 | 0.0 | 8.4 | 0.0 | 8.4 | |
| Exiting Leg Total | | | | | 54 | | | | | 11 | | | | | 30 | | | | | 0 | 95 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 8:00 AM | Summer Street | | | | | Massport Freight Cor | | | | | Summer Street | | | | | FedEx Driveway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 8:00 AM | 0 | 2 | 1 | 0 | 3 | 1 | 0 | 1 | 0 | 2 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 6 |
| 8:15 AM | 0 | 3 | 2 | 0 | 5 | 0 | 0 | 1 | 0 | 1 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 11 |
| 8:30 AM | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 4 |
| 8:45 AM | 0 | 6 | 0 | 0 | 6 | 1 | 0 | 1 | 0 | 2 | 0 | 18 | 0 | 0 | 18 | 0 | 0 | 7 | 0 | 7 | 33 |
| Total Volume | 0 | 12 | 3 | 0 | 15 | 3 | 0 | 3 | 0 | 6 | 2 | 23 | 0 | 0 | 25 | 0 | 0 | 8 | 0 | 8 | 54 |
| % Approach Total | 0.0 | 80.0 | 20.0 | 0.0 | | 50.0 | 0.0 | 50.0 | 0.0 | | 8.0 | 92.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 100.0 | 0.0 | | |
| PHF | 0.000 | 0.500 | 0.375 | 0.000 | 0.625 | 0.750 | 0.000 | 0.750 | 0.000 | 0.750 | 0.500 | 0.319 | 0.000 | 0.000 | 0.347 | 0.000 | 0.000 | 0.286 | 0.000 | 0.286 | 0.409 |
| Entering Leg | 0 | 12 | 3 | 0 | 15 | 3 | 0 | 3 | 0 | 6 | 2 | 23 | 0 | 0 | 25 | 0 | 0 | 8 | 0 | 8 | 54 |
| Exiting Leg | | | | | 34 | | | | | 5 | | | | | 15 | | | | | 0 | 54 |
| Total | | | | | 49 | | | | | 11 | | | | | 40 | | | | | 8 | 108 |

PDI File #: **186316 AAA**
Location: **N: Summer Street S: Summer Street**
Location: **E: Massport Freight Cor W: FedEx Driveway**
City, State: **Boston, MA**
Client: **VHB/ S. Mandzo**
Site Code: **TBA**
Count Date: **Tuesday, June 12, 2018**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Articulated Trucks

| | Summer Street from North | | | | | Massport Freight Cor from East | | | | | Summer Street from South | | | | | FedEx Driveway from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 2 | 10 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 7:15 AM | 0 | 1 | 6 | 0 | 7 | 5 | 0 | 0 | 0 | 5 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 13 |
| 7:30 AM | 0 | 4 | 7 | 0 | 11 | 10 | 0 | 0 | 0 | 10 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 22 |
| 7:45 AM | 0 | 1 | 5 | 0 | 6 | 15 | 0 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| Total | 0 | 8 | 28 | 0 | 36 | 30 | 0 | 0 | 0 | 30 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 68 |
| 8:00 AM | 0 | 3 | 5 | 0 | 8 | 7 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| 8:15 AM | 0 | 0 | 6 | 0 | 6 | 17 | 0 | 0 | 0 | 17 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 26 |
| 8:30 AM | 0 | 0 | 8 | 0 | 8 | 10 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| 8:45 AM | 0 | 0 | 2 | 0 | 2 | 5 | 0 | 0 | 0 | 5 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 8 |
| Total | 0 | 3 | 21 | 0 | 24 | 39 | 0 | 0 | 0 | 39 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 67 |
| Grand Total | 0 | 11 | 49 | 0 | 60 | 69 | 0 | 0 | 0 | 69 | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 135 |
| Approach % | 0.0 | 18.3 | 81.7 | 0.0 | | 100.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total % | 0.0 | 8.1 | 36.3 | 0.0 | 44.4 | 51.1 | 0.0 | 0.0 | 0.0 | 51.1 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Exiting Leg Total | | | | | 75 | | | | | 49 | | | | | 11 | | | | | 0 | 135 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:30 AM | Summer Street from North | | | | | Massport Freight Cor from East | | | | | Summer Street from South | | | | | FedEx Driveway from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:30 AM | 0 | 4 | 7 | 0 | 11 | 10 | 0 | 0 | 0 | 10 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 22 |
| 7:45 AM | 0 | 1 | 5 | 0 | 6 | 15 | 0 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| 8:00 AM | 0 | 3 | 5 | 0 | 8 | 7 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| 8:15 AM | 0 | 0 | 6 | 0 | 6 | 17 | 0 | 0 | 0 | 17 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 26 |
| Total Volume | 0 | 8 | 23 | 0 | 31 | 49 | 0 | 0 | 0 | 49 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 84 |
| % Approach Total | 0.0 | 25.8 | 74.2 | 0.0 | | 100.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | |
| PHF | 0.000 | 0.500 | 0.821 | 0.000 | 0.705 | 0.721 | 0.000 | 0.000 | 0.000 | 0.721 | 0.000 | 0.333 | 0.000 | 0.000 | 0.333 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.808 |
| Entering Leg | 0 | 8 | 23 | 0 | 31 | 49 | 0 | 0 | 0 | 49 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 84 |
| Exiting Leg | | | | | 53 | | | | | 23 | | | | | 8 | | | | | 0 | 84 |
| Total | | | | | 84 | | | | | 72 | | | | | 12 | | | | | 0 | 168 |

PDI File #: **186316 AAA**
Location: **N: Summer Street S: Summer Street**
Location: **E: Massport Freight Cor W: FedEx Driveway**
City, State: **Boston, MA**
Client: **VHB/ S. Mandzo**
Site Code: **TBA**
Count Date: **Tuesday, June 12, 2018**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Bicycles (on Roadway and Crosswalks)

| | Summer Street | | | | | | | Massport Freight Cor | | | | | | | Summer Street | | | | | | | FedEx Driveway | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | | | from East | | | | | | | from South | | | | | | | from West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 4 |
| 7:30 AM | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 8 |
| Total | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 28 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 8:15 AM | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 12 |
| 8:45 AM | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| Total | 2 | 1 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 | 0 | 0 | 0 | 0 | 41 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 45 |
| Grand Total | 2 | 2 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 66 | 0 | 0 | 0 | 0 | 66 | 0 | 0 | 1 | 0 | 1 | 1 | 3 | 73 |
| Approach % | 50.0 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 33.3 | 0.0 | 33.3 | 33.3 | | |
| Total % | 2.7 | 2.7 | 0.0 | 0.0 | 0.0 | 0.0 | 5.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 90.4 | 0.0 | 0.0 | 0.0 | 0.0 | 90.4 | 0.0 | 0.0 | 1.4 | 0.0 | 1.4 | 1.4 | 4.1 | |
| Exiting Leg Total | | | | | | | 67 | | | | | | | 0 | | | | | | | 2 | | | | | | | 4 | 73 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 8:00 AM | Summer Street | | | | | | | Massport Freight Cor | | | | | | | Summer Street | | | | | | | FedEx Driveway | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | | | from East | | | | | | | from South | | | | | | | from West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 8:15 AM | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 12 |
| 8:45 AM | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| Total Volume | 2 | 1 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 | 0 | 0 | 0 | 0 | 41 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 45 |
| % Approach Total | 66.7 | 33.3 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | | |
| PHF | 0.250 | 0.250 | 0.000 | 0.000 | 0.000 | 0.000 | 0.375 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.854 | 0.000 | 0.000 | 0.000 | 0.000 | 0.854 | 0.000 | 0.000 | 0.250 | 0.000 | 0.000 | 0.000 | 0.250 | 0.804 |
| Entering Leg | 2 | 1 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 | 0 | 0 | 0 | 0 | 41 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 45 |
| Exiting Leg | | | | | | | 42 | | | | | | | 0 | | | | | | | 1 | | | | | | | 2 | 45 |
| Total | | | | | | | 45 | | | | | | | 0 | | | | | | | 42 | | | | | | | 3 | 90 |

PDI File #: **186316 AAA**
Location: **N: Summer Street S: Summer Street**
Location: **E: Massport Freight Cor W: FedEx Driveway**
City, State: **Boston, MA**
Client: **VHB/ S. Mandzo**
Site Code: **TBA**
Count Date: **Tuesday, June 12, 2018**
Start Time: **7:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Class: **Pedestrians**

| | Summer Street | | | | | | | Massport Freight Cor | | | | | | | Summer Street | | | | | | | FedEx Driveway | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | | | from East | | | | | | | from South | | | | | | | from West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 12 | 13 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 5 | 7 | 21 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 10 | 14 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 14 | 5 | 19 | 36 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 16 | 19 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 7 | 1 | 8 | 29 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 17 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | 2 | 24 | 44 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 55 | 66 | 0 | 0 | 0 | 0 | 2 | 4 | 6 | 0 | 0 | 0 | 0 | 45 | 13 | 58 | 130 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 14 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 1 | 16 | 31 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 47 | 48 | 0 | 0 | 0 | 0 | 0 | 11 | 11 | 0 | 0 | 0 | 0 | 17 | 10 | 27 | 86 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 33 | 34 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 19 | 0 | 19 | 56 |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 21 | 22 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 11 | 2 | 13 | 36 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 115 | 119 | 0 | 0 | 0 | 0 | 1 | 14 | 15 | 0 | 0 | 0 | 0 | 62 | 13 | 75 | 209 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 170 | 185 | 0 | 0 | 0 | 0 | 3 | 18 | 21 | 0 | 0 | 0 | 0 | 107 | 26 | 133 | 339 |
| Approach % | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 8.11 | 91.9 | | 0 | 0 | 0 | 0 | 14.3 | 85.7 | | 0 | 0 | 0 | 0 | 80.5 | 19.5 | | |
| Total % | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4.42 | 50.1 | 54.6 | 0 | 0 | 0 | 0 | 0.88 | 5.31 | 6.19 | 0 | 0 | 0 | 0 | 31.6 | 7.67 | 39.2 | |
| Exiting Leg Total | | | | | | | 0 | | | | | | | 185 | | | | | | | 21 | | | | | | | 133 | 339 |

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

| 7:45 AM | Summer Street | | | | | | | Massport Freight Cor | | | | | | | Summer Street | | | | | | | FedEx Driveway | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | | | from East | | | | | | | from South | | | | | | | from West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 17 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | 2 | 24 | 44 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 14 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 1 | 16 | 31 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 47 | 48 | 0 | 0 | 0 | 0 | 0 | 11 | 11 | 0 | 0 | 0 | 0 | 17 | 10 | 27 | 86 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 33 | 34 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 19 | 0 | 19 | 56 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 111 | 117 | 0 | 0 | 0 | 0 | 0 | 14 | 14 | 0 | 0 | 0 | 0 | 73 | 13 | 86 | 217 |
| % Approach Total | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 5.1 | 94.9 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 84.9 | 15.1 | | |
| PHF | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.500 | 0.590 | 0.609 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.318 | 0.318 | 0.000 | 0.000 | 0.000 | 0.000 | 0.830 | 0.325 | 0.796 | 0.631 |
| Entering Leg | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 111 | 117 | 0 | 0 | 0 | 0 | 0 | 14 | 14 | 0 | 0 | 0 | 0 | 73 | 13 | 86 | 217 |
| Exiting Leg | | | | | | | 0 | | | | | | | 117 | | | | | | | 14 | | | | | | | 86 | 217 |
| Total | | | | | | | 0 | | | | | | | 234 | | | | | | | 28 | | | | | | | 172 | 434 |

PDI File #: **186316 AAAA**
Location: **N: Summer Street S: Summer Street**
Location: **E: Massport Freight Cor W: FedEx Driveway**
City, State: **Boston, MA**
Client: **VHB/ S. Mandzo**
Site Code: **TBA**
Count Date: **Tuesday, June 12, 2018**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Cars and Heavy Vehicles (Combined)

| | Summer Street | | | | | Massport Freight Cor | | | | | Summer Street | | | | | FedEx Driveway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 4 | 224 | 1 | 1 | 230 | 20 | 0 | 7 | 0 | 27 | 2 | 121 | 0 | 0 | 123 | 0 | 0 | 8 | 0 | 8 | 388 |
| 4:15 PM | 3 | 247 | 4 | 0 | 254 | 16 | 0 | 8 | 0 | 24 | 4 | 144 | 1 | 0 | 149 | 2 | 0 | 2 | 0 | 4 | 431 |
| 4:30 PM | 6 | 246 | 1 | 0 | 253 | 5 | 0 | 6 | 0 | 11 | 5 | 159 | 2 | 0 | 166 | 4 | 0 | 2 | 0 | 6 | 436 |
| 4:45 PM | 4 | 201 | 1 | 0 | 206 | 3 | 0 | 3 | 0 | 6 | 5 | 133 | 2 | 0 | 140 | 2 | 0 | 5 | 0 | 7 | 359 |
| Total | 17 | 918 | 7 | 1 | 943 | 44 | 0 | 24 | 0 | 68 | 16 | 557 | 5 | 0 | 578 | 8 | 0 | 17 | 0 | 25 | 1614 |
| 5:00 PM | 5 | 275 | 4 | 1 | 285 | 3 | 0 | 9 | 0 | 12 | 1 | 130 | 2 | 0 | 133 | 2 | 0 | 6 | 0 | 8 | 438 |
| 5:15 PM | 11 | 279 | 3 | 0 | 293 | 4 | 0 | 5 | 0 | 9 | 2 | 135 | 2 | 0 | 139 | 3 | 0 | 11 | 0 | 14 | 455 |
| 5:30 PM | 9 | 246 | 4 | 1 | 260 | 2 | 0 | 3 | 0 | 5 | 3 | 128 | 3 | 0 | 134 | 0 | 0 | 4 | 0 | 4 | 403 |
| 5:45 PM | 13 | 252 | 2 | 0 | 267 | 4 | 1 | 3 | 0 | 8 | 2 | 122 | 4 | 0 | 128 | 3 | 0 | 6 | 0 | 9 | 412 |
| Total | 38 | 1052 | 13 | 2 | 1105 | 13 | 1 | 20 | 0 | 34 | 8 | 515 | 11 | 0 | 534 | 8 | 0 | 27 | 0 | 35 | 1708 |
| Grand Total | 55 | 1970 | 20 | 3 | 2048 | 57 | 1 | 44 | 0 | 102 | 24 | 1072 | 16 | 0 | 1112 | 16 | 0 | 44 | 0 | 60 | 3322 |
| Approach % | 2.7 | 96.2 | 1.0 | 0.1 | | 55.9 | 1.0 | 43.1 | 0.0 | | 2.2 | 96.4 | 1.4 | 0.0 | | 26.7 | 0.0 | 73.3 | 0.0 | | |
| Total % | 1.7 | 59.3 | 0.6 | 0.1 | 61.6 | 1.7 | 0.0 | 1.3 | 0.0 | 3.1 | 0.7 | 32.3 | 0.5 | 0.0 | 33.5 | 0.5 | 0.0 | 1.3 | 0.0 | 1.8 | |
| Exiting Leg Total | | | | | 1176 | | | | | 44 | | | | | 2030 | | | | | 72 | 3322 |
| Cars | 44 | 1917 | 19 | 3 | 1983 | 32 | 1 | 44 | 0 | 77 | 24 | 1039 | 16 | 0 | 1079 | 16 | 0 | 41 | 0 | 57 | 3196 |
| % Cars | 80.0 | 97.3 | 95.0 | 100.0 | 96.8 | 56.1 | 100.0 | 100.0 | 0.0 | 75.5 | 100.0 | 96.9 | 100.0 | 0.0 | 97.0 | 100.0 | 0.0 | 93.2 | 0.0 | 95.0 | 96.2 |
| Exiting Leg Total | | | | | 1115 | | | | | 43 | | | | | 1977 | | | | | 61 | 3196 |
| Heavy Vehicles | 11 | 53 | 1 | 0 | 65 | 25 | 0 | 0 | 0 | 25 | 0 | 33 | 0 | 0 | 33 | 0 | 0 | 3 | 0 | 3 | 126 |
| % Heavy Vehicles | 20.0 | 2.7 | 5.0 | 0.0 | 3.2 | 43.9 | 0.0 | 0.0 | 0.0 | 24.5 | 0.0 | 3.1 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 6.8 | 0.0 | 5.0 | 3.8 |
| Exiting Leg Total | | | | | 61 | | | | | 1 | | | | | 53 | | | | | 11 | 126 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 5:00 PM | Summer Street | | | | | Massport Freight Cor | | | | | Summer Street | | | | | FedEx Driveway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 5:00 PM | 5 | 275 | 4 | 1 | 285 | 3 | 0 | 9 | 0 | 12 | 1 | 130 | 2 | 0 | 133 | 2 | 0 | 6 | 0 | 8 | 438 |
| 5:15 PM | 11 | 279 | 3 | 0 | 293 | 4 | 0 | 5 | 0 | 9 | 2 | 135 | 2 | 0 | 139 | 3 | 0 | 11 | 0 | 14 | 455 |
| 5:30 PM | 9 | 246 | 4 | 1 | 260 | 2 | 0 | 3 | 0 | 5 | 3 | 128 | 3 | 0 | 134 | 0 | 0 | 4 | 0 | 4 | 403 |
| 5:45 PM | 13 | 252 | 2 | 0 | 267 | 4 | 1 | 3 | 0 | 8 | 2 | 122 | 4 | 0 | 128 | 3 | 0 | 6 | 0 | 9 | 412 |
| Total Volume | 38 | 1052 | 13 | 2 | 1105 | 13 | 1 | 20 | 0 | 34 | 8 | 515 | 11 | 0 | 534 | 8 | 0 | 27 | 0 | 35 | 1708 |
| % Approach Total | 3.4 | 95.2 | 1.2 | 0.2 | | 38.2 | 2.9 | 58.8 | 0.0 | | 1.5 | 96.4 | 2.1 | 0.0 | | 22.9 | 0.0 | 77.1 | 0.0 | | |
| PHF | 0.731 | 0.943 | 0.813 | 0.500 | 0.943 | 0.813 | 0.250 | 0.556 | 0.000 | 0.708 | 0.667 | 0.954 | 0.688 | 0.000 | 0.960 | 0.667 | 0.000 | 0.614 | 0.000 | 0.625 | 0.938 |
| Cars | 31 | 1031 | 13 | 2 | 1077 | 13 | 1 | 20 | 0 | 34 | 8 | 500 | 11 | 0 | 519 | 8 | 0 | 25 | 0 | 33 | 1663 |
| Cars % | 81.6 | 98.0 | 100.0 | 100.0 | 97.5 | 100.0 | 100.0 | 100.0 | 0.0 | 100.0 | 100.0 | 97.1 | 100.0 | 0.0 | 97.2 | 100.0 | 0.0 | 92.6 | 0.0 | 94.3 | 97.4 |
| Heavy Vehicles | 7 | 21 | 0 | 0 | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 0 | 15 | 0 | 0 | 2 | 0 | 2 | 45 |
| Heavy Vehicles % | 18.4 | 2.0 | 0.0 | 0.0 | 2.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.9 | 0.0 | 0.0 | 2.8 | 0.0 | 0.0 | 7.4 | 0.0 | 5.7 | 2.6 |
| Cars Enter Leg | 31 | 1031 | 13 | 2 | 1077 | 13 | 1 | 20 | 0 | 34 | 8 | 500 | 11 | 0 | 519 | 8 | 0 | 25 | 0 | 33 | 1663 |
| Heavy Enter Leg | 7 | 21 | 0 | 0 | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 0 | 15 | 0 | 0 | 2 | 0 | 2 | 45 |
| Total Entering Leg | 38 | 1052 | 13 | 2 | 1105 | 13 | 1 | 20 | 0 | 34 | 8 | 515 | 11 | 0 | 534 | 8 | 0 | 27 | 0 | 35 | 1708 |
| Cars Exiting Leg | | | | | 540 | | | | | 21 | | | | | 1059 | | | | | 43 | 1663 |
| Heavy Exiting Leg | | | | | 17 | | | | | 0 | | | | | 21 | | | | | 7 | 45 |
| Total Exiting Leg | | | | | 557 | | | | | 21 | | | | | 1080 | | | | | 50 | 1708 |

PDI File #: **186316 AAAA**
Location: **N: Summer Street S: Summer Street**
Location: **E: Massport Freight Cor W: FedEx Driveway**
City, State: **Boston, MA**
Client: **VHB/ S. Mandzo**
Site Code: **TBA**
Count Date: **Tuesday, June 12, 2018**
Start Time: **4:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Class: **Cars-Combined (Motorcycles, Cars, Light Goods)**

| | Summer Street | | | | | Massport Freight Cor | | | | | Summer Street | | | | | FedEx Driveway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 3 | 217 | 0 | 1 | 221 | 4 | 0 | 7 | 0 | 11 | 2 | 118 | 0 | 0 | 120 | 0 | 0 | 7 | 0 | 7 | 359 |
| 4:15 PM | 2 | 236 | 4 | 0 | 242 | 9 | 0 | 8 | 0 | 17 | 4 | 137 | 1 | 0 | 142 | 2 | 0 | 2 | 0 | 4 | 405 |
| 4:30 PM | 5 | 237 | 1 | 0 | 243 | 3 | 0 | 6 | 0 | 9 | 5 | 157 | 2 | 0 | 164 | 4 | 0 | 2 | 0 | 6 | 422 |
| 4:45 PM | 3 | 196 | 1 | 0 | 200 | 3 | 0 | 3 | 0 | 6 | 5 | 127 | 2 | 0 | 134 | 2 | 0 | 5 | 0 | 7 | 347 |
| Total | 13 | 886 | 6 | 1 | 906 | 19 | 0 | 24 | 0 | 43 | 16 | 539 | 5 | 0 | 560 | 8 | 0 | 16 | 0 | 24 | 1533 |
| 5:00 PM | 5 | 271 | 4 | 1 | 281 | 3 | 0 | 9 | 0 | 12 | 1 | 128 | 2 | 0 | 131 | 2 | 0 | 4 | 0 | 6 | 430 |
| 5:15 PM | 9 | 273 | 3 | 0 | 285 | 4 | 0 | 5 | 0 | 9 | 2 | 129 | 2 | 0 | 133 | 3 | 0 | 11 | 0 | 14 | 441 |
| 5:30 PM | 7 | 240 | 4 | 1 | 252 | 2 | 0 | 3 | 0 | 5 | 3 | 125 | 3 | 0 | 131 | 0 | 0 | 4 | 0 | 4 | 392 |
| 5:45 PM | 10 | 247 | 2 | 0 | 259 | 4 | 1 | 3 | 0 | 8 | 2 | 118 | 4 | 0 | 124 | 3 | 0 | 6 | 0 | 9 | 400 |
| Total | 31 | 1031 | 13 | 2 | 1077 | 13 | 1 | 20 | 0 | 34 | 8 | 500 | 11 | 0 | 519 | 8 | 0 | 25 | 0 | 33 | 1663 |
| Grand Total | 44 | 1917 | 19 | 3 | 1983 | 32 | 1 | 44 | 0 | 77 | 24 | 1039 | 16 | 0 | 1079 | 16 | 0 | 41 | 0 | 57 | 3196 |
| Approach % | 2.2 | 96.7 | 1.0 | 0.2 | | 41.6 | 1.3 | 57.1 | 0.0 | | 2.2 | 96.3 | 1.5 | 0.0 | | 28.1 | 0.0 | 71.9 | 0.0 | | |
| Total % | 1.4 | 60.0 | 0.6 | 0.1 | 62.0 | 1.0 | 0.0 | 1.4 | 0.0 | 2.4 | 0.8 | 32.5 | 0.5 | 0.0 | 33.8 | 0.5 | 0.0 | 1.3 | 0.0 | 1.8 | |
| Exiting Leg Total | | | | | 1115 | | | | | 43 | | | | | 1977 | | | | | 61 | 3196 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 5:00 PM | Summer Street | | | | | Massport Freight Cor | | | | | Summer Street | | | | | FedEx Driveway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 5:00 PM | 5 | 271 | 4 | 1 | 281 | 3 | 0 | 9 | 0 | 12 | 1 | 128 | 2 | 0 | 131 | 2 | 0 | 4 | 0 | 6 | 430 |
| 5:15 PM | 9 | 273 | 3 | 0 | 285 | 4 | 0 | 5 | 0 | 9 | 2 | 129 | 2 | 0 | 133 | 3 | 0 | 11 | 0 | 14 | 441 |
| 5:30 PM | 7 | 240 | 4 | 1 | 252 | 2 | 0 | 3 | 0 | 5 | 3 | 125 | 3 | 0 | 131 | 0 | 0 | 4 | 0 | 4 | 392 |
| 5:45 PM | 10 | 247 | 2 | 0 | 259 | 4 | 1 | 3 | 0 | 8 | 2 | 118 | 4 | 0 | 124 | 3 | 0 | 6 | 0 | 9 | 400 |
| Total Volume | 31 | 1031 | 13 | 2 | 1077 | 13 | 1 | 20 | 0 | 34 | 8 | 500 | 11 | 0 | 519 | 8 | 0 | 25 | 0 | 33 | 1663 |
| % Approach Total | 2.9 | 95.7 | 1.2 | 0.2 | | 38.2 | 2.9 | 58.8 | 0.0 | | 1.5 | 96.3 | 2.1 | 0.0 | | 24.2 | 0.0 | 75.8 | 0.0 | | |
| PHF | 0.775 | 0.944 | 0.813 | 0.500 | 0.945 | 0.813 | 0.250 | 0.556 | 0.000 | 0.708 | 0.667 | 0.969 | 0.688 | 0.000 | 0.976 | 0.667 | 0.000 | 0.568 | 0.000 | 0.589 | 0.943 |
| Entering Leg | 31 | 1031 | 13 | 2 | 1077 | 13 | 1 | 20 | 0 | 34 | 8 | 500 | 11 | 0 | 519 | 8 | 0 | 25 | 0 | 33 | 1663 |
| Exiting Leg | | | | | 540 | | | | | 21 | | | | | 1059 | | | | | 43 | 1663 |
| Total | | | | | 1617 | | | | | 55 | | | | | 1578 | | | | | 76 | 3326 |

PDI File #: **186316 AAAA**
Location: **N: Summer Street S: Summer Street**
Location: **E: Massport Freight Cor W: FedEx Driveway**
City, State: **Boston, MA**
Client: **VHB/ S. Mandzo**
Site Code: **TBA**
Count Date: **Tuesday, June 12, 2018**
Start Time: **4:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

| | Summer Street from North | | | | | Massport Freight Cor from East | | | | | Summer Street from South | | | | | FedEx Driveway from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 1 | 7 | 1 | 0 | 9 | 16 | 0 | 0 | 0 | 16 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 1 | 29 |
| 4:15 PM | 1 | 11 | 0 | 0 | 12 | 7 | 0 | 0 | 0 | 7 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 26 |
| 4:30 PM | 1 | 9 | 0 | 0 | 10 | 2 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 14 |
| 4:45 PM | 1 | 5 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 12 |
| Total | 4 | 32 | 1 | 0 | 37 | 25 | 0 | 0 | 0 | 25 | 0 | 18 | 0 | 0 | 18 | 0 | 0 | 1 | 0 | 1 | 81 |
| 5:00 PM | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 2 | 8 |
| 5:15 PM | 2 | 6 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 14 |
| 5:30 PM | 2 | 6 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 11 |
| 5:45 PM | 3 | 5 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 12 |
| Total | 7 | 21 | 0 | 0 | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 0 | 15 | 0 | 0 | 2 | 0 | 2 | 45 |
| Grand Total | 11 | 53 | 1 | 0 | 65 | 25 | 0 | 0 | 0 | 25 | 0 | 33 | 0 | 0 | 33 | 0 | 0 | 3 | 0 | 3 | 126 |
| Approach % | 16.9 | 81.5 | 1.5 | 0.0 | | 100.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 100.0 | 0.0 | | |
| Total % | 8.7 | 42.1 | 0.8 | 0.0 | 51.6 | 19.8 | 0.0 | 0.0 | 0.0 | 19.8 | 0.0 | 26.2 | 0.0 | 0.0 | 26.2 | 0.0 | 0.0 | 2.4 | 0.0 | 2.4 | |
| Exiting Leg Total | | | | | 61 | | | | | 1 | | | | | 53 | | | | | 11 | 126 |
| Buses | 0 | 21 | 0 | 0 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 0 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 47 |
| % Buses | 0.0 | 39.6 | 0.0 | 0.0 | 32.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 78.8 | 0.0 | 0.0 | 78.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 37.3 |
| Exiting Leg Total | | | | | 26 | | | | | 0 | | | | | 21 | | | | | 0 | 47 |
| Single-Unit Trucks | 11 | 31 | 0 | 0 | 42 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 3 | 0 | 3 | 50 |
| % Single-Unit | 100.0 | 58.5 | 0.0 | 0.0 | 64.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 15.2 | 0.0 | 0.0 | 15.2 | 0.0 | 0.0 | 100.0 | 0.0 | 100.0 | 39.7 |
| Exiting Leg Total | | | | | 8 | | | | | 0 | | | | | 31 | | | | | 11 | 50 |
| Articulated Trucks | 0 | 1 | 1 | 0 | 2 | 25 | 0 | 0 | 0 | 25 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 29 |
| % Articulated | 0.0 | 1.9 | 100.0 | 0.0 | 3.1 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 | 0.0 | 6.1 | 0.0 | 0.0 | 6.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 23.0 |
| Exiting Leg Total | | | | | 27 | | | | | 1 | | | | | 1 | | | | | 0 | 29 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:00 PM | Summer Street from North | | | | | Massport Freight Cor from East | | | | | Summer Street from South | | | | | FedEx Driveway from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 1 | 7 | 1 | 0 | 9 | 16 | 0 | 0 | 0 | 16 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 1 | 29 |
| 4:15 PM | 1 | 11 | 0 | 0 | 12 | 7 | 0 | 0 | 0 | 7 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 26 |
| 4:30 PM | 1 | 9 | 0 | 0 | 10 | 2 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 14 |
| 4:45 PM | 1 | 5 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 12 |
| Total Volume | 4 | 32 | 1 | 0 | 37 | 25 | 0 | 0 | 0 | 25 | 0 | 18 | 0 | 0 | 18 | 0 | 0 | 1 | 0 | 1 | 81 |
| % Approach Total | 10.8 | 86.5 | 2.7 | 0.0 | | 100.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 100.0 | 0.0 | | |
| PHF | 1.000 | 0.727 | 0.250 | 0.000 | 0.771 | 0.391 | 0.000 | 0.000 | 0.000 | 0.391 | 0.000 | 0.643 | 0.000 | 0.000 | 0.643 | 0.000 | 0.000 | 0.250 | 0.000 | 0.250 | 0.698 |
| Buses | 0 | 11 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 24 |
| Buses % | 0.0 | 34.4 | 0.0 | 0.0 | 29.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 72.2 | 0.0 | 0.0 | 72.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 29.6 |
| Single-Unit Trucks | 4 | 20 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 1 | 0 | 1 | 29 |
| Single-Unit % | 100.0 | 62.5 | 0.0 | 0.0 | 64.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 22.2 | 0.0 | 0.0 | 22.2 | 0.0 | 0.0 | 100.0 | 0.0 | 100.0 | 35.8 |
| Articulated Trucks | 0 | 1 | 1 | 0 | 2 | 25 | 0 | 0 | 0 | 25 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 28 |
| Articulated % | 0.0 | 3.1 | 100.0 | 0.0 | 5.4 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 | 0.0 | 5.6 | 0.0 | 0.0 | 5.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 34.6 |
| Buses | 0 | 11 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 24 |
| Single-Unit Trucks | 4 | 20 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 1 | 0 | 1 | 29 |
| Articulated Trucks | 0 | 1 | 1 | 0 | 2 | 25 | 0 | 0 | 0 | 25 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 28 |
| Total Entering Leg | 4 | 32 | 1 | 0 | 37 | 25 | 0 | 0 | 0 | 25 | 0 | 18 | 0 | 0 | 18 | 0 | 0 | 1 | 0 | 1 | 81 |
| Buses | | | | | 13 | | | | | 0 | | | | | 11 | | | | | 0 | 24 |
| Single-Unit Trucks | | | | | 5 | | | | | 0 | | | | | 20 | | | | | 4 | 29 |
| Articulated Trucks | | | | | 26 | | | | | 1 | | | | | 1 | | | | | 0 | 28 |
| Total Exiting Leg | | | | | 44 | | | | | 1 | | | | | 32 | | | | | 4 | 81 |

PDI File #: **186316 AAAA**
Location: **N: Summer Street S: Summer Street**
Location: **E: Massport Freight Cor W: FedEx Driveway**
City, State: **Boston, MA**
Client: **VHB/ S. Mandzo**
Site Code: **TBA**
Count Date: **Tuesday, June 12, 2018**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Cars

| | Summer Street from North | | | | | Massport Freight Cor from East | | | | | Summer Street from South | | | | | FedEx Driveway from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 1 | 193 | 0 | 0 | 194 | 3 | 0 | 6 | 0 | 9 | 2 | 103 | 0 | 0 | 105 | 0 | 0 | 7 | 0 | 7 | 315 |
| 4:15 PM | 2 | 216 | 3 | 0 | 221 | 7 | 0 | 3 | 0 | 10 | 4 | 129 | 1 | 0 | 134 | 2 | 0 | 1 | 0 | 3 | 368 |
| 4:30 PM | 5 | 212 | 1 | 0 | 218 | 3 | 0 | 5 | 0 | 8 | 4 | 143 | 2 | 0 | 149 | 4 | 0 | 2 | 0 | 6 | 381 |
| 4:45 PM | 3 | 179 | 1 | 0 | 183 | 3 | 0 | 3 | 0 | 6 | 5 | 112 | 1 | 0 | 118 | 2 | 0 | 5 | 0 | 7 | 314 |
| Total | 11 | 800 | 5 | 0 | 816 | 16 | 0 | 17 | 0 | 33 | 15 | 487 | 4 | 0 | 506 | 8 | 0 | 15 | 0 | 23 | 1378 |
| 5:00 PM | 5 | 251 | 4 | 1 | 261 | 2 | 0 | 8 | 0 | 10 | 1 | 110 | 2 | 0 | 113 | 2 | 0 | 4 | 0 | 6 | 390 |
| 5:15 PM | 5 | 249 | 3 | 0 | 257 | 3 | 0 | 3 | 0 | 6 | 2 | 117 | 2 | 0 | 121 | 3 | 0 | 9 | 0 | 12 | 396 |
| 5:30 PM | 6 | 226 | 4 | 1 | 237 | 2 | 0 | 3 | 0 | 5 | 3 | 116 | 3 | 0 | 122 | 0 | 0 | 3 | 0 | 3 | 367 |
| 5:45 PM | 8 | 232 | 2 | 0 | 242 | 3 | 0 | 2 | 0 | 5 | 2 | 108 | 3 | 0 | 113 | 3 | 0 | 5 | 0 | 8 | 368 |
| Total | 24 | 958 | 13 | 2 | 997 | 10 | 0 | 16 | 0 | 26 | 8 | 451 | 10 | 0 | 469 | 8 | 0 | 21 | 0 | 29 | 1521 |
| Grand Total | 35 | 1758 | 18 | 2 | 1813 | 26 | 0 | 33 | 0 | 59 | 23 | 938 | 14 | 0 | 975 | 16 | 0 | 36 | 0 | 52 | 2899 |
| Approach % | 1.9 | 97.0 | 1.0 | 0.1 | | 44.1 | 0.0 | 55.9 | 0.0 | | 2.4 | 96.2 | 1.4 | 0.0 | | 30.8 | 0.0 | 69.2 | 0.0 | | |
| Total % | 1.2 | 60.6 | 0.6 | 0.1 | 62.5 | 0.9 | 0.0 | 1.1 | 0.0 | 2.0 | 0.8 | 32.4 | 0.5 | 0.0 | 33.6 | 0.6 | 0.0 | 1.2 | 0.0 | 1.8 | |
| Exiting Leg Total | | | | | 1002 | | | | | 41 | | | | | 1807 | | | | | 49 | 2899 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 5:00 PM | Summer Street from North | | | | | Massport Freight Cor from East | | | | | Summer Street from South | | | | | FedEx Driveway from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 5:00 PM | 5 | 251 | 4 | 1 | 261 | 2 | 0 | 8 | 0 | 10 | 1 | 110 | 2 | 0 | 113 | 2 | 0 | 4 | 0 | 6 | 390 |
| 5:15 PM | 5 | 249 | 3 | 0 | 257 | 3 | 0 | 3 | 0 | 6 | 2 | 117 | 2 | 0 | 121 | 3 | 0 | 9 | 0 | 12 | 396 |
| 5:30 PM | 6 | 226 | 4 | 1 | 237 | 2 | 0 | 3 | 0 | 5 | 3 | 116 | 3 | 0 | 122 | 0 | 0 | 3 | 0 | 3 | 367 |
| 5:45 PM | 8 | 232 | 2 | 0 | 242 | 3 | 0 | 2 | 0 | 5 | 2 | 108 | 3 | 0 | 113 | 3 | 0 | 5 | 0 | 8 | 368 |
| Total Volume | 24 | 958 | 13 | 2 | 997 | 10 | 0 | 16 | 0 | 26 | 8 | 451 | 10 | 0 | 469 | 8 | 0 | 21 | 0 | 29 | 1521 |
| % Approach Total | 2.4 | 96.1 | 1.3 | 0.2 | | 38.5 | 0.0 | 61.5 | 0.0 | | 1.7 | 96.2 | 2.1 | 0.0 | | 27.6 | 0.0 | 72.4 | 0.0 | | |
| PHF | 0.750 | 0.954 | 0.813 | 0.500 | 0.955 | 0.833 | 0.000 | 0.500 | 0.000 | 0.650 | 0.667 | 0.964 | 0.833 | 0.000 | 0.961 | 0.667 | 0.000 | 0.583 | 0.000 | 0.604 | 0.960 |
| Entering Leg | 24 | 958 | 13 | 2 | 997 | 10 | 0 | 16 | 0 | 26 | 8 | 451 | 10 | 0 | 469 | 8 | 0 | 21 | 0 | 29 | 1521 |
| Exiting Leg | | | | | 484 | | | | | 21 | | | | | 982 | | | | | 34 | 1521 |
| Total | | | | | 1481 | | | | | 47 | | | | | 1451 | | | | | 63 | 3042 |

PDI File #: **186316 AAAA**
Location: **N: Summer Street S: Summer Street**
Location: **E: Massport Freight Cor W: FedEx Driveway**
City, State: **Boston, MA**
Client: **VHB/ S. Mandzo**
Site Code: **TBA**
Count Date: **Tuesday, June 12, 2018**
Start Time: **4:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Class:

## Light Goods Vehicle

| | Summer Street | | | | | Massport Freight Cor | | | | | Summer Street | | | | | FedEx Driveway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 2 | 22 | 0 | 1 | 25 | 1 | 0 | 1 | 0 | 2 | 0 | 13 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 40 |
| 4:15 PM | 0 | 20 | 0 | 0 | 20 | 2 | 0 | 5 | 0 | 7 | 0 | 8 | 0 | 0 | 8 | 0 | 0 | 1 | 0 | 1 | 36 |
| 4:30 PM | 0 | 25 | 0 | 0 | 25 | 0 | 0 | 1 | 0 | 1 | 1 | 9 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 36 |
| 4:45 PM | 0 | 15 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 1 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 31 |
| Total | 2 | 82 | 0 | 1 | 85 | 3 | 0 | 7 | 0 | 10 | 1 | 45 | 1 | 0 | 47 | 0 | 0 | 1 | 0 | 1 | 143 |
| 5:00 PM | 0 | 19 | 0 | 0 | 19 | 1 | 0 | 1 | 0 | 2 | 0 | 18 | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 39 |
| 5:15 PM | 3 | 21 | 0 | 0 | 24 | 1 | 0 | 2 | 0 | 3 | 0 | 11 | 0 | 0 | 11 | 0 | 0 | 2 | 0 | 2 | 40 |
| 5:30 PM | 0 | 13 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 9 | 0 | 0 | 1 | 0 | 1 | 23 |
| 5:45 PM | 2 | 14 | 0 | 0 | 16 | 1 | 0 | 1 | 0 | 2 | 0 | 9 | 1 | 0 | 10 | 0 | 0 | 1 | 0 | 1 | 29 |
| Total | 5 | 67 | 0 | 0 | 72 | 3 | 0 | 4 | 0 | 7 | 0 | 47 | 1 | 0 | 48 | 0 | 0 | 4 | 0 | 4 | 131 |
| Grand Total | 7 | 149 | 0 | 1 | 157 | 6 | 0 | 11 | 0 | 17 | 1 | 92 | 2 | 0 | 95 | 0 | 0 | 5 | 0 | 5 | 274 |
| Approach % | 4.5 | 94.9 | 0.0 | 0.6 | | 35.3 | 0.0 | 64.7 | 0.0 | | 1.1 | 96.8 | 2.1 | 0.0 | | 0.0 | 0.0 | 100.0 | 0.0 | | |
| Total % | 2.6 | 54.4 | 0.0 | 0.4 | 57.3 | 2.2 | 0.0 | 4.0 | 0.0 | 6.2 | 0.4 | 33.6 | 0.7 | 0.0 | 34.7 | 0.0 | 0.0 | 1.8 | 0.0 | 1.8 | |
| Exiting Leg Total | | | | | 104 | | | | | 1 | | | | | 160 | | | | | 9 | 274 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:30 PM | Summer Street | | | | | Massport Freight Cor | | | | | Summer Street | | | | | FedEx Driveway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:30 PM | 0 | 25 | 0 | 0 | 25 | 0 | 0 | 1 | 0 | 1 | 1 | 9 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 36 |
| 4:45 PM | 0 | 15 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 1 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 31 |
| 5:00 PM | 0 | 19 | 0 | 0 | 19 | 1 | 0 | 1 | 0 | 2 | 0 | 18 | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 39 |
| 5:15 PM | 3 | 21 | 0 | 0 | 24 | 1 | 0 | 2 | 0 | 3 | 0 | 11 | 0 | 0 | 11 | 0 | 0 | 2 | 0 | 2 | 40 |
| Total Volume | 3 | 80 | 0 | 0 | 83 | 2 | 0 | 4 | 0 | 6 | 1 | 53 | 1 | 0 | 55 | 0 | 0 | 2 | 0 | 2 | 146 |
| % Approach Total | 3.6 | 96.4 | 0.0 | 0.0 | | 33.3 | 0.0 | 66.7 | 0.0 | | 1.8 | 96.4 | 1.8 | 0.0 | | 0.0 | 0.0 | 100.0 | 0.0 | | |
| PHF | 0.250 | 0.800 | 0.000 | 0.000 | 0.830 | 0.500 | 0.000 | 0.500 | 0.000 | 0.500 | 0.250 | 0.736 | 0.250 | 0.000 | 0.764 | 0.000 | 0.000 | 0.250 | 0.000 | 0.250 | 0.913 |
| Entering Leg | 3 | 80 | 0 | 0 | 83 | 2 | 0 | 4 | 0 | 6 | 1 | 53 | 1 | 0 | 55 | 0 | 0 | 2 | 0 | 2 | 146 |
| Exiting Leg | | | | | 57 | | | | | 1 | | | | | 84 | | | | | 4 | 146 |
| Total | | | | | 140 | | | | | 7 | | | | | 139 | | | | | 6 | 292 |

PDI File #: **186316 AAAA**
Location: **N: Summer Street S: Summer Street**
Location: **E: Massport Freight Cor W: FedEx Driveway**
City, State: **Boston, MA**
Client: **VHB/ S. Mandzo**
Site Code: **TBA**
Count Date: **Tuesday, June 12, 2018**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Buses

| | Summer Street | | | | | Massport Freight Cor | | | | | Summer Street | | | | | FedEx Driveway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| 4:15 PM | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 9 |
| 4:30 PM | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 6 |
| 4:45 PM | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 7 |
| Total | 0 | 11 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 24 |
| 5:00 PM | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 4 |
| 5:15 PM | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 7 |
| 5:30 PM | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 6 |
| 5:45 PM | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 6 |
| Total | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 23 |
| Grand Total | 0 | 21 | 0 | 0 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 0 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 47 |
| Approach % | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total % | 0.0 | 44.7 | 0.0 | 0.0 | 44.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 55.3 | 0.0 | 0.0 | 55.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Exiting Leg Total | | | | | 26 | | | | | 0 | | | | | 21 | | | | | 0 | 47 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:15 PM | Summer Street | | | | | Massport Freight Cor | | | | | Summer Street | | | | | FedEx Driveway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:15 PM | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 9 |
| 4:30 PM | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 6 |
| 4:45 PM | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 7 |
| 5:00 PM | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 4 |
| Total Volume | 0 | 12 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 26 |
| % Approach Total | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | |
| PHF | 0.000 | 0.750 | 0.000 | 0.000 | 0.750 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.583 | 0.000 | 0.000 | 0.583 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.722 |
| Entering Leg | 0 | 12 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 26 |
| Exiting Leg | | | | | 14 | | | | | 0 | | | | | 12 | | | | | 0 | 26 |
| Total | | | | | 26 | | | | | 0 | | | | | 26 | | | | | 0 | 52 |

PDI File #: **186316 AAAA**
Location: **N: Summer Street S: Summer Street**
Location: **E: Massport Freight Cor W: FedEx Driveway**
City, State: **Boston, MA**
Client: **VHB/ S. Mandzo**
Site Code: **TBA**
Count Date: **Tuesday, June 12, 2018**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Single-Unit Trucks

| | Summer Street from North | | | | | Massport Freight Cor from East | | | | | Summer Street from South | | | | | FedEx Driveway from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 1 | 5 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 1 | 9 |
| 4:15 PM | 1 | 8 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 10 |
| 4:30 PM | 1 | 5 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 4:45 PM | 1 | 2 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 4 |
| Total | 4 | 20 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 1 | 0 | 1 | 29 |
| 5:00 PM | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 4 |
| 5:15 PM | 2 | 4 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 5:30 PM | 2 | 3 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 5:45 PM | 3 | 2 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 6 |
| Total | 7 | 11 | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 2 | 21 |
| Grand Total | 11 | 31 | 0 | 0 | 42 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 3 | 0 | 3 | 50 |
| Approach % | 26.2 | 73.8 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 100.0 | 0.0 | | |
| Total % | 22.0 | 62.0 | 0.0 | 0.0 | 84.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 10.0 | 0.0 | 0.0 | 10.0 | 0.0 | 0.0 | 6.0 | 0.0 | 6.0 | |
| Exiting Leg Total | | | | | 8 | | | | | 0 | | | | | 31 | | | | | 11 | 50 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:00 PM | Summer Street from North | | | | | Massport Freight Cor from East | | | | | Summer Street from South | | | | | FedEx Driveway from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 1 | 5 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 1 | 9 |
| 4:15 PM | 1 | 8 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 10 |
| 4:30 PM | 1 | 5 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 4:45 PM | 1 | 2 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 4 |
| Total Volume | 4 | 20 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 1 | 0 | 1 | 29 |
| % Approach Total | 16.7 | 83.3 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 100.0 | 0.0 | | |
| PHF | 1.000 | 0.625 | 0.000 | 0.000 | 0.667 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.500 | 0.000 | 0.000 | 0.500 | 0.000 | 0.000 | 0.250 | 0.000 | 0.250 | 0.725 |
| Entering Leg | 4 | 20 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 1 | 0 | 1 | 29 |
| Exiting Leg | | | | | 5 | | | | | 0 | | | | | 20 | | | | | 4 | 29 |
| Total | | | | | 29 | | | | | 0 | | | | | 24 | | | | | 5 | 58 |

PDI File #: **186316 AAAA**
Location: **N: Summer Street S: Summer Street**
Location: **E: Massport Freight Cor W: FedEx Driveway**
City, State: **Boston, MA**
Client: **VHB/ S. Mandzo**
Site Code: **TBA**
Count Date: **Tuesday, June 12, 2018**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Articulated Trucks

| | Summer Street from North | | | | | Massport Freight Cor from East | | | | | Summer Street from South | | | | | FedEx Driveway from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 0 | 1 | 1 | 0 | 2 | 16 | 0 | 0 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 0 | 1 | 1 | 0 | 2 | 25 | 0 | 0 | 0 | 25 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 28 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| Grand Total | 0 | 1 | 1 | 0 | 2 | 25 | 0 | 0 | 0 | 25 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 29 |
| Approach % | 0.0 | 50.0 | 50.0 | 0.0 | | 100.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total % | 0.0 | 3.4 | 3.4 | 0.0 | 6.9 | 86.2 | 0.0 | 0.0 | 0.0 | 86.2 | 0.0 | 6.9 | 0.0 | 0.0 | 6.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Exiting Leg Total | | | | | 27 | | | | | 1 | | | | | 1 | | | | | 0 | 29 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:00 PM | Summer Street from North | | | | | Massport Freight Cor from East | | | | | Summer Street from South | | | | | FedEx Driveway from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 0 | 1 | 1 | 0 | 2 | 16 | 0 | 0 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total Volume | 0 | 1 | 1 | 0 | 2 | 25 | 0 | 0 | 0 | 25 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 28 |
| % Approach Total | 0.0 | 50.0 | 50.0 | 0.0 | | 100.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | |
| PHF | 0.000 | 0.250 | 0.250 | 0.000 | 0.250 | 0.391 | 0.000 | 0.000 | 0.000 | 0.391 | 0.000 | 0.250 | 0.000 | 0.000 | 0.250 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.389 |
| Entering Leg | 0 | 1 | 1 | 0 | 2 | 25 | 0 | 0 | 0 | 25 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 28 |
| Exiting Leg | | | | | 26 | | | | | 1 | | | | | 1 | | | | | 0 | 28 |
| Total | | | | | 28 | | | | | 26 | | | | | 2 | | | | | 0 | 56 |

PDI File #: **186316 AAAA**
Location: **N: Summer Street S: Summer Street**
Location: **E: Massport Freight Cor W: FedEx Driveway**
City, State: **Boston, MA**
Client: **VHB/ S. Mandzo**
Site Code: **TBA**
Count Date: **Tuesday, June 12, 2018**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Bicycles (on Roadway and Crosswalks)

| | Summer Street from North | | | | | | | Massport Freight Cor from East | | | | | | | Summer Street from South | | | | | | | FedEx Driveway from West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 4:00 PM | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 4:15 PM | 0 | 4 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 4:30 PM | 0 | 7 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 4:45 PM | 0 | 12 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| Total | 0 | 26 | 0 | 0 | 0 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 6 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 |
| 5:00 PM | 0 | 6 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 14 |
| 5:15 PM | 0 | 6 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 5:30 PM | 1 | 5 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 10 |
| 5:45 PM | 0 | 6 | 1 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| Total | 1 | 23 | 1 | 0 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 11 | 1 | 0 | 4 | 0 | 0 | 0 | 5 | 41 |
| Grand Total | 1 | 49 | 1 | 0 | 0 | 0 | 51 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 17 | 0 | 0 | 0 | 0 | 17 | 1 | 0 | 4 | 0 | 0 | 0 | 5 | 75 |
| Approach % | 2.0 | 96.1 | 2.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 20.0 | 0.0 | 80.0 | 0.0 | 0.0 | 0.0 | | |
| Total % | 1.3 | 65.3 | 1.3 | 0.0 | 0.0 | 0.0 | 68.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.7 | 2.7 | 0.0 | 22.7 | 0.0 | 0.0 | 0.0 | 0.0 | 22.7 | 1.3 | 0.0 | 5.3 | 0.0 | 0.0 | 0.0 | 6.7 | |
| Exiting Leg Total | | | | | | | 21 | | | | | | | 3 | | | | | | | 50 | | | | | | | 1 | 75 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 4:45 PM | Summer Street from North | | | | | | | Massport Freight Cor from East | | | | | | | Summer Street from South | | | | | | | FedEx Driveway from West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 4:45 PM | 0 | 12 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| 5:00 PM | 0 | 6 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 14 |
| 5:15 PM | 0 | 6 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 5:30 PM | 1 | 5 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 10 |
| Total Volume | 1 | 29 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 9 | 1 | 0 | 4 | 0 | 0 | 0 | 5 | 44 |
| % Approach Total | 3.3 | 96.7 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 20.0 | 0.0 | 80.0 | 0.0 | 0.0 | 0.0 | | |
| PHF | 0.250 | 0.604 | 0.000 | 0.000 | 0.000 | 0.000 | 0.625 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.563 | 0.000 | 0.000 | 0.000 | 0.000 | 0.563 | 0.250 | 0.000 | 0.250 | 0.000 | 0.000 | 0.000 | 0.313 | 0.786 |
| Entering Leg | 1 | 29 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 9 | 1 | 0 | 4 | 0 | 0 | 0 | 5 | 44 |
| Exiting Leg | | | | | | | 13 | | | | | | | 0 | | | | | | | 30 | | | | | | | 1 | 44 |
| Total | | | | | | | 43 | | | | | | | 0 | | | | | | | 39 | | | | | | | 6 | 88 |

PDI File #: **186316 AAAA**
Location: **N: Summer Street S: Summer Street**
Location: **E: Massport Freight Cor W: FedEx Driveway**
City, State: **Boston, MA**
Client: **VHB/ S. Mandzo**
Site Code: **TBA**
Count Date: **Tuesday, June 12, 2018**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Pedestrians

| | Summer Street | | | | | | | Massport Freight Cor | | | | | | | Summer Street | | | | | | | FedEx Driveway | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | | | from East | | | | | | | from South | | | | | | | from West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 2 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 7 | 8 | 14 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 4 | 9 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 11 | 13 | 23 |
| 4:30 PM | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 5 | 1 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 11 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 7 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 5 | 19 |
| Total | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 21 | 14 | 35 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 3 | 27 | 30 | 67 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 19 | 6 | 25 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 3 | 14 | 17 | 46 |
| 5:15 PM | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 32 | 5 | 37 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 9 | 26 | 35 | 75 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 2 | 35 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 28 | 31 | 66 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | 14 | 38 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 30 | 36 | 74 |
| Total | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 108 | 27 | 135 | 0 | 0 | 0 | 0 | 2 | 3 | 5 | 0 | 0 | 0 | 0 | 21 | 98 | 119 | 261 |
| Grand Total | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 129 | 41 | 170 | 0 | 0 | 0 | 0 | 2 | 4 | 6 | 0 | 0 | 0 | 0 | 24 | 125 | 149 | 328 |
| Approach % | 0 | 0 | 0 | 0 | 66.7 | 33.3 | | 0 | 0 | 0 | 0 | 75.9 | 24.1 | | 0 | 0 | 0 | 0 | 33.3 | 66.7 | | 0 | 0 | 0 | 0 | 16.1 | 83.9 | | |
| Total % | 0 | 0 | 0 | 0 | 0.61 | 0.3 | 0.91 | 0 | 0 | 0 | 0 | 39.3 | 12.5 | 51.8 | 0 | 0 | 0 | 0 | 0.61 | 1.22 | 1.83 | 0 | 0 | 0 | 0 | 7.32 | 38.1 | 45.4 | |
| Exiting Leg Total | | | | | | | 3 | | | | | | | 170 | | | | | | | 6 | | | | | | | 149 | 328 |

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

| 5:00 PM | Summer Street | | | | | | | Massport Freight Cor | | | | | | | Summer Street | | | | | | | FedEx Driveway | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | | | from East | | | | | | | from South | | | | | | | from West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 19 | 6 | 25 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 3 | 14 | 17 | 46 |
| 5:15 PM | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 32 | 5 | 37 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 9 | 26 | 35 | 75 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 2 | 35 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 28 | 31 | 66 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | 14 | 38 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 30 | 36 | 74 |
| Total Volume | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 108 | 27 | 135 | 0 | 0 | 0 | 0 | 2 | 3 | 5 | 0 | 0 | 0 | 0 | 21 | 98 | 119 | 261 |
| % Approach Total | 0.0 | 0.0 | 0.0 | 0.0 | 50.0 | 50.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 80.0 | 20.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 40.0 | 60.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 17.6 | 82.4 | | |
| PHF | 0.000 | 0.000 | 0.000 | 0.000 | 0.250 | 0.250 | 0.500 | 0.000 | 0.000 | 0.000 | 0.000 | 0.818 | 0.482 | 0.888 | 0.000 | 0.000 | 0.000 | 0.000 | 0.500 | 0.375 | 0.417 | 0.000 | 0.000 | 0.000 | 0.000 | 0.583 | 0.817 | 0.826 | 0.870 |
| Entering Leg | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 108 | 27 | 135 | 0 | 0 | 0 | 0 | 2 | 3 | 5 | 0 | 0 | 0 | 0 | 21 | 98 | 119 | 261 |
| Exiting Leg | | | | | | | 2 | | | | | | | 135 | | | | | | | 5 | | | | | | | 119 | 261 |
| Total | | | | | | | 4 | | | | | | | 270 | | | | | | | 10 | | | | | | | 238 | 522 |

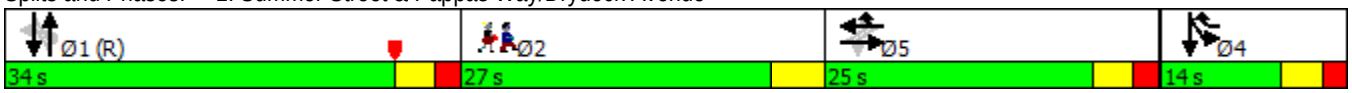
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBU | SBL | SBT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 135 | 90 | 5 | 125 | 45 | 80 | 10 | 875 | 270 | 5 | 245 | 450 |
| Future Volume (vph) | 135 | 90 | 5 | 125 | 45 | 80 | 10 | 875 | 270 | 5 | 245 | 450 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 14 | 12 | 12 | 13 | 16 | 10 | 11 | 12 | 12 | 13 | 12 |
| Storage Length (ft) | 0 | | 0 | 350 | | 0 | 70 | | 0 | | 350 | |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 0 | | 1 | |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | | 25 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 1.00 | 0.95 |
| Ped Bike Factor | | 0.98 | | | 0.99 | | 0.95 | 0.99 | | | 1.00 | 0.96 |
| Frt | | 0.997 | | | | 0.850 | | 0.965 | | | | 0.967 |
| Flt Protected | | 0.972 | | | 0.965 | | 0.950 | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 1594 | 0 | 0 | 1541 | 1458 | 1516 | 2808 | 0 | 0 | 1556 | 2712 |
| Flt Permitted | | 0.674 | | | 0.634 | | 0.155 | | | | 0.155 | |
| Satd. Flow (perm) | 0 | 1085 | 0 | 0 | 1004 | 1458 | 236 | 2808 | 0 | 0 | 253 | 2712 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | |
| Satd. Flow (RTOR) | | 1 | | | | 93 | | 41 | | | | 44 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | | 30 |
| Link Distance (ft) | | 745 | | | 950 | | | 1523 | | | | 585 |
| Travel Time (s) | | 16.9 | | | 21.6 | | | 34.6 | | | | 13.3 |
| Confl. Peds. (#/hr) | 32 | | 17 | 17 | | 32 | 127 | | 36 | | 36 | |
| Confl. Bikes (#/hr) | | | 7 | | | 3 | | | 7 | | | |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.86 | 0.86 | 0.86 | 0.89 | 0.89 | 0.89 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 11% | 11% | 0% | 8% | 18% | 13% | 0% | 8% | 2% | 0% | 8% | 13% |
| Adj. Flow (vph) | 159 | 106 | 6 | 145 | 52 | 93 | 11 | 983 | 303 | 5 | 261 | 479 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 271 | 0 | 0 | 197 | 93 | 11 | 1286 | 0 | 0 | 266 | 612 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | R NA | Left | Left |
| Median Width(ft) | | 0 | | | 6 | | | 13 | | | | 17 |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | | 0 |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | | 16 |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.05 | 1.14 | 1.14 | 1.10 | 0.97 | 1.25 | 1.19 | 1.14 | 1.14 | 1.10 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 9 | 15 | |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | | 1 | 1 | 2 |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | | Left | Left | Thru |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | 20 | 20 | 100 | | 20 | 20 | 100 |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | 20 | 20 | 6 | | 20 | 20 | 6 |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | | 94 |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | | 6 |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | Cl+Ex |

| Lane Group | SBR | Ø2 |
|---|---|---|
| Lane Configurations | | |
| Traffic Volume (vph) | 125 | |
| Future Volume (vph) | 125 | |
| Ideal Flow (vphpl) | 1900 | |
| Lane Width (ft) | 12 | |
| Storage Length (ft) | 0 | |
| Storage Lanes | 0 | |
| Taper Length (ft) | | |
| Lane Util. Factor | 0.95 | |
| Ped Bike Factor | | |
| Frt | | |
| Flt Protected | | |
| Satd. Flow (prot) | 0 | |
| Flt Permitted | | |
| Satd. Flow (perm) | 0 | |
| Right Turn on Red | Yes | |
| Satd. Flow (RTOR) | | |
| Link Speed (mph) | | |
| Link Distance (ft) | | |
| Travel Time (s) | | |
| Confl. Peds. (#/hr) | 127 | |
| Confl. Bikes (#/hr) | 12 | |
| Peak Hour Factor | 0.94 | |
| Heavy Vehicles (%) | 6% | |
| Adj. Flow (vph) | 133 | |
| Shared Lane Traffic (%) | | |
| Lane Group Flow (vph) | 0 | |
| Enter Blocked Intersection | No | |
| Lane Alignment | Right | |
| Median Width(ft) | | |
| Link Offset(ft) | | |
| Crosswalk Width(ft) | | |
| Two way Left Turn Lane | | |
| Headway Factor | 1.14 | |
| Turning Speed (mph) | 9 | |
| Number of Detectors | | |
| Detector Template | | |
| Leading Detector (ft) | | |
| Trailing Detector (ft) | | |
| Detector 1 Position(ft) | | |
| Detector 1 Size(ft) | | |
| Detector 1 Type | | |
| Detector 1 Channel | | |
| Detector 1 Extend (s) | | |
| Detector 1 Queue (s) | | |
| Detector 1 Delay (s) | | |
| Detector 2 Position(ft) | | |
| Detector 2 Size(ft) | | |
| Detector 2 Type | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBU | SBL | SBT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | 0.0 |
| Turn Type | Perm | NA | | Perm | NA | pt+ov | Perm | NA | | D.Pm | D.P+P | NA |
| Protected Phases | | 5 | | | 5 | 5 4 | | 1 | | | 4 | 1 4 |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | 1 | |
| Detector Phase | 5 | 5 | | 5 | 5 | 5 4 | 1 | 1 | | 1 | 4 | 1 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | |
| Minimum Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | | 13.0 | 13.0 | | 13.0 | 13.0 | |
| Total Split (s) | 25.0 | 25.0 | | 25.0 | 25.0 | | 34.0 | 34.0 | | 34.0 | 14.0 | |
| Total Split (%) | 25.0% | 25.0% | | 25.0% | 25.0% | | 34.0% | 34.0% | | 34.0% | 14.0% | |
| Maximum Green (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 29.0 | 29.0 | | 29.0 | 9.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | 0.0 | 0.0 | | | 0.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | 5.0 | 5.0 | | | 5.0 | |
| Lead/Lag | | | | | | | Lead | Lead | | Lead | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | None | None | | None | None | | C-Max | C-Max | | C-Max | None | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 41.6 | | | 41.6 | 55.6 | 29.0 | 29.0 | | | 38.0 | 43.0 |
| Actuated g/C Ratio | | 0.42 | | | 0.42 | 0.56 | 0.29 | 0.29 | | | 0.38 | 0.43 |
| v/c Ratio | | 0.60 | | | 0.47 | 0.11 | 0.16 | 1.53 | | | 1.25 | 0.51 |
| Control Delay | | 33.2 | | | 30.3 | 4.4 | 33.7 | 270.6 | | | 168.6 | 21.1 |
| Queue Delay | | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | | | 0.0 | 0.0 |
| Total Delay | | 33.2 | | | 30.3 | 4.4 | 33.7 | 270.6 | | | 168.6 | 21.1 |
| LOS | | C | | | C | A | C | F | | | F | C |
| Approach Delay | | 33.2 | | | 22.0 | | | 268.6 | | | | 65.8 |
| Approach LOS | | C | | | C | | | F | | | | E |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 100 | | | |
| Actuated Cycle Length: 100 | | | |
| Offset: 0 (0%), Referenced to phase 1:NBSB, Start of Yellow | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 1.53 | | | |
| Intersection Signal Delay: 154.0 | | Intersection LOS: F | |
| Intersection Capacity Utilization 91.5% | | ICU Level of Service F | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 1: Summer Street & Pappas Way/Drydock Avenue





| Lane Group | SBR | Ø2 |
|---|---|---|
| Detector 2 Channel | | |
| Detector 2 Extend (s) | | |
| Turn Type | | |
| Protected Phases | | 2 |
| Permitted Phases | | |
| Detector Phase | | |
| Switch Phase | | |
| Minimum Initial (s) | | 4.0 |
| Minimum Split (s) | | 27.0 |
| Total Split (s) | | 27.0 |
| Total Split (%) | | 27% |
| Maximum Green (s) | | 23.0 |
| Yellow Time (s) | | 4.0 |
| All-Red Time (s) | | 0.0 |
| Lost Time Adjust (s) | | |
| Total Lost Time (s) | | |
| Lead/Lag | | Lag |
| Lead-Lag Optimize? | | |
| Vehicle Extension (s) | | 2.0 |
| Recall Mode | | None |
| Walk Time (s) | | 7.0 |
| Flash Dont Walk (s) | | 16.0 |
| Pedestrian Calls (#/hr) | | 10 |
| Act Effct Green (s) | | |
| Actuated g/C Ratio | | |
| v/c Ratio | | |
| Control Delay | | |
| Queue Delay | | |
| Total Delay | | |
| LOS | | |
| Approach Delay | | |
| Approach LOS | | |

| Intersection Summary |
|---|



| Lane Group | EBT | WBT | WBR | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 271 | 197 | 93 | 11 | 1286 | 266 | 612 |
| v/c Ratio | 0.60 | 0.47 | 0.11 | 0.16 | 1.53 | 1.25 | 0.51 |
| Control Delay | 33.2 | 30.3 | 4.4 | 33.7 | 270.6 | 168.6 | 21.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 33.2 | 30.3 | 4.4 | 33.7 | 270.6 | 168.6 | 21.1 |
| Queue Length 50th (ft) | 117 | 80 | 0 | 5 | ~602 | ~163 | 135 |
| Queue Length 95th (ft) | #349 | #252 | 30 | 21 | #727 | #324 | 187 |
| Internal Link Dist (ft) | 665 | 870 | | | 1443 | | 505 |
| Turn Bay Length (ft) | | | | 70 | | 350 | |
| Base Capacity (vph) | 451 | 417 | 851 | 68 | 843 | 213 | 1191 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.60 | 0.47 | 0.11 | 0.16 | 1.53 | 1.25 | 0.51 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBU | SBL | SBT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 135 | 90 | 5 | 125 | 45 | 80 | 10 | 875 | 270 | 5 | 245 | 450 |
| Future Volume (vph) | 135 | 90 | 5 | 125 | 45 | 80 | 10 | 875 | 270 | 5 | 245 | 450 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 14 | 12 | 12 | 13 | 16 | 10 | 11 | 12 | 12 | 13 | 12 |
| Total Lost time (s) | | 5.0 | | | 5.0 | 5.0 | 5.0 | 5.0 | | | 5.0 | 5.0 |
| Lane Util. Factor | | 1.00 | | | 1.00 | 1.00 | 1.00 | 0.95 | | | 1.00 | 0.95 |
| Frpb, ped/bikes | | 1.00 | | | 1.00 | 1.00 | 1.00 | 0.99 | | | 1.00 | 0.96 |
| Flpb, ped/bikes | | 0.99 | | | 0.99 | 1.00 | 0.95 | 1.00 | | | 1.00 | 1.00 |
| Frt | | 1.00 | | | 1.00 | 0.85 | 1.00 | 0.96 | | | 1.00 | 0.97 |
| Flt Protected | | 0.97 | | | 0.96 | 1.00 | 0.95 | 1.00 | | | 0.95 | 1.00 |
| Satd. Flow (prot) | | 1578 | | | 1532 | 1458 | 1436 | 2803 | | | 1556 | 2706 |
| Flt Permitted | | 0.67 | | | 0.63 | 1.00 | 0.16 | 1.00 | | | 0.16 | 1.00 |
| Satd. Flow (perm) | | 1094 | | | 1008 | 1458 | 234 | 2803 | | | 254 | 2706 |
| Peak-hour factor, PHF | 0.85 | 0.85 | 0.85 | 0.86 | 0.86 | 0.86 | 0.89 | 0.89 | 0.89 | 0.94 | 0.94 | 0.94 |
| Adj. Flow (vph) | 159 | 106 | 6 | 145 | 52 | 93 | 11 | 983 | 303 | 5 | 261 | 479 |
| RTOR Reduction (vph) | 0 | 1 | 0 | 0 | 0 | 41 | 0 | 30 | 0 | 0 | 0 | 26 |
| Lane Group Flow (vph) | 0 | 270 | 0 | 0 | 197 | 52 | 11 | 1256 | 0 | 0 | 266 | 586 |
| Confl. Peds. (#/hr) | 32 | | 17 | 17 | | 32 | 127 | | 36 | | 36 | |
| Confl. Bikes (#/hr) | | | 7 | | | 3 | | | 7 | | | |
| Heavy Vehicles (%) | 11% | 11% | 0% | 8% | 18% | 13% | 0% | 8% | 2% | 0% | 8% | 13% |
| Turn Type | Perm | NA | | Perm | NA | pt+ov | Perm | NA | | D.Pm | D.P+P | NA |
| Protected Phases | | 5 | | | 5 | 5 4 | | 1 | | | 4 | 1 4 |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | 1 | |
| Actuated Green, G (s) | | 41.6 | | | 41.6 | 55.6 | 25.8 | 25.8 | | | 34.8 | 39.8 |
| Effective Green, g (s) | | 41.6 | | | 41.6 | 55.6 | 25.8 | 25.8 | | | 34.8 | 39.8 |
| Actuated g/C Ratio | | 0.42 | | | 0.42 | 0.56 | 0.26 | 0.26 | | | 0.35 | 0.40 |
| Clearance Time (s) | | 5.0 | | | 5.0 | | 5.0 | 5.0 | | | 5.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | | 2.0 | 2.0 | | | 2.0 | |
| Lane Grp Cap (vph) | | 455 | | | 419 | 810 | 60 | 723 | | | 205 | 1076 |
| v/s Ratio Prot | | | | | | 0.04 | | c0.45 | | | c0.12 | 0.22 |
| v/s Ratio Perm | | c0.25 | | | 0.20 | | 0.05 | | | | 0.33 | |
| v/c Ratio | | 0.59 | | | 0.47 | 0.06 | 0.18 | 1.74 | | | 1.30 | 0.54 |
| Uniform Delay, d1 | | 22.7 | | | 21.2 | 10.2 | 28.9 | 37.1 | | | 28.7 | 23.1 |
| Progression Factor | | 1.00 | | | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 | 1.00 |
| Incremental Delay, d2 | | 1.4 | | | 0.3 | 0.0 | 6.6 | 337.2 | | | 165.0 | 0.3 |
| Delay (s) | | 24.0 | | | 21.5 | 10.2 | 35.5 | 374.3 | | | 193.6 | 23.4 |
| Level of Service | | C | | | C | B | D | F | | | F | C |
| Approach Delay (s) | | 24.0 | | | 17.9 | | | 371.5 | | | | 75.0 |
| Approach LOS | | C | | | B | | | F | | | | E |

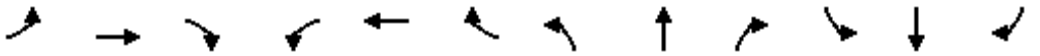
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 204.4 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 1.00 | | |
| Actuated Cycle Length (s) | 100.0 | Sum of lost time (s) | 19.0 |
| Intersection Capacity Utilization | 91.5% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



| Movement | SBR |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | 125 |
| Future Volume (vph) | 125 |
| Ideal Flow (vphpl) | 1900 |
| Lane Width | 12 |
| Total Lost time (s) | |
| Lane Util. Factor | |
| Frpb, ped/bikes | |
| Flpb, ped/bikes | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Peak-hour factor, PHF | 0.94 |
| Adj. Flow (vph) | 133 |
| RTOR Reduction (vph) | 0 |
| Lane Group Flow (vph) | 0 |
| Confl. Peds. (#/hr) | 127 |
| Confl. Bikes (#/hr) | 12 |
| Heavy Vehicles (%) | 6% |
| Turn Type | |
| Protected Phases | |
| Permitted Phases | |
| Actuated Green, G (s) | |
| Effective Green, g (s) | |
| Actuated g/C Ratio | |
| Clearance Time (s) | |
| Vehicle Extension (s) | |
| Lane Grp Cap (vph) | |
| v/s Ratio Prot | |
| v/s Ratio Perm | |
| v/c Ratio | |
| Uniform Delay, d1 | |
| Progression Factor | |
| Incremental Delay, d2 | |
| Delay (s) | |
| Level of Service | |
| Approach Delay (s) | |
| Approach LOS | |

| Intersection Summary |
|---|

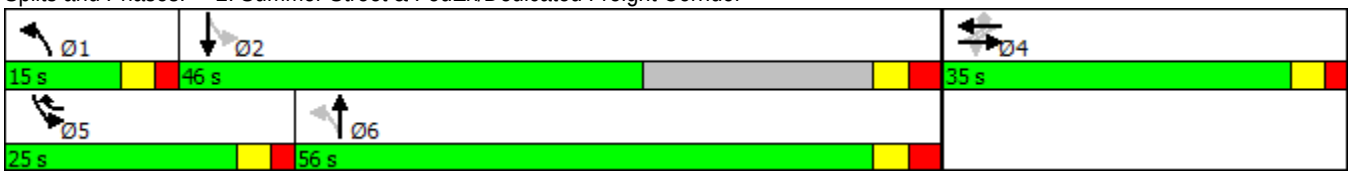


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 30 | 0 | 0 | 15 | 0 | 55 | 0 | 1070 | 20 | 70 | 510 | 0 |
| Future Volume (vph) | 30 | 0 | 0 | 15 | 0 | 55 | 0 | 1070 | 20 | 70 | 510 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 13 | 13 | 13 | 12 | 12 | 12 | 10 | 10 | 10 | 11 | 11 | 11 |
| Storage Length (ft) | 0 | | 0 | 0 | | 60 | 60 | | 0 | 120 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 50 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Frt | | | | | | 0.850 | | 0.997 | | | | |
| Flt Protected | | 0.950 | | | 0.950 | | | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1679 | 0 | 0 | 1624 | 727 | 1596 | 3023 | 0 | 785 | 2991 | 0 |
| Flt Permitted | | 0.747 | | | 0.736 | | | | | 0.163 | | |
| Satd. Flow (perm) | 0 | 1320 | 0 | 0 | 1259 | 727 | 1596 | 3023 | 0 | 135 | 2991 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | | 28 | | 2 | | | | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 203 | | | 352 | | | 675 | | | 1523 | |
| Travel Time (s) | | 4.6 | | | 8.0 | | | 15.3 | | | 34.6 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 100% | 0% | 0% | 0% | 100% | 5% | 0% |
| Adj. Flow (vph) | 33 | 0 | 0 | 16 | 0 | 60 | 0 | 1163 | 22 | 76 | 554 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 33 | 0 | 0 | 16 | 60 | 0 | 1185 | 0 | 76 | 554 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 12 | | | 11 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.10 | 1.10 | 1.10 | 1.14 | 1.14 | 1.14 | 1.25 | 1.25 | 1.25 | 1.19 | 1.19 | 1.19 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | 20 | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | 20 | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | pm+ov | pm+pt | NA | | pm+pt | NA | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Protected Phases | | 4 | | | 4 | 5 | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 4 | | | 4 | | 4 | 6 | 6 | | 2 | | |
| Detector Phase | 4 | 4 | | 4 | 4 | 5 | 1 | 6 | | 5 | 2 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 6.0 | 6.0 | | 6.0 | 6.0 | 6.0 | 6.0 | 10.0 | | 6.0 | 10.0 | |
| Minimum Split (s) | 26.0 | 26.0 | | 26.0 | 26.0 | 11.0 | 11.0 | 24.0 | | 11.0 | 24.0 | |
| Total Split (s) | 35.0 | 35.0 | | 35.0 | 35.0 | 25.0 | 15.0 | 56.0 | | 25.0 | 46.0 | |
| Total Split (%) | 30.2% | 30.2% | | 30.2% | 30.2% | 21.6% | 12.9% | 48.3% | | 21.6% | 39.7% | |
| Maximum Green (s) | 30.0 | 30.0 | | 30.0 | 30.0 | 20.0 | 10.0 | 50.0 | | 20.0 | 40.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 3.0 | | 2.0 | 3.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | 5.0 | 5.0 | 6.0 | | 5.0 | 6.0 | |
| Lead/Lag | | | | | | Lead | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | None | None | | None | None | None | None | Ped | | None | Max | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | | 7.0 | | | | |
| Flash Dont Walk (s) | 14.0 | 14.0 | | 14.0 | 14.0 | | | 9.0 | | | | |
| Pedestrian Calls (#/hr) | 10 | 10 | | 10 | 10 | | | 10 | | | | |
| Act Effct Green (s) | | 8.8 | | | 8.8 | 18.5 | | 44.4 | | 57.1 | 59.3 | |
| Actuated g/C Ratio | | 0.12 | | | 0.12 | 0.26 | | 0.63 | | 0.81 | 0.84 | |
| v/c Ratio | | 0.20 | | | 0.10 | 0.29 | | 0.63 | | 0.38 | 0.22 | |
| Control Delay | | 35.3 | | | 34.1 | 15.2 | | 15.5 | | 9.2 | 3.2 | |
| Queue Delay | | 0.0 | | | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | |
| Total Delay | | 35.3 | | | 34.1 | 15.2 | | 15.5 | | 9.2 | 3.2 | |
| LOS | | D | | | C | B | | B | | A | A | |
| Approach Delay | | 35.3 | | | 19.2 | | | 15.5 | | | 3.9 | |
| Approach LOS | | D | | | B | | | B | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 116 | | | |
| Actuated Cycle Length: 70.8 | | | |
| Natural Cycle: 75 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 0.63 | | | |
| Intersection Signal Delay: 12.2 | | Intersection LOS: B | |
| Intersection Capacity Utilization 60.4% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 2: Summer Street & FedEx/Dedicated Freight Corridor





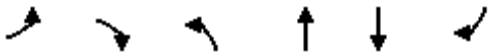
| Lane Group | EBT | WBT | WBR | NBT | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 33 | 16 | 60 | 1185 | 76 | 554 |
| v/c Ratio | 0.20 | 0.10 | 0.29 | 0.63 | 0.38 | 0.22 |
| Control Delay | 35.3 | 34.1 | 15.2 | 15.5 | 9.2 | 3.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 35.3 | 34.1 | 15.2 | 15.5 | 9.2 | 3.2 |
| Queue Length 50th (ft) | 12 | 6 | 9 | 179 | 6 | 28 |
| Queue Length 95th (ft) | 47 | 28 | 41 | 461 | 34 | 86 |
| Internal Link Dist (ft) | 123 | 272 | | 595 | | 1443 |
| Turn Bay Length (ft) | | | 60 | | 120 | |
| Base Capacity (vph) | 604 | 576 | 323 | 2362 | 307 | 2638 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.05 | 0.03 | 0.19 | 0.50 | 0.25 | 0.21 |

Intersection Summary

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 30 | 0 | 0 | 15 | 0 | 55 | 0 | 1070 | 20 | 70 | 510 | 0 |
| Future Volume (vph) | 30 | 0 | 0 | 15 | 0 | 55 | 0 | 1070 | 20 | 70 | 510 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 13 | 13 | 13 | 12 | 12 | 12 | 10 | 10 | 10 | 11 | 11 | 11 |
| Total Lost time (s) | | 5.0 | | | 5.0 | 5.0 | | 6.0 | | 5.0 | 6.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | 1.00 | | 0.95 | | 1.00 | 0.95 | |
| Frt | | 1.00 | | | 1.00 | 0.85 | | 1.00 | | 1.00 | 1.00 | |
| Flt Protected | | 0.95 | | | 0.95 | 1.00 | | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 1679 | | | 1624 | 727 | | 3024 | | 785 | 2991 | |
| Flt Permitted | | 0.75 | | | 0.74 | 1.00 | | 1.00 | | 0.16 | 1.00 | |
| Satd. Flow (perm) | | 1320 | | | 1258 | 727 | | 3024 | | 135 | 2991 | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 33 | 0 | 0 | 16 | 0 | 60 | 0 | 1163 | 22 | 76 | 554 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 23 | 0 | 1 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 33 | 0 | 0 | 16 | 37 | 0 | 1184 | 0 | 76 | 554 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 100% | 0% | 0% | 0% | 100% | 5% | 0% |
| Turn Type | Perm | NA | | Perm | NA | pm+ov | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | | 4 | | | 4 | 5 | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 4 | | | 4 | | 4 | 6 | 6 | | 2 | | |
| Actuated Green, G (s) | | 5.6 | | | 5.6 | 14.4 | | 43.0 | | 56.8 | 56.8 | |
| Effective Green, g (s) | | 5.6 | | | 5.6 | 14.4 | | 43.0 | | 56.8 | 56.8 | |
| Actuated g/C Ratio | | 0.08 | | | 0.08 | 0.20 | | 0.59 | | 0.77 | 0.77 | |
| Clearance Time (s) | | 5.0 | | | 5.0 | 5.0 | | 6.0 | | 5.0 | 6.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | 2.0 | | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | | 100 | | | 95 | 192 | | 1771 | | 182 | 2314 | |
| v/s Ratio Prot | | | | | | 0.02 | | c0.39 | | c0.05 | 0.19 | |
| v/s Ratio Perm | | c0.03 | | | 0.01 | 0.03 | | | | 0.27 | | |
| v/c Ratio | | 0.33 | | | 0.17 | 0.20 | | 0.67 | | 0.42 | 0.24 | |
| Uniform Delay, d1 | | 32.1 | | | 31.7 | 24.7 | | 10.3 | | 4.6 | 2.3 | |
| Progression Factor | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 0.7 | | | 0.3 | 0.2 | | 0.8 | | 0.6 | 0.2 | |
| Delay (s) | | 32.8 | | | 32.0 | 24.8 | | 11.1 | | 5.2 | 2.5 | |
| Level of Service | | C | | | C | C | | B | | A | A | |
| Approach Delay (s) | | 32.8 | | | 26.4 | | | 11.1 | | | 2.9 | |
| Approach LOS | | C | | | C | | | B | | | A | |

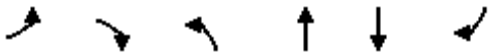
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 9.4 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.60 | | |
| Actuated Cycle Length (s) | 73.4 | Sum of lost time (s) | 16.0 |
| Intersection Capacity Utilization | 60.4% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 15 | 10 | 30 | 1000 | 510 | 45 |
| Future Volume (vph) | 15 | 10 | 30 | 1000 | 510 | 45 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 14 | 12 | 10 | 10 | 10 | 10 |
| Lane Util. Factor | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 0.95 |
| Ped Bike Factor | | | | | | |
| Frt | 0.945 | | | | 0.988 | |
| Flt Protected | 0.971 | | | 0.999 | | |
| Satd. Flow (prot) | 1430 | 0 | 0 | 2998 | 2916 | 0 |
| Flt Permitted | 0.971 | | | 0.999 | | |
| Satd. Flow (perm) | 1430 | 0 | 0 | 2998 | 2916 | 0 |
| Link Speed (mph) | 30 | | | 30 | 30 | |
| Link Distance (ft) | 362 | | | 355 | 675 | |
| Travel Time (s) | 8.2 | | | 8.1 | 15.3 | |
| Confl. Peds. (#/hr) | | | 126 | | | 126 |
| Confl. Bikes (#/hr) | | | | | | 4 |
| Peak Hour Factor | 0.64 | 0.64 | 0.97 | 0.97 | 0.89 | 0.89 |
| Heavy Vehicles (%) | 8% | 30% | 3% | 1% | 3% | 0% |
| Parking (#/hr) | | | 1 | | | 1 |
| Adj. Flow (vph) | 23 | 16 | 31 | 1031 | 573 | 51 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 39 | 0 | 0 | 1062 | 624 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(ft) | 14 | | | 10 | 10 | |
| Link Offset(ft) | 0 | | | 0 | 0 | |
| Crosswalk Width(ft) | 16 | | | 16 | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.05 | 1.14 | 1.25 | 1.25 | 1.25 | 1.25 |
| Turning Speed (mph) | 15 | 9 | 15 | | | 9 |
| Sign Control | Stop | | | Free | Free | |

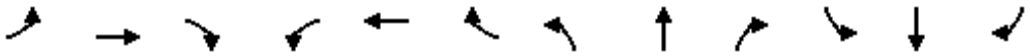
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 62.8% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 15 | 10 | 30 | 1000 | 510 | 45 |
| Future Volume (Veh/h) | 15 | 10 | 30 | 1000 | 510 | 45 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.64 | 0.64 | 0.97 | 0.97 | 0.89 | 0.89 |
| Hourly flow rate (vph) | 23 | 16 | 31 | 1031 | 573 | 51 |
| Pedestrians | 126 | | | | | |
| Lane Width (ft) | 14.0 | | | | | |
| Walking Speed (ft/s) | 4.0 | | | | | |
| Percent Blockage | 12 | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | 355 | 675 | |
| pX, platoon unblocked | 0.85 | | | | | |
| vC, conflicting volume | 1302 | 438 | 750 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 997 | 438 | 750 | | | |
| tC, single (s) | 7.0 | 7.5 | 4.2 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.6 | 3.6 | 2.2 | | | |
| p0 queue free % | 86 | 96 | 96 | | | |
| cM capacity (veh/h) | 164 | 435 | 744 | | | |

| Direction, Lane # | EB 1 | NB 1 | NB 2 | SB 1 | SB 2 |
|---|---|---|---|---|---|
| Volume Total | 39 | 375 | 687 | 382 | 242 |
| Volume Left | 23 | 31 | 0 | 0 | 0 |
| Volume Right | 16 | 0 | 0 | 0 | 51 |
| cSH | 221 | 744 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.18 | 0.04 | 0.40 | 0.22 | 0.14 |
| Queue Length 95th (ft) | 16 | 3 | 0 | 0 | 0 |
| Control Delay (s) | 24.8 | 1.3 | 0.0 | 0.0 | 0.0 |
| Lane LOS | C | A | | | |
| Approach Delay (s) | 24.8 | 0.5 | | 0.0 | |
| Approach LOS | C | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.8 | | |
| Intersection Capacity Utilization | 62.8% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |



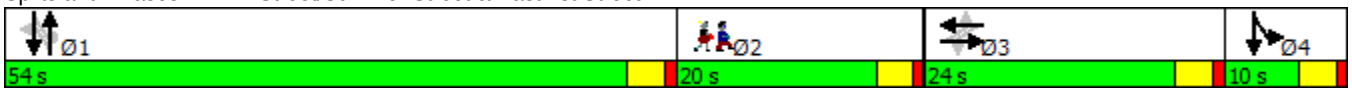
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 40 | 50 | 40 | 10 | 90 | 300 | 40 | 675 | 30 | 115 | 350 | 80 |
| Future Volume (vph) | 40 | 50 | 40 | 10 | 90 | 300 | 40 | 675 | 30 | 115 | 350 | 80 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 15 | 12 | 12 | 16 | 12 | 12 | 9 | 12 | 12 | 12 | 12 |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 100 | | 0 | 100 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Ped Bike Factor | | 0.98 | | | 0.97 | | | 0.99 | | | 0.98 | |
| Frt | | 0.958 | | | 0.899 | | | 0.994 | | | 0.978 | |
| Flt Protected | | 0.985 | | | 0.999 | | | 0.997 | | | 0.990 | |
| Satd. Flow (prot) | 0 | 1606 | 0 | 0 | 1665 | 0 | 0 | 2793 | 0 | 0 | 2908 | 0 |
| Flt Permitted | | 0.436 | | | 0.992 | | | 0.890 | | | 0.630 | |
| Satd. Flow (perm) | 0 | 710 | 0 | 0 | 1653 | 0 | 0 | 2487 | 0 | 0 | 1846 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 18 | | | 123 | | | 5 | | | 27 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 540 | | | 576 | | | 340 | | | 355 | |
| Travel Time (s) | | 12.3 | | | 13.1 | | | 7.7 | | | 8.1 | |
| Confl. Peds. (#/hr) | 16 | | 17 | 17 | | 16 | 104 | | 44 | 44 | | 104 |
| Confl. Bikes (#/hr) | | | 2 | | | 2 | | | 11 | | | 2 |
| Peak Hour Factor | 0.84 | 0.84 | 0.84 | 0.83 | 0.83 | 0.83 | 0.94 | 0.94 | 0.94 | 0.91 | 0.91 | 0.91 |
| Heavy Vehicles (%) | 12% | 6% | 7% | 17% | 1% | 1% | 2% | 2% | 38% | 15% | 3% | 8% |
| Adj. Flow (vph) | 48 | 60 | 48 | 12 | 108 | 361 | 43 | 718 | 32 | 126 | 385 | 88 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 156 | 0 | 0 | 481 | 0 | 0 | 793 | 0 | 0 | 599 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.01 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 1.30 | 1.14 | 1.14 | 1.14 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |

| Lane Group | Ø2 |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | |
| Future Volume (vph) | |
| Ideal Flow (vphpl) | |
| Lane Width (ft) | |
| Storage Length (ft) | |
| Storage Lanes | |
| Taper Length (ft) | |
| Lane Util. Factor | |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Right Turn on Red | |
| Satd. Flow (RTOR) | |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | |
| Heavy Vehicles (%) | |
| Adj. Flow (vph) | |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | |
| Enter Blocked Intersection | |
| Lane Alignment | |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | |
| Turning Speed (mph) | |
| Number of Detectors | |
| Detector Template | |
| Leading Detector (ft) | |
| Trailing Detector (ft) | |
| Detector 1 Position(ft) | |
| Detector 1 Size(ft) | |
| Detector 1 Type | |
| Detector 1 Channel | |
| Detector 1 Extend (s) | |
| Detector 1 Queue (s) | |
| Detector 1 Delay (s) | |
| Detector 2 Position(ft) | |
| Detector 2 Size(ft) | |
| Detector 2 Type | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | D.P+P | NA | |
| Protected Phases | | 3 | | | 3 | | | 1 | | 4 | 1 4 | |
| Permitted Phases | 3 | | | 3 | | | 1 | | | 1 | | |
| Detector Phase | 3 | 3 | | 3 | 3 | | 1 | 1 | | 4 | 1 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 10.0 | 10.0 | | 5.0 | | |
| Minimum Split (s) | 11.0 | 11.0 | | 11.0 | 11.0 | | 14.0 | 14.0 | | 9.0 | | |
| Total Split (s) | 24.0 | 24.0 | | 24.0 | 24.0 | | 54.0 | 54.0 | | 10.0 | | |
| Total Split (%) | 22.2% | 22.2% | | 22.2% | 22.2% | | 50.0% | 50.0% | | 9.3% | | |
| Maximum Green (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 50.0 | 50.0 | | 6.0 | | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | |
| Total Lost Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | | |
| Lead/Lag | Lead | Lead | | Lead | Lead | | Lead | Lead | | Lag | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 1.0 | | |
| Recall Mode | None | None | | None | None | | Max | Max | | None | | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 20.2 | | | 20.2 | | | 50.5 | | | 56.6 | |
| Actuated g/C Ratio | | 0.21 | | | 0.21 | | | 0.53 | | | 0.59 | |
| v/c Ratio | | 0.96 | | | 1.08 | | | 0.60 | | | 0.51 | |
| Control Delay | | 96.8 | | | 95.6 | | | 19.9 | | | 12.5 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 96.8 | | | 95.6 | | | 19.9 | | | 12.5 | |
| LOS | | F | | | F | | | B | | | B | |
| Approach Delay | | 96.8 | | | 95.6 | | | 19.9 | | | 12.5 | |
| Approach LOS | | F | | | F | | | B | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 108 | | | |
| Actuated Cycle Length: 96 | | | |
| Natural Cycle: 90 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 1.08 | | | |
| Intersection Signal Delay: 41.6 | | Intersection LOS: D | |
| Intersection Capacity Utilization 83.6% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 4: L Street/Summer Street & East 1st Street



| Lane Group | Ø2 |
|---|---|
| Detector 2 Channel | |
| Detector 2 Extend (s) | |
| Turn Type | |
| Protected Phases | 2 |
| Permitted Phases | |
| Detector Phase | |
| Switch Phase | |
| Minimum Initial (s) | 4.0 |
| Minimum Split (s) | 20.0 |
| Total Split (s) | 20.0 |
| Total Split (%) | 19% |
| Maximum Green (s) | 16.0 |
| Yellow Time (s) | 3.0 |
| All-Red Time (s) | 1.0 |
| Lost Time Adjust (s) | |
| Total Lost Time (s) | |
| Lead/Lag | Lag |
| Lead-Lag Optimize? | |
| Vehicle Extension (s) | 3.0 |
| Recall Mode | None |
| Walk Time (s) | 7.0 |
| Flash Dont Walk (s) | 9.0 |
| Pedestrian Calls (#/hr) | 22 |
| Act Effct Green (s) | |
| Actuated g/C Ratio | |
| v/c Ratio | |
| Control Delay | |
| Queue Delay | |
| Total Delay | |
| LOS | |
| Approach Delay | |
| Approach LOS | |

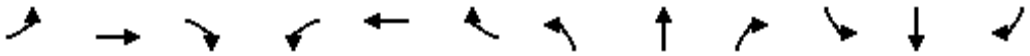
| Intersection Summary |
|---|

| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 156 | 481 | 793 | 599 |
| v/c Ratio | 0.96 | 1.08 | 0.60 | 0.51 |
| Control Delay | 96.8 | 95.6 | 19.9 | 12.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 96.8 | 95.6 | 19.9 | 12.5 |
| Queue Length 50th (ft) | 75 | ~219 | 135 | 57 |
| Queue Length 95th (ft) | #220 | #462 | 292 | 148 |
| Internal Link Dist (ft) | 460 | 496 | 260 | 275 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 163 | 444 | 1311 | 1165 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.96 | 1.08 | 0.60 | 0.51 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

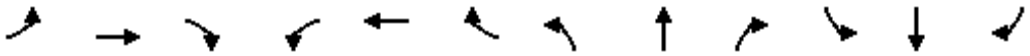
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 40 | 50 | 40 | 10 | 90 | 300 | 40 | 675 | 30 | 115 | 350 | 80 |
| Future Volume (vph) | 40 | 50 | 40 | 10 | 90 | 300 | 40 | 675 | 30 | 115 | 350 | 80 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 15 | 12 | 12 | 16 | 12 | 12 | 9 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | | | 0.95 | | | 0.95 | |
| Frpb, ped/bikes | | 0.98 | | | 0.97 | | | 1.00 | | | 0.98 | |
| Flpb, ped/bikes | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Frt | | 0.96 | | | 0.90 | | | 0.99 | | | 0.98 | |
| Flt Protected | | 0.98 | | | 1.00 | | | 1.00 | | | 0.99 | |
| Satd. Flow (prot) | | 1606 | | | 1667 | | | 2788 | | | 2907 | |
| Flt Permitted | | 0.44 | | | 0.99 | | | 0.89 | | | 0.63 | |
| Satd. Flow (perm) | | 710 | | | 1655 | | | 2489 | | | 1852 | |
| Peak-hour factor, PHF | 0.84 | 0.84 | 0.84 | 0.83 | 0.83 | 0.83 | 0.94 | 0.94 | 0.94 | 0.91 | 0.91 | 0.91 |
| Adj. Flow (vph) | 48 | 60 | 48 | 12 | 108 | 361 | 43 | 718 | 32 | 126 | 385 | 88 |
| RTOR Reduction (vph) | 0 | 14 | 0 | 0 | 98 | 0 | 0 | 2 | 0 | 0 | 11 | 0 |
| Lane Group Flow (vph) | 0 | 142 | 0 | 0 | 383 | 0 | 0 | 791 | 0 | 0 | 588 | 0 |
| Confl. Peds. (#/hr) | 16 | | 17 | 17 | | 16 | 104 | | 44 | 44 | | 104 |
| Confl. Bikes (#/hr) | | | 2 | | | 2 | | | 11 | | | 2 |
| Heavy Vehicles (%) | 12% | 6% | 7% | 17% | 1% | 1% | 2% | 2% | 38% | 15% | 3% | 8% |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | D.P+P | NA | |
| Protected Phases | | 3 | | | 3 | | | 1 | | 4 | 1 4 | |
| Permitted Phases | 3 | | | 3 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 20.2 | | | 20.2 | | | 50.5 | | | 56.6 | |
| Effective Green, g (s) | | 20.2 | | | 20.2 | | | 50.5 | | | 56.6 | |
| Actuated g/C Ratio | | 0.21 | | | 0.21 | | | 0.51 | | | 0.57 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | | | 3.0 | | | | |
| Lane Grp Cap (vph) | | 145 | | | 339 | | | 1276 | | | 1129 | |
| v/s Ratio Prot | | | | | | | | | | | c0.03 | |
| v/s Ratio Perm | | 0.20 | | | c0.23 | | | c0.32 | | | 0.27 | |
| v/c Ratio | | 0.98 | | | 1.13 | | | 0.62 | | | 0.52 | |
| Uniform Delay, d1 | | 38.9 | | | 39.1 | | | 17.1 | | | 12.7 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 67.1 | | | 89.0 | | | 2.3 | | | 0.2 | |
| Delay (s) | | 106.1 | | | 128.2 | | | 19.4 | | | 12.9 | |
| Level of Service | | F | | | F | | | B | | | B | |
| Approach Delay (s) | | 106.1 | | | 128.2 | | | 19.4 | | | 12.9 | |
| Approach LOS | | F | | | F | | | B | | | B | |

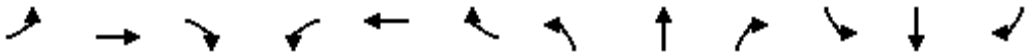
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 49.9 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.69 | | |
| Actuated Cycle Length (s) | 98.5 | Sum of lost time (s) | 16.0 |
| Intersection Capacity Utilization | 83.6% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 15 | 5 | 20 | 10 | 15 | 55 | 40 | 655 | 30 | 10 | 380 | 20 |
| Future Volume (vph) | 15 | 5 | 20 | 10 | 15 | 55 | 40 | 655 | 30 | 10 | 380 | 20 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 16 | 12 | 12 | 16 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.932 | | | 0.907 | | | 0.994 | | | 0.993 | |
| Flt Protected | | 0.982 | | | 0.994 | | | 0.997 | | | 0.999 | |
| Satd. Flow (prot) | 0 | 1461 | 0 | 0 | 1404 | 0 | 0 | 1832 | 0 | 0 | 1849 | 0 |
| Flt Permitted | | 0.982 | | | 0.994 | | | 0.997 | | | 0.999 | |
| Satd. Flow (perm) | 0 | 1461 | 0 | 0 | 1404 | 0 | 0 | 1832 | 0 | 0 | 1849 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 429 | | | 453 | | | 298 | | | 340 | |
| Travel Time (s) | | 9.8 | | | 10.3 | | | 6.8 | | | 7.7 | |
| Confl. Peds. (#/hr) | 15 | | 20 | 20 | | 15 | 90 | | 41 | 41 | | 90 |
| Confl. Bikes (#/hr) | | | | | | 1 | | | 9 | | | |
| Peak Hour Factor | 0.57 | 0.57 | 0.57 | 0.88 | 0.88 | 0.88 | 0.94 | 0.94 | 0.94 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 10% | 7% | 0% | 3% | 4% | 25% | 0% | 4% | 5% |
| Adj. Flow (vph) | 26 | 9 | 35 | 11 | 17 | 63 | 43 | 697 | 32 | 10 | 396 | 21 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 70 | 0 | 0 | 91 | 0 | 0 | 772 | 0 | 0 | 427 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.25 | 1.14 | 1.14 | 1.25 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 0.97 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 78.8% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 15 | 5 | 20 | 10 | 15 | 55 | 40 | 655 | 30 | 10 | 380 | 20 |
| Future Volume (Veh/h) | 15 | 5 | 20 | 10 | 15 | 55 | 40 | 655 | 30 | 10 | 380 | 20 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.57 | 0.57 | 0.57 | 0.88 | 0.88 | 0.88 | 0.94 | 0.94 | 0.94 | 0.96 | 0.96 | 0.96 |
| Hourly flow rate (vph) | 26 | 9 | 35 | 11 | 17 | 63 | 43 | 697 | 32 | 10 | 396 | 21 |
| Pedestrians | | 90 | | | 41 | | | 20 | | | 15 | |
| Lane Width (ft) | | 10.0 | | | 10.0 | | | 16.0 | | | 16.0 | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Percent Blockage | | 6 | | | 3 | | | 2 | | | 2 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | 602 | | | 340 | |
| pX, platoon unblocked | 0.86 | 0.86 | 0.89 | 0.86 | 0.86 | 0.80 | 0.89 | | | 0.80 | | |
| vC, conflicting volume | 1402 | 1372 | 516 | 1326 | 1367 | 769 | 507 | | | 770 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1098 | 1064 | 395 | 1010 | 1058 | 591 | 385 | | | 592 | | |
| tC, single (s) | *4.0 | *4.0 | *5.0 | *4.0 | *4.0 | *4.0 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.6 | 4.1 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 91 | 97 | 94 | 97 | 95 | 89 | 96 | | | 99 | | |
| cM capacity (veh/h) | 298 | 347 | 613 | 349 | 346 | 563 | 975 | | | 776 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 70 | 91 | 772 | 427 |
| Volume Left | 26 | 11 | 43 | 10 |
| Volume Right | 35 | 63 | 32 | 21 |
| cSH | 411 | 472 | 975 | 776 |
| Volume to Capacity | 0.17 | 0.19 | 0.04 | 0.01 |
| Queue Length 95th (ft) | 15 | 18 | 3 | 1 |
| Control Delay (s) | 15.5 | 14.4 | 1.1 | 0.4 |
| Lane LOS | C | B | A | A |
| Approach Delay (s) | 15.5 | 14.4 | 1.1 | 0.4 |
| Approach LOS | C | B | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 2.5 | | | |
| Intersection Capacity Utilization | 78.8% | ICU Level of Service | D | |
| Analysis Period (min) | 15 | | | |

* User Entered Value



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBU | NBL | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 15 | 0 | 20 | 5 | 15 | 30 | 5 | 20 | 655 | 30 | 15 | 370 |
| Future Volume (vph) | 15 | 0 | 20 | 5 | 15 | 30 | 5 | 20 | 655 | 30 | 15 | 370 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 12 | 16 | 12 | 12 | 16 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.923 | | | 0.918 | | | | 0.994 | | | 0.993 |
| Flt Protected | | 0.979 | | | 0.995 | | | | 0.998 | | | 0.998 |
| Satd. Flow (prot) | 0 | 1255 | 0 | 0 | 1312 | 0 | 0 | 0 | 1852 | 0 | 0 | 1833 |
| Flt Permitted | | 0.979 | | | 0.995 | | | | 0.998 | | | 0.998 |
| Satd. Flow (perm) | 0 | 1255 | 0 | 0 | 1312 | 0 | 0 | 0 | 1852 | 0 | 0 | 1833 |
| Link Speed (mph) | | 30 | | | 30 | | | | 30 | | | 30 |
| Link Distance (ft) | | 638 | | | 716 | | | | 304 | | | 298 |
| Travel Time (s) | | 14.5 | | | 16.3 | | | | 6.9 | | | 6.8 |
| Confl. Peds. (#/hr) | 22 | | 31 | 31 | | 22 | | 75 | | 46 | 46 | |
| Confl. Bikes (#/hr) | | | | | | | | | | 9 | | |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.67 | 0.67 | 0.67 | 0.92 | 0.94 | 0.94 | 0.94 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 0% | 0% | 6% | 0% | 0% | 0% | 0% | 5% | 4% | 0% | 6% | 5% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | | | | | |
| Adj. Flow (vph) | 18 | 0 | 24 | 7 | 22 | 45 | 5 | 21 | 697 | 32 | 16 | 398 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 42 | 0 | 0 | 74 | 0 | 0 | 0 | 755 | 0 | 0 | 436 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | R NA | Left | Left | Right | Left | Left |
| Median Width(ft) | | 0 | | | 0 | | | | 0 | | | 0 |
| Link Offset(ft) | | 0 | | | 0 | | | | 0 | | | 0 |
| Crosswalk Width(ft) | | 16 | | | 16 | | | | 16 | | | 16 |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 0.97 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 9 | 15 | | 9 | 15 | |
| Sign Control | | Stop | | | Stop | | | | Free | | | Free |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 69.6% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |



| Lane Group | SBR |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | 20 |
| Future Volume (vph) | 20 |
| Ideal Flow (vphpl) | 1900 |
| Lane Width (ft) | 12 |
| Lane Util. Factor | 1.00 |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | 0 |
| Flt Permitted | |
| Satd. Flow (perm) | 0 |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | 75 |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | 0.93 |
| Heavy Vehicles (%) | 0% |
| Parking (#/hr) | |
| Adj. Flow (vph) | 22 |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | 0 |
| Enter Blocked Intersection | No |
| Lane Alignment | Right |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | 1.14 |
| Turning Speed (mph) | 9 |
| Sign Control | |

| Intersection Summary |
|---|



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBU | NBL | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 15 | 0 | 20 | 5 | 15 | 30 | 5 | 20 | 655 | 30 | 15 | 370 |
| Future Volume (Veh/h) | 15 | 0 | 20 | 5 | 15 | 30 | 5 | 20 | 655 | 30 | 15 | 370 |
| Sign Control | | Stop | | | Stop | | | | Free | | | Free |
| Grade | | 0% | | | 0% | | | | 0% | | | 0% |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.67 | 0.67 | 0.67 | 0.92 | 0.94 | 0.94 | 0.94 | 0.93 | 0.93 |
| Hourly flow rate (vph) | 18 | 0 | 24 | 7 | 22 | 45 | 0 | 21 | 697 | 32 | 16 | 398 |
| Pedestrians | | 75 | | | 46 | | | | 31 | | | 22 |
| Lane Width (ft) | | 10.0 | | | 10.0 | | | | 16.0 | | | 16.0 |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | | 4.0 | | | 4.0 |
| Percent Blockage | | 5 | | | 3 | | | | 3 | | | 2 |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | | None | | | None |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | 304 | | | 638 |
| pX, platoon unblocked | 0.86 | 0.86 | 0.91 | 0.86 | 0.86 | 0.81 | 0.00 | 0.91 | | | 0.81 | |
| vC, conflicting volume | 1349 | 1333 | 515 | 1297 | 1328 | 781 | 0 | 495 | | | 775 | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1082 | 1063 | 415 | 1021 | 1058 | 613 | 0 | 393 | | | 605 | |
| tC, single (s) | *4.0 | 6.5 | *5.0 | *4.0 | *4.0 | *4.0 | 0.0 | 4.1 | | | 4.2 | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.4 | 3.5 | 4.0 | 3.3 | 0.0 | 2.2 | | | 2.3 | |
| p0 queue free % | 94 | 100 | 96 | 98 | 94 | 92 | 0 | 98 | | | 98 | |
| cM capacity (veh/h) | 314 | 169 | 604 | 364 | 356 | 552 | 0 | 989 | | | 748 | |

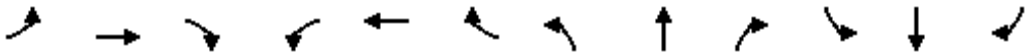
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 42 | 74 | 750 | 436 |
| Volume Left | 18 | 7 | 21 | 16 |
| Volume Right | 24 | 45 | 32 | 22 |
| cSH | 433 | 455 | 989 | 748 |
| Volume to Capacity | 0.10 | 0.16 | 0.02 | 0.02 |
| Queue Length 95th (ft) | 8 | 14 | 2 | 2 |
| Control Delay (s) | 14.2 | 14.4 | 0.6 | 0.6 |
| Lane LOS | B | B | A | A |
| Approach Delay (s) | 14.2 | 14.4 | 0.6 | 0.6 |
| Approach LOS | B | B | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.8 | | |
| Intersection Capacity Utilization | 69.6% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |

* User Entered Value



| Movement | SBR |
|---|---|
| Lane Configurations | |
| Traffic Volume (veh/h) | 20 |
| Future Volume (Veh/h) | 20 |
| Sign Control | |
| Grade | |
| Peak Hour Factor | 0.93 |
| Hourly flow rate (vph) | 22 |
| Pedestrians | |
| Lane Width (ft) | |
| Walking Speed (ft/s) | |
| Percent Blockage | |
| Right turn flare (veh) | |
| Median type | |
| Median storage veh) | |
| Upstream signal (ft) | |
| pX, platoon unblocked | |
| vC, conflicting volume | |
| vC1, stage 1 conf vol | |
| vC2, stage 2 conf vol | |
| vCu, unblocked vol | |
| tC, single (s) | |
| tC, 2 stage (s) | |
| tF (s) | |
| p0 queue free % | |
| cM capacity (veh/h) | |
| Direction, Lane # | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 80 | 95 | 45 | 30 | 145 | 65 | 65 | 570 | 10 | 50 | 250 | 90 |
| Future Volume (vph) | 80 | 95 | 45 | 30 | 145 | 65 | 65 | 570 | 10 | 50 | 250 | 90 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 11 | 12 | 12 | 16 | 12 | 10 | 10 | 10 | 10 | 10 | 10 |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 0 | | 250 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 0 | | 1 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 0.95 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Ped Bike Factor | | 0.92 | | | 0.91 | | | 0.99 | | | 0.97 | |
| Frt | | 0.969 | | | 0.963 | | | 0.998 | | | 0.965 | |
| Flt Protected | | 0.982 | | | 0.994 | | | 0.995 | | | 0.994 | |
| Satd. Flow (prot) | 0 | 2511 | 0 | 0 | 1364 | 0 | 0 | 2823 | 0 | 0 | 2578 | 0 |
| Flt Permitted | | 0.596 | | | 0.931 | | | 0.819 | | | 0.713 | |
| Satd. Flow (perm) | 0 | 1464 | 0 | 0 | 1255 | 0 | 0 | 2315 | 0 | 0 | 1841 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 642 | | | 138 | | | 618 | | | 304 | |
| Travel Time (s) | | 14.6 | | | 3.1 | | | 14.0 | | | 6.9 | |
| Confl. Peds. (#/hr) | 104 | | 84 | 84 | | 104 | 117 | | 118 | 118 | | 117 |
| Confl. Bikes (#/hr) | | | | | | 3 | | | 9 | | | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.97 | 0.97 | 0.97 | 0.95 | 0.95 | 0.95 | 0.85 | 0.85 | 0.85 |
| Heavy Vehicles (%) | 16% | 7% | 0% | 6% | 10% | 25% | 3% | 1% | 0% | 2% | 3% | 10% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Adj. Flow (vph) | 89 | 106 | 50 | 31 | 149 | 67 | 68 | 600 | 11 | 59 | 294 | 106 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 245 | 0 | 0 | 247 | 0 | 0 | 679 | 0 | 0 | 459 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.27 | 1.14 | 1.14 | 1.12 | 1.14 | 1.25 | 1.33 | 1.25 | 1.25 | 1.33 | 1.25 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |

| Lane Group | Ø2 |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | |
| Future Volume (vph) | |
| Ideal Flow (vphpl) | |
| Lane Width (ft) | |
| Storage Length (ft) | |
| Storage Lanes | |
| Taper Length (ft) | |
| Lane Util. Factor | |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Right Turn on Red | |
| Satd. Flow (RTOR) | |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | |
| Heavy Vehicles (%) | |
| Parking (#/hr) | |
| Adj. Flow (vph) | |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | |
| Enter Blocked Intersection | |
| Lane Alignment | |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | |
| Turning Speed (mph) | |
| Number of Detectors | |
| Detector Template | |
| Leading Detector (ft) | |
| Trailing Detector (ft) | |
| Detector 1 Position(ft) | |
| Detector 1 Size(ft) | |
| Detector 1 Type | |
| Detector 1 Channel | |
| Detector 1 Extend (s) | |
| Detector 1 Queue (s) | |
| Detector 1 Delay (s) | |
| Detector 2 Position(ft) | |
| Detector 2 Size(ft) | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | D.P+P | NA | | Perm | NA | | D.P+P | NA | | Perm | NA | |
| Protected Phases | 3 | 3 4 | | | 4 | | 5 | 1 5 | | | 1 | |
| Permitted Phases | 4 | | | 4 | | | 1 | | | 1 | | |
| Detector Phase | 3 | 3 4 | | 4 | 4 | | 5 | 1 5 | | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | | | 10.0 | 10.0 | | 6.0 | | | 30.0 | 30.0 | |
| Minimum Split (s) | 10.0 | | | 14.0 | 14.0 | | 10.0 | | | 34.0 | 34.0 | |
| Total Split (s) | 11.0 | | | 34.0 | 34.0 | | 19.0 | | | 54.0 | 54.0 | |
| Total Split (%) | 7.7% | | | 23.9% | 23.9% | | 13.4% | | | 38.0% | 38.0% | |
| Maximum Green (s) | 6.0 | | | 30.0 | 30.0 | | 15.0 | | | 50.0 | 50.0 | |
| Yellow Time (s) | 3.0 | | | 3.0 | 3.0 | | 3.0 | | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | | | 1.0 | 1.0 | | 1.0 | | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | | | | | 0.0 | | | | | | 0.0 | |
| Total Lost Time (s) | | | | | 4.0 | | | | | | 4.0 | |
| Lead/Lag | Lead | | | Lag | Lag | | | | | Lead | Lead | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | | | 2.0 | 2.0 | | 2.0 | | | 2.0 | 2.0 | |
| Recall Mode | Max | | | Max | Max | | Max | | | Max | Max | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 35.0 | | | 30.0 | | | 65.0 | | | 50.0 | |
| Actuated g/C Ratio | | 0.25 | | | 0.21 | | | 0.46 | | | 0.35 | |
| v/c Ratio | | 0.60 | | | 0.93 | | | 0.61 | | | 0.71 | |
| Control Delay | | 50.8 | | | 95.1 | | | 29.0 | | | 46.9 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 50.8 | | | 95.1 | | | 29.0 | | | 46.9 | |
| LOS | | D | | | F | | | C | | | D | |
| Approach Delay | | 50.8 | | | 95.1 | | | 29.0 | | | 46.9 | |
| Approach LOS | | D | | | F | | | C | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 142 | | | |
| Actuated Cycle Length: 142 | | | |
| Natural Cycle: 95 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 0.93 | | | |
| Intersection Signal Delay: 47.3 | | Intersection LOS: D | |
| Intersection Capacity Utilization 88.8% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |

Description: L Street is very wide and during peak hours vehicles form two lanes.

Splits and Phases: 7: L Street & E Broadway



| Lane Group | Ø2 |
|---|---|
| Detector 2 Type | |
| Detector 2 Channel | |
| Detector 2 Extend (s) | |
| Turn Type | |
| Protected Phases | 2 |
| Permitted Phases | |
| Detector Phase | |
| Switch Phase | |
| Minimum Initial (s) | 4.0 |
| Minimum Split (s) | 24.0 |
| Total Split (s) | 24.0 |
| Total Split (%) | 17% |
| Maximum Green (s) | 20.0 |
| Yellow Time (s) | 3.0 |
| All-Red Time (s) | 1.0 |
| Lost Time Adjust (s) | |
| Total Lost Time (s) | |
| Lead/Lag | Lag |
| Lead-Lag Optimize? | |
| Vehicle Extension (s) | 2.0 |
| Recall Mode | None |
| Walk Time (s) | 8.0 |
| Flash Dont Walk (s) | 12.0 |
| Pedestrian Calls (#/hr) | 121 |
| Act Effct Green (s) | |
| Actuated g/C Ratio | |
| v/c Ratio | |
| Control Delay | |
| Queue Delay | |
| Total Delay | |
| LOS | |
| Approach Delay | |
| Approach LOS | |

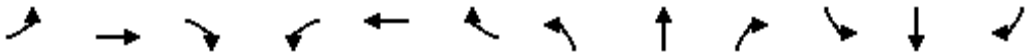
| Intersection Summary |
|---|

| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 245 | 247 | 679 | 459 |
| v/c Ratio | 0.60 | 0.93 | 0.61 | 0.71 |
| Control Delay | 50.8 | 95.1 | 29.0 | 46.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 50.8 | 95.1 | 29.0 | 46.9 |
| Queue Length 50th (ft) | 95 | 227 | 218 | 192 |
| Queue Length 95th (ft) | 136 | #396 | 276 | 240 |
| Internal Link Dist (ft) | 562 | 58 | 538 | 224 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 405 | 265 | 1113 | 648 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.60 | 0.93 | 0.61 | 0.71 |

Intersection Summary

Description: L Street is very wide and during peak hours vehicles form two lanes.

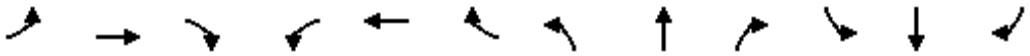
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 80 | 95 | 45 | 30 | 145 | 65 | 65 | 570 | 10 | 50 | 250 | 90 |
| Future Volume (vph) | 80 | 95 | 45 | 30 | 145 | 65 | 65 | 570 | 10 | 50 | 250 | 90 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 11 | 12 | 12 | 16 | 12 | 10 | 10 | 10 | 10 | 10 | 10 |
| Total Lost time (s) | | 5.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 0.95 | | | 1.00 | | | 0.95 | | | 0.95 | |
| Frpb, ped/bikes | | 0.96 | | | 0.93 | | | 1.00 | | | 0.97 | |
| Flpb, ped/bikes | | 0.98 | | | 0.98 | | | 1.00 | | | 1.00 | |
| Frt | | 0.97 | | | 0.96 | | | 1.00 | | | 0.97 | |
| Flt Protected | | 0.98 | | | 0.99 | | | 1.00 | | | 0.99 | |
| Satd. Flow (prot) | | 2455 | | | 1340 | | | 2813 | | | 2567 | |
| Flt Permitted | | 0.60 | | | 0.93 | | | 0.82 | | | 0.71 | |
| Satd. Flow (perm) | | 1490 | | | 1255 | | | 2315 | | | 1841 | |
| Peak-hour factor, PHF | 0.90 | 0.90 | 0.90 | 0.97 | 0.97 | 0.97 | 0.95 | 0.95 | 0.95 | 0.85 | 0.85 | 0.85 |
| Adj. Flow (vph) | 89 | 106 | 50 | 31 | 149 | 67 | 68 | 600 | 11 | 59 | 294 | 106 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 245 | 0 | 0 | 247 | 0 | 0 | 679 | 0 | 0 | 459 | 0 |
| Confl. Peds. (#/hr) | 104 | | 84 | 84 | | 104 | 117 | | 118 | 118 | | 117 |
| Confl. Bikes (#/hr) | | | | | | 3 | | | 9 | | | |
| Heavy Vehicles (%) | 16% | 7% | 0% | 6% | 10% | 25% | 3% | 1% | 0% | 2% | 3% | 10% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Turn Type | D.P+P | NA | | Perm | NA | | D.P+P | NA | | Perm | NA | |
| Protected Phases | 3 | 3 4 | | | 4 | | 5 | 1 5 | | | 1 | |
| Permitted Phases | 4 | | | 4 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 36.0 | | | 30.0 | | | 65.0 | | | 50.0 | |
| Effective Green, g (s) | | 36.0 | | | 30.0 | | | 65.0 | | | 50.0 | |
| Actuated g/C Ratio | | 0.25 | | | 0.21 | | | 0.46 | | | 0.35 | |
| Clearance Time (s) | | | | | 4.0 | | | | | | 4.0 | |
| Vehicle Extension (s) | | | | | 2.0 | | | | | | 2.0 | |
| Lane Grp Cap (vph) | | 418 | | | 265 | | | 1112 | | | 648 | |
| v/s Ratio Prot | | c0.02 | | | | | | c0.06 | | | | |
| v/s Ratio Perm | | 0.12 | | | c0.20 | | | 0.21 | | | c0.25 | |
| v/c Ratio | | 0.59 | | | 0.93 | | | 0.61 | | | 0.71 | |
| Uniform Delay, d1 | | 46.5 | | | 55.0 | | | 29.0 | | | 39.7 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 5.9 | | | 40.2 | | | 2.5 | | | 6.4 | |
| Delay (s) | | 52.4 | | | 95.2 | | | 31.5 | | | 46.1 | |
| Level of Service | | D | | | F | | | C | | | D | |
| Approach Delay (s) | | 52.4 | | | 95.2 | | | 31.5 | | | 46.1 | |
| Approach LOS | | D | | | F | | | C | | | D | |

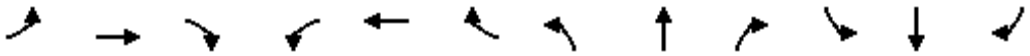
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 48.4 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.63 | | |
| Actuated Cycle Length (s) | 142.0 | Sum of lost time (s) | 21.0 |
| Intersection Capacity Utilization | 88.8% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |
| Description: L Street is very wide and during peak hours vehicles form two lanes. | | | |

c Critical Lane Group



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 25 | 100 | 0 | 0 | 200 | 5 | 120 | 10 | 25 | 5 | 0 | 55 |
| Future Volume (vph) | 25 | 100 | 0 | 0 | 200 | 5 | 120 | 10 | 25 | 5 | 0 | 55 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 13 | 12 | 10 | 10 | 12 | 12 | 16 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | | | 0.997 | | | 0.893 | | | 0.876 | |
| Flt Protected | | 0.990 | | | | | 0.950 | | | | 0.996 | |
| Satd. Flow (prot) | 0 | 1378 | 0 | 0 | 1546 | 0 | 1325 | 1244 | 0 | 0 | 1215 | 0 |
| Flt Permitted | | 0.990 | | | | | 0.950 | | | | 0.996 | |
| Satd. Flow (perm) | 0 | 1378 | 0 | 0 | 1546 | 0 | 1325 | 1244 | 0 | 0 | 1215 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 1822 | | | 540 | | | 382 | | | 350 | |
| Travel Time (s) | | 41.4 | | | 12.3 | | | 8.7 | | | 8.0 | |
| Confl. Peds. (#/hr) | 8 | | 18 | 18 | | 8 | 13 | | 28 | 28 | | 13 |
| Confl. Bikes (#/hr) | | | 1 | | | 3 | | | 1 | | | |
| Peak Hour Factor | 0.70 | 0.70 | 0.70 | 0.68 | 0.68 | 0.68 | 0.71 | 0.71 | 0.71 | 0.50 | 0.50 | 0.50 |
| Heavy Vehicles (%) | 9% | 11% | 2% | 0% | 2% | 25% | 3% | 11% | 0% | 17% | 0% | 26% |
| Parking (#/hr) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Adj. Flow (vph) | 36 | 143 | 0 | 0 | 294 | 7 | 169 | 14 | 35 | 10 | 0 | 110 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 179 | 0 | 0 | 301 | 0 | 169 | 49 | 0 | 0 | 120 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 10 | | | 10 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.30 | 1.14 | 1.14 | 1.25 | 1.14 | 1.42 | 1.42 | 1.14 | 1.14 | 1.12 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 46.5% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 25 | 100 | 0 | 0 | 200 | 5 | 120 | 10 | 25 | 5 | 0 | 55 |
| Future Volume (Veh/h) | 25 | 100 | 0 | 0 | 200 | 5 | 120 | 10 | 25 | 5 | 0 | 55 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.70 | 0.70 | 0.70 | 0.68 | 0.68 | 0.68 | 0.71 | 0.71 | 0.71 | 0.50 | 0.50 | 0.50 |
| Hourly flow rate (vph) | 36 | 143 | 0 | 0 | 294 | 7 | 169 | 14 | 35 | 10 | 0 | 110 |
| Pedestrians | | 13 | | | 28 | | | 18 | | | 8 | |
| Lane Width (ft) | | 12.0 | | | 13.0 | | | 10.0 | | | 16.0 | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Percent Blockage | | 1 | | | 3 | | | 1 | | | 1 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 540 | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 309 | | | 161 | | | 654 | 542 | 189 | 590 | 538 | 318 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 309 | | | 161 | | | 654 | 542 | 189 | 590 | 538 | 318 |
| tC, single (s) | 4.2 | | | 4.1 | | | *6.5 | 6.6 | 6.2 | 7.3 | 6.5 | 6.5 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.3 | | | 2.2 | | | 3.5 | 4.1 | 3.3 | 3.7 | 4.0 | 3.5 |
| p0 queue free % | 97 | | | 100 | | | 49 | 97 | 96 | 97 | 100 | 83 |
| cM capacity (veh/h) | 1202 | | | 1412 | | | 332 | 413 | 826 | 344 | 429 | 657 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | SB 1 |
|---|---|---|---|---|---|
| Volume Total | 179 | 301 | 169 | 49 | 120 |
| Volume Left | 36 | 0 | 169 | 0 | 10 |
| Volume Right | 0 | 7 | 0 | 35 | 110 |
| cSH | 1202 | 1700 | 332 | 642 | 611 |
| Volume to Capacity | 0.03 | 0.18 | 0.51 | 0.08 | 0.20 |
| Queue Length 95th (ft) | 2 | 0 | 69 | 6 | 18 |
| Control Delay (s) | 1.8 | 0.0 | 26.6 | 11.1 | 12.3 |
| Lane LOS | A | | D | B | B |
| Approach Delay (s) | 1.8 | 0.0 | 23.1 | | 12.3 |
| Approach LOS | | | C | | B |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 8.4 | | | |
| Intersection Capacity Utilization | 46.5% | ICU Level of Service | | A |
| Analysis Period (min) | 15 | | | |

* User Entered Value



| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 180 | 0 | 0 | 310 | 90 | 10 |
| Future Volume (vph) | 180 | 0 | 0 | 310 | 90 | 10 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 13 | 12 | 12 | 13 | 10 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | | | | | 0.987 | |
| Flt Protected | | | | | 0.957 | |
| Satd. Flow (prot) | 1537 | 0 | 0 | 1750 | 1481 | 0 |
| Flt Permitted | | | | | 0.957 | |
| Satd. Flow (perm) | 1537 | 0 | 0 | 1750 | 1481 | 0 |
| Link Speed (mph) | 30 | | | 30 | 30 | |
| Link Distance (ft) | 576 | | | 561 | 457 | |
| Travel Time (s) | 13.1 | | | 12.8 | 10.4 | |
| Confl. Peds. (#/hr) | | 13 | 13 | | 4 | |
| Confl. Bikes (#/hr) | | 1 | | | | 3 |
| Peak Hour Factor | 0.84 | 0.84 | 0.77 | 0.77 | 0.70 | 0.70 |
| Heavy Vehicles (%) | 15% | 0% | 0% | 1% | 2% | 0% |
| Adj. Flow (vph) | 214 | 0 | 0 | 403 | 129 | 14 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 214 | 0 | 0 | 403 | 143 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(ft) | 0 | | | 0 | 10 | |
| Link Offset(ft) | 0 | | | 0 | 0 | |
| Crosswalk Width(ft) | 16 | | | 16 | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.10 | 1.14 | 1.14 | 1.10 | 1.25 | 1.14 |
| Turning Speed (mph) | | 9 | 15 | | 15 | 9 |
| Sign Control | Free | | | Free | Stop | |

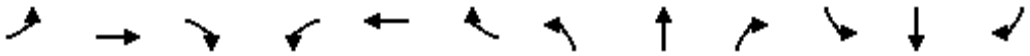
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 31.0% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 180 | 0 | 0 | 310 | 90 | 10 |
| Future Volume (Veh/h) | 180 | 0 | 0 | 310 | 90 | 10 |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.84 | 0.84 | 0.77 | 0.77 | 0.70 | 0.70 |
| Hourly flow rate (vph) | 214 | 0 | 0 | 403 | 129 | 14 |
| Pedestrians | 4 | | | | 13 | |
| Lane Width (ft) | 13.0 | | | | 10.0 | |
| Walking Speed (ft/s) | 4.0 | | | | 4.0 | |
| Percent Blockage | 0 | | | | 1 | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | None | | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | 576 | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | | | 227 | | 634 | 227 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 227 | | 634 | 227 |
| tC, single (s) | | | 4.1 | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.2 | | 3.5 | 3.3 |
| p0 queue free % | | | 100 | | 71 | 98 |
| cM capacity (veh/h) | | | 1341 | | 438 | 810 |

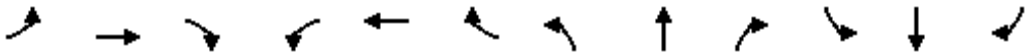
| Direction, Lane # | EB 1 | WB 1 | NB 1 |
|---|---|---|---|
| Volume Total | 214 | 403 | 143 |
| Volume Left | 0 | 0 | 129 |
| Volume Right | 0 | 0 | 14 |
| cSH | 1700 | 1700 | 458 |
| Volume to Capacity | 0.13 | 0.24 | 0.31 |
| Queue Length 95th (ft) | 0 | 0 | 33 |
| Control Delay (s) | 0.0 | 0.0 | 16.4 |
| Lane LOS | | | C |
| Approach Delay (s) | 0.0 | 0.0 | 16.4 |
| Approach LOS | | | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 3.1 | | |
| Intersection Capacity Utilization | 31.0% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 25 | 190 | 0 | 0 | 370 | 210 | 75 | 55 | 5 | 120 | 0 | 65 |
| Future Volume (vph) | 25 | 190 | 0 | 0 | 370 | 210 | 75 | 55 | 5 | 120 | 0 | 65 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 15 | 12 | 12 | 16 | 12 | 12 | 16 | 12 | 12 | 14 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | | | 0.951 | | | 0.995 | | | 0.952 | |
| Flt Protected | | 0.994 | | | | | | 0.973 | | | 0.969 | |
| Satd. Flow (prot) | 0 | 1386 | 0 | 0 | 1752 | 0 | 0 | 1828 | 0 | 0 | 1443 | 0 |
| Flt Permitted | | 0.994 | | | | | | 0.973 | | | 0.969 | |
| Satd. Flow (perm) | 0 | 1386 | 0 | 0 | 1752 | 0 | 0 | 1828 | 0 | 0 | 1443 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 848 | | | 1822 | | | 402 | | | 2052 | |
| Travel Time (s) | | 19.3 | | | 41.4 | | | 9.1 | | | 46.6 | |
| Confl. Peds. (#/hr) | 4 | | | 5 | | 4 | 1 | | 24 | 24 | | 1 |
| Confl. Bikes (#/hr) | | | 2 | | | 6 | | | 9 | | | |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.70 | 0.70 | 0.70 | 0.74 | 0.74 | 0.74 | 0.88 | 0.88 | 0.88 |
| Heavy Vehicles (%) | 9% | 23% | 0% | 0% | 7% | 2% | 1% | 2% | 33% | 11% | 0% | 27% |
| Parking (#/hr) | | 0 | 0 | | | | | | | | | |
| Adj. Flow (vph) | 28 | 216 | 0 | 0 | 529 | 300 | 101 | 74 | 7 | 136 | 0 | 74 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 244 | 0 | 0 | 829 | 0 | 0 | 182 | 0 | 0 | 210 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.16 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 1.05 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |

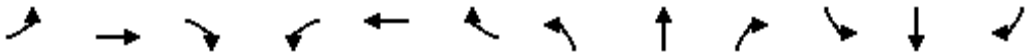
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 58.1% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 25 | 190 | 0 | 0 | 370 | 210 | 75 | 55 | 5 | 120 | 0 | 65 |
| Future Volume (Veh/h) | 25 | 190 | 0 | 0 | 370 | 210 | 75 | 55 | 5 | 120 | 0 | 65 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.70 | 0.70 | 0.70 | 0.74 | 0.74 | 0.74 | 0.88 | 0.88 | 0.88 |
| Hourly flow rate (vph) | 28 | 216 | 0 | 0 | 529 | 300 | 101 | 74 | 7 | 136 | 0 | 74 |
| Pedestrians | | 1 | | | 24 | | | 5 | | | 4 | |
| Lane Width (ft) | | 15.0 | | | 16.0 | | | 16.0 | | | 14.0 | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Percent Blockage | | 0 | | | 3 | | | 1 | | | 0 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 833 | | | 221 | | | 1031 | 1110 | 245 | 1023 | 960 | 684 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 833 | | | 221 | | | 1031 | 1110 | 245 | 1023 | 960 | 684 |
| tC, single (s) | 4.2 | | | 4.1 | | | 7.1 | 6.5 | 6.5 | 7.2 | 6.5 | 6.5 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.3 | | | 2.2 | | | 3.5 | 4.0 | 3.6 | 3.6 | 4.0 | 3.5 |
| p0 queue free % | 96 | | | 100 | | | 39 | 63 | 99 | 0 | 100 | 82 |
| cM capacity (veh/h) | 767 | | | 1353 | | | 166 | 200 | 700 | 136 | 247 | 406 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 244 | 829 | 182 | 210 |
| Volume Left | 28 | 0 | 101 | 136 |
| Volume Right | 0 | 300 | 7 | 74 |
| cSH | 767 | 1353 | 184 | 178 |
| Volume to Capacity | 0.04 | 0.00 | 0.99 | 1.18 |
| Queue Length 95th (ft) | 3 | 0 | 203 | 278 |
| Control Delay (s) | 1.5 | 0.0 | 114.8 | 177.5 |
| Lane LOS | A | | F | F |
| Approach Delay (s) | 1.5 | 0.0 | 114.8 | 177.5 |
| Approach LOS | | | F | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 40.0 | | |
| Intersection Capacity Utilization | 58.1% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 30 | 20 | 5 | 5 | 30 | 10 | 20 | 535 | 10 | 20 | 240 | 35 |
| Future Volume (vph) | 30 | 20 | 5 | 5 | 30 | 10 | 20 | 535 | 10 | 20 | 240 | 35 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | 0.95 | | | 0.97 | | | 1.00 | | | 0.98 | |
| Frt | | 0.987 | | | 0.971 | | | 0.998 | | | 0.984 | |
| Flt Protected | | 0.973 | | | 0.994 | | | 0.998 | | | 0.997 | |
| Satd. Flow (prot) | 0 | 1108 | 0 | 0 | 1351 | 0 | 0 | 1409 | 0 | 0 | 1340 | 0 |
| Flt Permitted | | 0.826 | | | 0.972 | | | 0.982 | | | 0.949 | |
| Satd. Flow (perm) | 0 | 895 | 0 | 0 | 1316 | 0 | 0 | 1384 | 0 | 0 | 1273 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 4 | | | 11 | | | 1 | | | 9 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 659 | | | 649 | | | 380 | | | 618 | |
| Travel Time (s) | | 15.0 | | | 14.8 | | | 8.6 | | | 14.0 | |
| Confl. Peds. (#/hr) | 28 | | 11 | 11 | | 28 | 108 | | 63 | 63 | | 108 |
| Confl. Bikes (#/hr) | | | | | | | | | 5 | | | |
| Peak Hour Factor | 0.74 | 0.74 | 0.74 | 0.87 | 0.87 | 0.87 | 0.97 | 0.97 | 0.97 | 0.87 | 0.87 | 0.87 |
| Heavy Vehicles (%) | 31% | 18% | 4% | 0% | 0% | 0% | 6% | 1% | 11% | 0% | 4% | 3% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Adj. Flow (vph) | 41 | 27 | 7 | 6 | 34 | 11 | 21 | 552 | 10 | 23 | 276 | 40 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 75 | 0 | 0 | 51 | 0 | 0 | 583 | 0 | 0 | 339 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |

| Lane Group | Ø2 |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | |
| Future Volume (vph) | |
| Ideal Flow (vphpl) | |
| Lane Width (ft) | |
| Lane Util. Factor | |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Right Turn on Red | |
| Satd. Flow (RTOR) | |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | |
| Heavy Vehicles (%) | |
| Parking (#/hr) | |
| Adj. Flow (vph) | |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | |
| Enter Blocked Intersection | |
| Lane Alignment | |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | |
| Turning Speed (mph) | |
| Number of Detectors | |
| Detector Template | |
| Leading Detector (ft) | |
| Trailing Detector (ft) | |
| Detector 1 Position(ft) | |
| Detector 1 Size(ft) | |
| Detector 1 Type | |
| Detector 1 Channel | |
| Detector 1 Extend (s) | |
| Detector 1 Queue (s) | |
| Detector 1 Delay (s) | |
| Detector 2 Position(ft) | |
| Detector 2 Size(ft) | |
| Detector 2 Type | |
| Detector 2 Channel | |
| Detector 2 Extend (s) | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Detector Phase | 5 | 5 | | 5 | 5 | | 1 | 1 | | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | |
| Minimum Split (s) | 12.0 | 12.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Total Split (s) | 18.0 | 18.0 | | 18.0 | 18.0 | | 54.0 | 54.0 | | 54.0 | 54.0 | |
| Total Split (%) | 17.6% | 17.6% | | 17.6% | 17.6% | | 52.9% | 52.9% | | 52.9% | 52.9% | |
| Maximum Green (s) | 14.0 | 14.0 | | 14.0 | 14.0 | | 50.0 | 50.0 | | 50.0 | 50.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Lost Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lead/Lag | | | | | | | Lead | Lead | | Lead | Lead | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | Max | Max | | Max | Max | | Max | Max | | Max | Max | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 14.3 | | | 14.3 | | | 51.0 | | | 51.0 | |
| Actuated g/C Ratio | | 0.15 | | | 0.15 | | | 0.53 | | | 0.53 | |
| v/c Ratio | | 0.55 | | | 0.25 | | | 0.79 | | | 0.50 | |
| Control Delay | | 56.4 | | | 36.1 | | | 31.2 | | | 19.7 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 56.4 | | | 36.1 | | | 31.2 | | | 19.7 | |
| LOS | | E | | | D | | | C | | | B | |
| Approach Delay | | 56.4 | | | 36.1 | | | 31.2 | | | 19.7 | |
| Approach LOS | | E | | | D | | | C | | | B | |

**Intersection Summary**

Area Type: CBD
Cycle Length: 102
Actuated Cycle Length: 96
Natural Cycle: 90
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 29.5 Intersection LOS: C
Intersection Capacity Utilization 54.9% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 11: L Street & E 5th Street



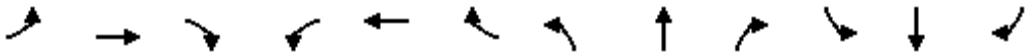
| Lane Group | Ø2 |
|---|---|
| Turn Type | |
| Protected Phases | 2 |
| Permitted Phases | |
| Detector Phase | |
| Switch Phase | |
| Minimum Initial (s) | 4.0 |
| Minimum Split (s) | 30.0 |
| Total Split (s) | 30.0 |
| Total Split (%) | 29% |
| Maximum Green (s) | 26.0 |
| Yellow Time (s) | 3.0 |
| All-Red Time (s) | 1.0 |
| Lost Time Adjust (s) | |
| Total Lost Time (s) | |
| Lead/Lag | Lag |
| Lead-Lag Optimize? | |
| Vehicle Extension (s) | 2.0 |
| Recall Mode | None |
| Walk Time (s) | 14.0 |
| Flash Dont Walk (s) | 12.0 |
| Pedestrian Calls (#/hr) | 53 |
| Act Effct Green (s) | |
| Actuated g/C Ratio | |
| v/c Ratio | |
| Control Delay | |
| Queue Delay | |
| Total Delay | |
| LOS | |
| Approach Delay | |
| Approach LOS | |

| Intersection Summary |
|---|

| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 75 | 51 | 583 | 339 |
| v/c Ratio | 0.55 | 0.25 | 0.79 | 0.50 |
| Control Delay | 56.4 | 36.1 | 31.2 | 19.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 56.4 | 36.1 | 31.2 | 19.7 |
| Queue Length 50th (ft) | 44 | 24 | 321 | 143 |
| Queue Length 95th (ft) | 75 | 58 | #543 | 219 |
| Internal Link Dist (ft) | 579 | 569 | 300 | 538 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 136 | 205 | 735 | 680 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.55 | 0.25 | 0.79 | 0.50 |

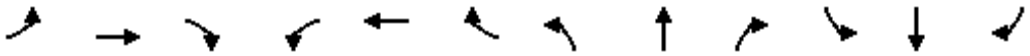
Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 30 | 20 | 5 | 5 | 30 | 10 | 20 | 535 | 10 | 20 | 240 | 35 |
| Future Volume (vph) | 30 | 20 | 5 | 5 | 30 | 10 | 20 | 535 | 10 | 20 | 240 | 35 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Total Lost time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Frpb, ped/bikes | | 0.99 | | | 0.98 | | | 1.00 | | | 0.99 | |
| Flpb, ped/bikes | | 0.95 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Frt | | 0.99 | | | 0.97 | | | 1.00 | | | 0.98 | |
| Flt Protected | | 0.97 | | | 0.99 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | | 1058 | | | 1348 | | | 1406 | | | 1338 | |
| Flt Permitted | | 0.83 | | | 0.97 | | | 0.98 | | | 0.95 | |
| Satd. Flow (perm) | | 898 | | | 1317 | | | 1384 | | | 1275 | |
| Peak-hour factor, PHF | 0.74 | 0.74 | 0.74 | 0.87 | 0.87 | 0.87 | 0.97 | 0.97 | 0.97 | 0.87 | 0.87 | 0.87 |
| Adj. Flow (vph) | 41 | 27 | 7 | 6 | 34 | 11 | 21 | 552 | 10 | 23 | 276 | 40 |
| RTOR Reduction (vph) | 0 | 3 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 4 | 0 |
| Lane Group Flow (vph) | 0 | 72 | 0 | 0 | 42 | 0 | 0 | 583 | 0 | 0 | 335 | 0 |
| Confl. Peds. (#/hr) | 28 | | 11 | 11 | | 28 | 108 | | 63 | 63 | | 108 |
| Confl. Bikes (#/hr) | | | | | | | | | 5 | | | |
| Heavy Vehicles (%) | 31% | 18% | 4% | 0% | 0% | 0% | 6% | 1% | 11% | 0% | 4% | 3% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 14.3 | | | 14.3 | | | 51.0 | | | 51.0 | |
| Effective Green, g (s) | | 14.3 | | | 14.3 | | | 51.0 | | | 51.0 | |
| Actuated g/C Ratio | | 0.15 | | | 0.15 | | | 0.53 | | | 0.53 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | | | 2.0 | | | 2.0 | |
| Lane Grp Cap (vph) | | 132 | | | 194 | | | 728 | | | 671 | |
| v/s Ratio Prot | | | | | | | | | | | | |
| v/s Ratio Perm | | c0.08 | | | 0.03 | | | c0.42 | | | 0.26 | |
| v/c Ratio | | 0.54 | | | 0.21 | | | 0.80 | | | 0.50 | |
| Uniform Delay, d1 | | 38.3 | | | 36.4 | | | 18.8 | | | 14.7 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 15.1 | | | 2.5 | | | 9.0 | | | 2.6 | |
| Delay (s) | | 53.3 | | | 38.9 | | | 27.8 | | | 17.4 | |
| Level of Service | | D | | | D | | | C | | | B | |
| Approach Delay (s) | | 53.3 | | | 38.9 | | | 27.8 | | | 17.4 | |
| Approach LOS | | D | | | D | | | C | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 26.8 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.57 | | |
| Actuated Cycle Length (s) | 96.9 | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 54.9% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 25 | 15 | 5 | 5 | 25 | 10 | 15 | 480 | 5 | 10 | 180 | 15 |
| Future Volume (vph) | 25 | 15 | 5 | 5 | 25 | 10 | 15 | 480 | 5 | 10 | 180 | 15 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 16 | 12 | 12 | 15 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | 0.98 | | | 0.99 | | | 1.00 | | | 0.99 | |
| Frt | | 0.986 | | | 0.966 | | | 0.999 | | | 0.990 | |
| Flt Protected | | 0.973 | | | 0.994 | | | 0.998 | | | 0.998 | |
| Satd. Flow (prot) | 0 | 1491 | 0 | 0 | 1330 | 0 | 0 | 1575 | 0 | 0 | 1498 | 0 |
| Flt Permitted | | 0.853 | | | 0.977 | | | 0.990 | | | 0.977 | |
| Satd. Flow (perm) | 0 | 1290 | 0 | 0 | 1306 | 0 | 0 | 1560 | 0 | 0 | 1465 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 6 | | | 17 | | | 1 | | | 10 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 602 | | | 677 | | | 676 | | | 535 | |
| Travel Time (s) | | 13.7 | | | 15.4 | | | 15.4 | | | 12.2 | |
| Confl. Peds. (#/hr) | 11 | | 3 | 3 | | 11 | 32 | | 19 | 19 | | 32 |
| Confl. Bikes (#/hr) | | | | | | 2 | | | 1 | | | |
| Peak Hour Factor | 0.78 | 0.78 | 0.78 | 0.60 | 0.60 | 0.60 | 0.94 | 0.94 | 0.94 | 0.89 | 0.89 | 0.89 |
| Heavy Vehicles (%) | 4% | 29% | 0% | 0% | 33% | 0% | 0% | 1% | 0% | 9% | 4% | 8% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | | | | | |
| Adj. Flow (vph) | 32 | 19 | 6 | 8 | 42 | 17 | 16 | 511 | 5 | 11 | 202 | 17 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 57 | 0 | 0 | 67 | 0 | 0 | 532 | 0 | 0 | 230 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.12 | 1.14 | 1.14 | 1.16 | 1.14 | 1.14 | 1.25 | 1.14 | 1.14 | 1.25 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Detector Phase | 5 | 5 | | 5 | 5 | | 1 | 1 | | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 6.0 | 6.0 | | 6.0 | 6.0 | | 20.0 | 20.0 | | 20.0 | 20.0 | |
| Minimum Split (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 24.0 | 24.0 | | 24.0 | 24.0 | |
| Total Split (s) | 24.0 | 24.0 | | 24.0 | 24.0 | | 54.0 | 54.0 | | 54.0 | 54.0 | |
| Total Split (%) | 30.8% | 30.8% | | 30.8% | 30.8% | | 69.2% | 69.2% | | 69.2% | 69.2% | |
| Maximum Green (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 50.0 | 50.0 | | 50.0 | 50.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Lost Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | Max | Max | | Max | Max | | Max | Max | | Max | Max | |
| Walk Time (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | |
| Flash Dont Walk (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | |
| Pedestrian Calls (#/hr) | 4 | 4 | | 4 | 4 | | 13 | 13 | | 13 | 13 | |
| Act Effct Green (s) | | 20.0 | | | 20.0 | | | 50.0 | | | 50.0 | |
| Actuated g/C Ratio | | 0.26 | | | 0.26 | | | 0.64 | | | 0.64 | |
| v/c Ratio | | 0.17 | | | 0.19 | | | 0.53 | | | 0.24 | |
| Control Delay | | 22.3 | | | 19.8 | | | 10.0 | | | 6.5 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 22.3 | | | 19.8 | | | 10.0 | | | 6.5 | |
| LOS | | C | | | B | | | B | | | A | |
| Approach Delay | | 22.3 | | | 19.8 | | | 10.0 | | | 6.5 | |
| Approach LOS | | C | | | B | | | B | | | A | |

**Intersection Summary**

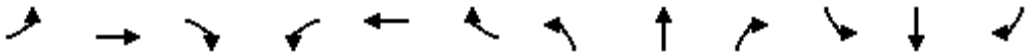
Area Type: CBD
Cycle Length: 78
Actuated Cycle Length: 78
Natural Cycle: 45
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.53
Intersection Signal Delay: 10.6 Intersection LOS: B
Intersection Capacity Utilization 54.0% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 12: L Street & E 8th Street



| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 57 | 67 | 532 | 230 |
| v/c Ratio | 0.17 | 0.19 | 0.53 | 0.24 |
| Control Delay | 22.3 | 19.8 | 10.0 | 6.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 22.3 | 19.8 | 10.0 | 6.5 |
| Queue Length 50th (ft) | 19 | 19 | 123 | 39 |
| Queue Length 95th (ft) | 41 | 30 | 200 | 69 |
| Internal Link Dist (ft) | 522 | 597 | 596 | 455 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 335 | 347 | 1000 | 942 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.17 | 0.19 | 0.53 | 0.24 |

Intersection Summary

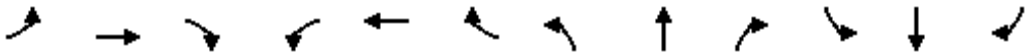


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 25 | 15 | 5 | 5 | 25 | 10 | 15 | 480 | 5 | 10 | 180 | 15 |
| Future Volume (vph) | 25 | 15 | 5 | 5 | 25 | 10 | 15 | 480 | 5 | 10 | 180 | 15 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 16 | 12 | 12 | 15 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Total Lost time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Frpb, ped/bikes | | 1.00 | | | 0.99 | | | 1.00 | | | 0.99 | |
| Flpb, ped/bikes | | 0.99 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Frt | | 0.99 | | | 0.97 | | | 1.00 | | | 0.99 | |
| Flt Protected | | 0.97 | | | 0.99 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | | 1470 | | | 1329 | | | 1573 | | | 1496 | |
| Flt Permitted | | 0.85 | | | 0.98 | | | 0.99 | | | 0.98 | |
| Satd. Flow (perm) | | 1290 | | | 1305 | | | 1560 | | | 1465 | |
| Peak-hour factor, PHF | 0.78 | 0.78 | 0.78 | 0.60 | 0.60 | 0.60 | 0.94 | 0.94 | 0.94 | 0.89 | 0.89 | 0.89 |
| Adj. Flow (vph) | 32 | 19 | 6 | 8 | 42 | 17 | 16 | 511 | 5 | 11 | 202 | 17 |
| RTOR Reduction (vph) | 0 | 4 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 4 | 0 |
| Lane Group Flow (vph) | 0 | 53 | 0 | 0 | 54 | 0 | 0 | 532 | 0 | 0 | 226 | 0 |
| Confl. Peds. (#/hr) | 11 | | 3 | 3 | | 11 | 32 | | 19 | 19 | | 32 |
| Confl. Bikes (#/hr) | | | | | | 2 | | | 1 | | | |
| Heavy Vehicles (%) | 4% | 29% | 0% | 0% | 33% | 0% | 0% | 1% | 0% | 9% | 4% | 8% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 20.0 | | | 20.0 | | | 50.0 | | | 50.0 | |
| Effective Green, g (s) | | 20.0 | | | 20.0 | | | 50.0 | | | 50.0 | |
| Actuated g/C Ratio | | 0.26 | | | 0.26 | | | 0.64 | | | 0.64 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | | | 2.0 | | | 2.0 | |
| Lane Grp Cap (vph) | | 330 | | | 334 | | | 1000 | | | 939 | |
| v/s Ratio Prot | | | | | | | | | | | | |
| v/s Ratio Perm | | 0.04 | | | c0.04 | | | c0.34 | | | 0.15 | |
| v/c Ratio | | 0.16 | | | 0.16 | | | 0.53 | | | 0.24 | |
| Uniform Delay, d1 | | 22.5 | | | 22.5 | | | 7.6 | | | 5.9 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 1.0 | | | 1.0 | | | 2.0 | | | 0.6 | |
| Delay (s) | | 23.5 | | | 23.5 | | | 9.6 | | | 6.6 | |
| Level of Service | | C | | | C | | | A | | | A | |
| Approach Delay (s) | | 23.5 | | | 23.5 | | | 9.6 | | | 6.6 | |
| Approach LOS | | C | | | C | | | A | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 10.8 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.43 | | |
| Actuated Cycle Length (s) | 78.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 54.0% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 5 | 5 | 5 | 15 | 5 | 25 | 435 | 5 | 5 | 130 | 15 |
| Future Volume (vph) | 0 | 5 | 5 | 5 | 15 | 5 | 25 | 435 | 5 | 5 | 130 | 15 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | 0.932 | | | 0.974 | | | 0.999 | | | 0.987 | |
| Flt Protected | | | | | 0.990 | | | 0.997 | | | 0.998 | |
| Satd. Flow (prot) | 0 | 1771 | 0 | 0 | 1832 | 0 | 0 | 1892 | 0 | 0 | 1872 | 0 |
| Flt Permitted | | | | | 0.990 | | | 0.997 | | | 0.998 | |
| Satd. Flow (perm) | 0 | 1771 | 0 | 0 | 1832 | 0 | 0 | 1892 | 0 | 0 | 1872 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 487 | | | 392 | | | 93 | | | 676 | |
| Travel Time (s) | | 11.1 | | | 8.9 | | | 2.1 | | | 15.4 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 0 | 5 | 5 | 5 | 16 | 5 | 27 | 473 | 5 | 5 | 141 | 16 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 10 | 0 | 0 | 26 | 0 | 0 | 505 | 0 | 0 | 162 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |

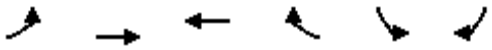
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 45.9% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |



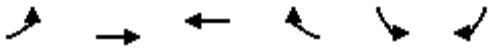
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 5 | 5 | 5 | 15 | 5 | 25 | 435 | 5 | 5 | 130 | 15 |
| Future Volume (Veh/h) | 0 | 5 | 5 | 5 | 15 | 5 | 25 | 435 | 5 | 5 | 130 | 15 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 0 | 5 | 5 | 5 | 16 | 5 | 27 | 473 | 5 | 5 | 141 | 16 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | 676 | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 702 | 691 | 149 | 696 | 696 | 476 | 157 | | | 478 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 702 | 691 | 149 | 696 | 696 | 476 | 157 | | | 478 | | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 100 | 99 | 99 | 99 | 96 | 99 | 98 | | | 100 | | |
| cM capacity (veh/h) | 335 | 362 | 903 | 347 | 359 | 593 | 1435 | | | 1095 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 10 | 26 | 505 | 162 |
| Volume Left | 0 | 5 | 27 | 5 |
| Volume Right | 5 | 5 | 5 | 16 |
| cSH | 516 | 386 | 1435 | 1095 |
| Volume to Capacity | 0.02 | 0.07 | 0.02 | 0.00 |
| Queue Length 95th (ft) | 1 | 5 | 1 | 0 |
| Control Delay (s) | 12.1 | 15.0 | 0.6 | 0.3 |
| Lane LOS | B | C | A | A |
| Approach Delay (s) | 12.1 | 15.0 | 0.6 | 0.3 |
| Approach LOS | B | C | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 1.2 | | | |
| Intersection Capacity Utilization | 45.9% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR | Ø2 |
|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | |
| Traffic Volume (vph) | 460 | 335 | 285 | 5 | 0 | 0 | |
| Future Volume (vph) | 460 | 335 | 285 | 5 | 0 | 0 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Lane Util. Factor | 0.95 | 0.95 | 0.95 | 0.95 | 1.00 | 1.00 | |
| Frt | | | 0.997 | | | | |
| Flt Protected | | 0.972 | | | | | |
| Satd. Flow (prot) | 0 | 3509 | 3599 | 0 | 0 | 0 | |
| Flt Permitted | | 0.629 | | | | | |
| Satd. Flow (perm) | 0 | 2271 | 3599 | 0 | 0 | 0 | |
| Right Turn on Red | | | | Yes | | Yes | |
| Satd. Flow (RTOR) | | | 4 | | | | |
| Link Speed (mph) | | 30 | 30 | | 30 | | |
| Link Distance (ft) | | 289 | 295 | | 140 | | |
| Travel Time (s) | | 6.6 | 6.7 | | 3.2 | | |
| Peak Hour Factor | 0.85 | 0.85 | 0.73 | 0.73 | 0.92 | 0.92 | |
| Adj. Flow (vph) | 541 | 394 | 390 | 7 | 0 | 0 | |
| Shared Lane Traffic (%) | | | | | | | |
| Lane Group Flow (vph) | 0 | 935 | 397 | 0 | 0 | 0 | |
| Enter Blocked Intersection | No | No | No | No | No | No | |
| Lane Alignment | Left | Left | Left | Right | Left | Right | |
| Median Width(ft) | | 0 | 0 | | 0 | | |
| Link Offset(ft) | | 0 | 0 | | 0 | | |
| Crosswalk Width(ft) | | 16 | 16 | | 16 | | |
| Two way Left Turn Lane | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Turning Speed (mph) | 15 | | | 9 | 15 | 9 | |
| Number of Detectors | 1 | 2 | 2 | | | | |
| Detector Template | Left | Thru | Thru | | | | |
| Leading Detector (ft) | 20 | 100 | 100 | | | | |
| Trailing Detector (ft) | 0 | 0 | 0 | | | | |
| Detector 1 Position(ft) | 0 | 0 | 0 | | | | |
| Detector 1 Size(ft) | 20 | 6 | 6 | | | | |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | | | | |
| Detector 1 Channel | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | | | | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | | | | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | | | | |
| Detector 2 Position(ft) | | 94 | 94 | | | | |
| Detector 2 Size(ft) | | 6 | 6 | | | | |
| Detector 2 Type | | Cl+Ex | Cl+Ex | | | | |
| Detector 2 Channel | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | 0.0 | | | | |
| Turn Type | Perm | NA | NA | | | | |
| Protected Phases | | 1 | 1 | | | | 2 |
| Permitted Phases | 1 | | | | | | |
| Detector Phase | 1 | 1 | 1 | | | | |
| Switch Phase | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | 8.0 | | | | 10.0 |



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR | Ø2 |
|---|---|---|---|---|---|---|---|
| Minimum Split (s) | 22.0 | 22.0 | 22.0 | | | | 25.0 |
| Total Split (s) | 70.0 | 70.0 | 70.0 | | | | 25.0 |
| Total Split (%) | 73.7% | 73.7% | 73.7% | | | | 26% |
| Maximum Green (s) | 62.6 | 62.6 | 62.6 | | | | 20.5 |
| Yellow Time (s) | 5.4 | 5.4 | 5.4 | | | | 3.5 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | | | 1.0 |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | | | |
| Total Lost Time (s) | | 7.4 | 7.4 | | | | |
| Lead/Lag | Lead | Lead | Lead | | | | Lag |
| Lead-Lag Optimize? | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | | | | 2.0 |
| Recall Mode | Max | Max | Max | | | | None |
| Walk Time (s) | | | | | | | 18.0 |
| Flash Dont Walk (s) | | | | | | | 1.0 |
| Pedestrian Calls (#/hr) | | | | | | | 24 |
| Act Effct Green (s) | | 83.6 | 83.6 | | | | |
| Actuated g/C Ratio | | 0.89 | 0.89 | | | | |
| v/c Ratio | | 0.46 | 0.12 | | | | |
| Control Delay | | 4.8 | 2.7 | | | | |
| Queue Delay | | 0.0 | 0.0 | | | | |
| Total Delay | | 4.8 | 2.7 | | | | |
| LOS | | A | A | | | | |
| Approach Delay | | 4.8 | 2.7 | | | | |
| Approach LOS | | A | A | | | | |

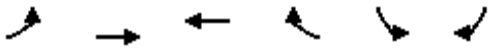
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 95 | | | |
| Actuated Cycle Length: 94.4 | | | |
| Natural Cycle: 60 | | | |
| Control Type: Semi Act-Uncoord | | | |
| Maximum v/c Ratio: 0.46 | | | |
| Intersection Signal Delay: 4.2 | | Intersection LOS: A | |
| Intersection Capacity Utilization 45.9% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 14: Day Blvd Ped



| Lane Group | EBT | WBT |
|---|---|---|
| Lane Group Flow (vph) | 935 | 397 |
| v/c Ratio | 0.46 | 0.12 |
| Control Delay | 4.8 | 2.7 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 4.8 | 2.7 |
| Queue Length 50th (ft) | 0 | 0 |
| Queue Length 95th (ft) | 175 | 43 |
| Internal Link Dist (ft) | 209 | 215 |
| Turn Bay Length (ft) | | |
| Base Capacity (vph) | 2012 | 3189 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.46 | 0.12 |

Intersection Summary



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 460 | 335 | 285 | 5 | 0 | 0 |
| Future Volume (vph) | 460 | 335 | 285 | 5 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 7.4 | 7.4 | | | |
| Lane Util. Factor | | 0.95 | 0.95 | | | |
| Frt | | 1.00 | 1.00 | | | |
| Flt Protected | | 0.97 | 1.00 | | | |
| Satd. Flow (prot) | | 3508 | 3600 | | | |
| Flt Permitted | | 0.63 | 1.00 | | | |
| Satd. Flow (perm) | | 2270 | 3600 | | | |
| Peak-hour factor, PHF | 0.85 | 0.85 | 0.73 | 0.73 | 0.92 | 0.92 |
| Adj. Flow (vph) | 541 | 394 | 390 | 7 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 1 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 935 | 396 | 0 | 0 | 0 |
| Turn Type | Perm | NA | NA | | | |
| Protected Phases | | 1 | 1 | | | |
| Permitted Phases | 1 | | | | | |
| Actuated Green, G (s) | | 78.7 | 78.7 | | | |
| Effective Green, g (s) | | 78.7 | 78.7 | | | |
| Actuated g/C Ratio | | 0.81 | 0.81 | | | |
| Clearance Time (s) | | 7.4 | 7.4 | | | |
| Vehicle Extension (s) | | 2.0 | 2.0 | | | |
| Lane Grp Cap (vph) | | 1837 | 2914 | | | |
| v/s Ratio Prot | | | 0.11 | | | |
| v/s Ratio Perm | | c0.41 | | | | |
| v/c Ratio | | 0.51 | 0.14 | | | |
| Uniform Delay, d1 | | 3.0 | 2.0 | | | |
| Progression Factor | | 1.00 | 1.00 | | | |
| Incremental Delay, d2 | | 1.0 | 0.1 | | | |
| Delay (s) | | 4.0 | 2.1 | | | |
| Level of Service | | A | A | | | |
| Approach Delay (s) | | 4.0 | 2.1 | | 0.0 | |
| Approach LOS | | A | A | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 3.4 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.47 | | |
| Actuated Cycle Length (s) | 97.2 | Sum of lost time (s) | 11.9 |
| Intersection Capacity Utilization | 45.9% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

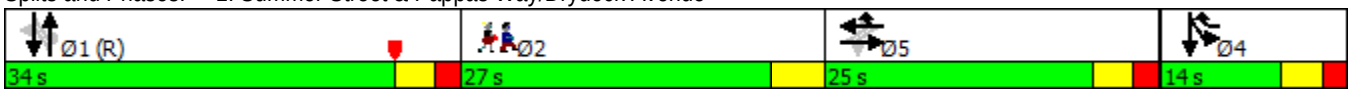
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 65 | 35 | 15 | 215 | 90 | 245 | 10 | 605 | 120 | 55 | 905 | 220 |
| Future Volume (vph) | 65 | 35 | 15 | 215 | 90 | 245 | 10 | 605 | 120 | 55 | 905 | 220 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 14 | 12 | 12 | 13 | 16 | 10 | 11 | 12 | 13 | 12 | 12 |
| Storage Length (ft) | 0 | | 0 | 350 | | 0 | 70 | | 0 | 350 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor | | 0.98 | | | 0.98 | | 0.98 | 0.99 | | 0.99 | 0.96 | |
| Frt | | 0.982 | | | | 0.850 | | 0.975 | | | 0.971 | |
| Flt Protected | | 0.973 | | | 0.966 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1641 | 0 | 0 | 1702 | 1569 | 1516 | 2954 | 0 | 1569 | 2940 | 0 |
| Flt Permitted | | 0.513 | | | 0.714 | | 0.146 | | | 0.146 | | |
| Satd. Flow (perm) | 0 | 859 | 0 | 0 | 1227 | 1569 | 228 | 2954 | 0 | 239 | 2940 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 7 | | | | 269 | | 23 | | | 37 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 745 | | | 950 | | | 1510 | | | 501 | |
| Travel Time (s) | | 16.9 | | | 21.6 | | | 34.3 | | | 11.4 | |
| Confl. Peds. (#/hr) | 21 | | 33 | 33 | | 21 | 138 | | 34 | 34 | | 138 |
| Confl. Bikes (#/hr) | | | 1 | | | 1 | | | 2 | | | 25 |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.91 | 0.91 | 0.91 | 0.90 | 0.90 | 0.90 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 6% | 3% | 8% | 0% | 1% | 5% | 0% | 3% | 2% | 7% | 3% | 4% |
| Adj. Flow (vph) | 76 | 41 | 18 | 236 | 99 | 269 | 11 | 672 | 133 | 59 | 973 | 237 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 135 | 0 | 0 | 335 | 269 | 11 | 805 | 0 | 59 | 1210 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 6 | | | 13 | | | 17 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.05 | 1.14 | 1.14 | 1.10 | 0.97 | 1.25 | 1.19 | 1.14 | 1.10 | 1.14 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | 20 | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | 20 | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |

| Lane Group | Ø2 |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | |
| Future Volume (vph) | |
| Ideal Flow (vphpl) | |
| Lane Width (ft) | |
| Storage Length (ft) | |
| Storage Lanes | |
| Taper Length (ft) | |
| Lane Util. Factor | |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Right Turn on Red | |
| Satd. Flow (RTOR) | |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | |
| Heavy Vehicles (%) | |
| Adj. Flow (vph) | |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | |
| Enter Blocked Intersection | |
| Lane Alignment | |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | |
| Turning Speed (mph) | |
| Number of Detectors | |
| Detector Template | |
| Leading Detector (ft) | |
| Trailing Detector (ft) | |
| Detector 1 Position(ft) | |
| Detector 1 Size(ft) | |
| Detector 1 Type | |
| Detector 1 Channel | |
| Detector 1 Extend (s) | |
| Detector 1 Queue (s) | |
| Detector 1 Delay (s) | |
| Detector 2 Position(ft) | |
| Detector 2 Size(ft) | |
| Detector 2 Type | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | pt+ov | Perm | NA | | D.P+P | NA | |
| Protected Phases | | 5 | | | 5 | 5 4 | | 1 | | 4 | 1 4 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Detector Phase | 5 | 5 | | 5 | 5 | 5 4 | 1 | 1 | | 4 | 1 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | | |
| Minimum Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | | 13.0 | 13.0 | | 13.0 | | |
| Total Split (s) | 25.0 | 25.0 | | 25.0 | 25.0 | | 34.0 | 34.0 | | 14.0 | | |
| Total Split (%) | 25.0% | 25.0% | | 25.0% | 25.0% | | 34.0% | 34.0% | | 14.0% | | |
| Maximum Green (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 29.0 | 29.0 | | 9.0 | | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | 0.0 | 0.0 | | 0.0 | | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | 5.0 | 5.0 | | 5.0 | | |
| Lead/Lag | | | | | | | Lead | Lead | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | | |
| Recall Mode | None | None | | None | None | | C-Max | C-Max | | None | | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 30.8 | | | 30.8 | 44.8 | 29.0 | 29.0 | | 38.0 | 43.0 | |
| Actuated g/C Ratio | | 0.31 | | | 0.31 | 0.45 | 0.29 | 0.29 | | 0.38 | 0.43 | |
| v/c Ratio | | 0.50 | | | 0.89 | 0.32 | 0.17 | 0.92 | | 0.28 | 0.94 | |
| Control Delay | | 40.6 | | | 64.4 | 4.1 | 34.1 | 51.0 | | 20.7 | 41.9 | |
| Queue Delay | | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | | 40.6 | | | 64.4 | 4.1 | 34.1 | 51.0 | | 20.7 | 41.9 | |
| LOS | | D | | | E | A | C | D | | C | D | |
| Approach Delay | | 40.6 | | | 37.6 | | | 50.8 | | | 40.9 | |
| Approach LOS | | D | | | D | | | D | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 100 | | | |
| Actuated Cycle Length: 100 | | | |
| Offset: 0 (0%), Referenced to phase 1:NBSB, Start of Yellow | | | |
| Natural Cycle: 110 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.94 | | | |
| Intersection Signal Delay: 43.0 | | Intersection LOS: D | |
| Intersection Capacity Utilization 80.7% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 1: Summer Street & Pappas Way/Drydock Avenue



| Lane Group | Ø2 |
|---|---|
| Detector 2 Channel | |
| Detector 2 Extend (s) | |
| Turn Type | |
| Protected Phases | 2 |
| Permitted Phases | |
| Detector Phase | |
| Switch Phase | |
| Minimum Initial (s) | 4.0 |
| Minimum Split (s) | 27.0 |
| Total Split (s) | 27.0 |
| Total Split (%) | 27% |
| Maximum Green (s) | 23.0 |
| Yellow Time (s) | 4.0 |
| All-Red Time (s) | 0.0 |
| Lost Time Adjust (s) | |
| Total Lost Time (s) | |
| Lead/Lag | Lag |
| Lead-Lag Optimize? | |
| Vehicle Extension (s) | 2.0 |
| Recall Mode | None |
| Walk Time (s) | 7.0 |
| Flash Dont Walk (s) | 16.0 |
| Pedestrian Calls (#/hr) | 28 |
| Act Effct Green (s) | |
| Actuated g/C Ratio | |
| v/c Ratio | |
| Control Delay | |
| Queue Delay | |
| Total Delay | |
| LOS | |
| Approach Delay | |
| Approach LOS | |

| Intersection Summary |
|---|



| Lane Group | EBT | WBT | WBR | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 135 | 335 | 269 | 11 | 805 | 59 | 1210 |
| v/c Ratio | 0.50 | 0.89 | 0.32 | 0.17 | 0.92 | 0.28 | 0.94 |
| Control Delay | 40.6 | 64.4 | 4.1 | 34.1 | 51.0 | 20.7 | 41.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 40.6 | 64.4 | 4.1 | 34.1 | 51.0 | 20.7 | 41.9 |
| Queue Length 50th (ft) | 78 | ~283 | 0 | 5 | 254 | 22 | 370 |
| Queue Length 95th (ft) | #163 | #455 | 54 | 22 | #375 | 47 | #524 |
| Internal Link Dist (ft) | 665 | 870 | | | 1430 | | 421 |
| Turn Bay Length (ft) | | | | 70 | | 350 | |
| Base Capacity (vph) | 269 | 377 | 851 | 66 | 872 | 210 | 1285 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.50 | 0.89 | 0.32 | 0.17 | 0.92 | 0.28 | 0.94 |

Intersection Summary

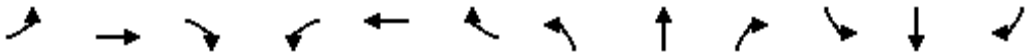
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 65 | 35 | 15 | 215 | 90 | 245 | 10 | 605 | 120 | 55 | 905 | 220 |
| Future Volume (vph) | 65 | 35 | 15 | 215 | 90 | 245 | 10 | 605 | 120 | 55 | 905 | 220 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 14 | 12 | 12 | 13 | 16 | 10 | 11 | 12 | 13 | 12 | 12 |
| Total Lost time (s) | | 5.0 | | | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | 1.00 | 1.00 | 0.95 | | 1.00 | 0.95 | |
| Frpb, ped/bikes | | 0.99 | | | 1.00 | 1.00 | 1.00 | 0.99 | | 1.00 | 0.96 | |
| Flpb, ped/bikes | | 0.99 | | | 0.98 | 1.00 | 0.98 | 1.00 | | 1.00 | 1.00 | |
| Frt | | 0.98 | | | 1.00 | 0.85 | 1.00 | 0.98 | | 1.00 | 0.97 | |
| Flt Protected | | 0.97 | | | 0.97 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 1634 | | | 1672 | 1569 | 1481 | 2954 | | 1568 | 2935 | |
| Flt Permitted | | 0.51 | | | 0.71 | 1.00 | 0.15 | 1.00 | | 0.15 | 1.00 | |
| Satd. Flow (perm) | | 862 | | | 1236 | 1569 | 228 | 2954 | | 241 | 2935 | |
| Peak-hour factor, PHF | 0.85 | 0.85 | 0.85 | 0.91 | 0.91 | 0.91 | 0.90 | 0.90 | 0.90 | 0.93 | 0.93 | 0.93 |
| Adj. Flow (vph) | 76 | 41 | 18 | 236 | 99 | 269 | 11 | 672 | 133 | 59 | 973 | 237 |
| RTOR Reduction (vph) | 0 | 5 | 0 | 0 | 0 | 148 | 0 | 17 | 0 | 0 | 22 | 0 |
| Lane Group Flow (vph) | 0 | 130 | 0 | 0 | 335 | 121 | 11 | 788 | 0 | 59 | 1188 | 0 |
| Confl. Peds. (#/hr) | 21 | | 33 | 33 | | 21 | 138 | | 34 | 34 | | 138 |
| Confl. Bikes (#/hr) | | | 1 | | | 1 | | | 2 | | | 25 |
| Heavy Vehicles (%) | 6% | 3% | 8% | 0% | 1% | 5% | 0% | 3% | 2% | 7% | 3% | 4% |
| Turn Type | Perm | NA | | Perm | NA | pt+ov | Perm | NA | | D.P+P | NA | |
| Protected Phases | | 5 | | | 5 | 5 4 | | 1 | | 4 | 1 4 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 30.8 | | | 30.8 | 44.8 | 27.4 | 27.4 | | 36.4 | 41.4 | |
| Effective Green, g (s) | | 30.8 | | | 30.8 | 44.8 | 27.4 | 27.4 | | 36.4 | 41.4 | |
| Actuated g/C Ratio | | 0.31 | | | 0.31 | 0.45 | 0.27 | 0.27 | | 0.36 | 0.41 | |
| Clearance Time (s) | | 5.0 | | | 5.0 | | 5.0 | 5.0 | | 5.0 | | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | | 2.0 | 2.0 | | 2.0 | | |
| Lane Grp Cap (vph) | | 265 | | | 380 | 702 | 62 | 809 | | 207 | 1215 | |
| v/s Ratio Prot | | | | | | 0.08 | | 0.27 | | 0.03 | c0.40 | |
| v/s Ratio Perm | | 0.15 | | | c0.27 | | 0.05 | | | 0.08 | | |
| v/c Ratio | | 0.49 | | | 0.88 | 0.17 | 0.18 | 0.97 | | 0.29 | 0.98 | |
| Uniform Delay, d1 | | 28.2 | | | 32.9 | 16.5 | 27.7 | 36.0 | | 22.7 | 28.9 | |
| Progression Factor | | 1.00 | | | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 0.5 | | | 20.1 | 0.0 | 6.2 | 26.0 | | 0.3 | 20.4 | |
| Delay (s) | | 28.7 | | | 52.9 | 16.5 | 33.9 | 62.0 | | 22.9 | 49.2 | |
| Level of Service | | C | | | D | B | C | E | | C | D | |
| Approach Delay (s) | | 28.7 | | | 36.7 | | | 61.6 | | | 48.0 | |
| Approach LOS | | C | | | D | | | E | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 48.6 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.83 | | |
| Actuated Cycle Length (s) | 100.0 | Sum of lost time (s) | 19.0 |
| Intersection Capacity Utilization | 80.7% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

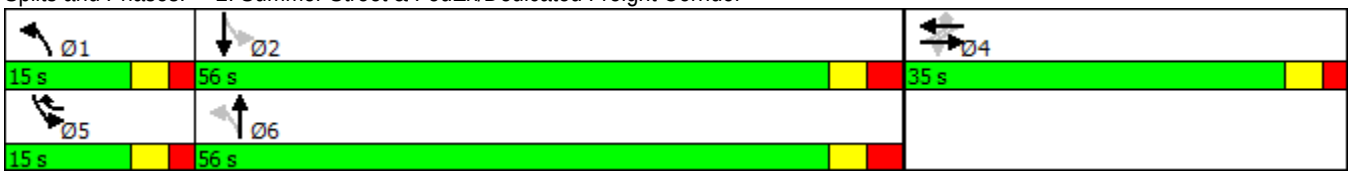


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 20 | 0 | 0 | 15 | 0 | 10 | 0 | 705 | 5 | 0 | 1120 | 0 |
| Future Volume (vph) | 20 | 0 | 0 | 15 | 0 | 10 | 0 | 705 | 5 | 0 | 1120 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 13 | 13 | 13 | 12 | 12 | 12 | 10 | 10 | 10 | 11 | 11 | 11 |
| Storage Length (ft) | 0 | | 0 | 0 | | 60 | 60 | | 0 | 120 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 50 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Frt | | | | | | 0.850 | | 0.999 | | | | |
| Flt Protected | | 0.950 | | | 0.950 | | | | | | | |
| Satd. Flow (prot) | 0 | 1679 | 0 | 0 | 1624 | 727 | 1596 | 3029 | 0 | 826 | 3049 | 0 |
| Flt Permitted | | 0.747 | | | 0.743 | | | | | | | |
| Satd. Flow (perm) | 0 | 1320 | 0 | 0 | 1271 | 727 | 1596 | 3029 | 0 | 826 | 3049 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | | 31 | | 1 | | | | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 228 | | | 352 | | | 665 | | | 1510 | |
| Travel Time (s) | | 5.2 | | | 8.0 | | | 15.1 | | | 34.3 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 100% | 0% | 0% | 0% | 100% | 3% | 0% |
| Adj. Flow (vph) | 22 | 0 | 0 | 16 | 0 | 11 | 0 | 766 | 5 | 0 | 1217 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 22 | 0 | 0 | 16 | 11 | 0 | 771 | 0 | 0 | 1217 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 12 | | | 11 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.10 | 1.10 | 1.10 | 1.14 | 1.14 | 1.14 | 1.25 | 1.25 | 1.25 | 1.19 | 1.19 | 1.19 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | 20 | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | 20 | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | pm+ov | pm+pt | NA | | pm+pt | NA | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Protected Phases | | 4 | | | 4 | 5 | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 4 | | | 4 | | 4 | 6 | 6 | | 2 | | |
| Detector Phase | 4 | 4 | | 4 | 4 | 5 | 1 | 6 | | 5 | 2 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 6.0 | 6.0 | | 6.0 | 6.0 | 6.0 | 6.0 | 10.0 | | 6.0 | 10.0 | |
| Minimum Split (s) | 26.0 | 26.0 | | 26.0 | 26.0 | 11.0 | 11.0 | 24.0 | | 11.0 | 24.0 | |
| Total Split (s) | 35.0 | 35.0 | | 35.0 | 35.0 | 15.0 | 15.0 | 56.0 | | 15.0 | 56.0 | |
| Total Split (%) | 33.0% | 33.0% | | 33.0% | 33.0% | 14.2% | 14.2% | 52.8% | | 14.2% | 52.8% | |
| Maximum Green (s) | 30.0 | 30.0 | | 30.0 | 30.0 | 10.0 | 10.0 | 50.0 | | 10.0 | 50.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 3.0 | | 2.0 | 3.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | 5.0 | 5.0 | 6.0 | | 5.0 | 6.0 | |
| Lead/Lag | | | | | | Lead | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | None | None | | None | None | None | None | Ped | | None | Max | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | | 7.0 | | | | |
| Flash Dont Walk (s) | 14.0 | 14.0 | | 14.0 | 14.0 | | | 9.0 | | | | |
| Pedestrian Calls (#/hr) | 10 | 10 | | 10 | 10 | | | 10 | | | | |
| Act Effct Green (s) | | 8.7 | | | 8.7 | 15.3 | | 56.8 | | | 58.7 | |
| Actuated g/C Ratio | | 0.12 | | | 0.12 | 0.21 | | 0.79 | | | 0.82 | |
| v/c Ratio | | 0.14 | | | 0.10 | 0.06 | | 0.32 | | | 0.49 | |
| Control Delay | | 28.0 | | | 27.3 | 2.3 | | 6.1 | | | 5.4 | |
| Queue Delay | | 0.0 | | | 0.0 | 0.0 | | 0.0 | | | 0.0 | |
| Total Delay | | 28.0 | | | 27.3 | 2.3 | | 6.1 | | | 5.4 | |
| LOS | | C | | | C | A | | A | | | A | |
| Approach Delay | | 28.0 | | | 17.1 | | | 6.1 | | | 5.4 | |
| Approach LOS | | C | | | B | | | A | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 106 | | | |
| Actuated Cycle Length: 71.6 | | | |
| Natural Cycle: 75 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 0.49 | | | |
| Intersection Signal Delay: 6.0 | | Intersection LOS: A | |
| Intersection Capacity Utilization 51.5% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

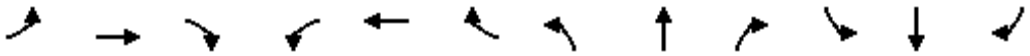
Splits and Phases: 2: Summer Street & FedEx/Dedicated Freight Corridor





| Lane Group | EBT | WBT | WBR | NBT | SBT |
|---|---|---|---|---|---|
| Lane Group Flow (vph) | 22 | 16 | 11 | 771 | 1217 |
| v/c Ratio | 0.14 | 0.10 | 0.06 | 0.32 | 0.49 |
| Control Delay | 28.0 | 27.3 | 2.3 | 6.1 | 5.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 28.0 | 27.3 | 2.3 | 6.1 | 5.4 |
| Queue Length 50th (ft) | 9 | 6 | 0 | 41 | 81 |
| Queue Length 95th (ft) | 27 | 22 | 3 | 192 | 258 |
| Internal Link Dist (ft) | 148 | 272 | | 585 | 1430 |
| Turn Bay Length (ft) | | | 60 | | |
| Base Capacity (vph) | 555 | 535 | 219 | 2484 | 2500 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.04 | 0.03 | 0.05 | 0.31 | 0.49 |

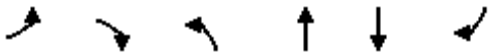
Intersection Summary



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 20 | 0 | 0 | 15 | 0 | 10 | 0 | 705 | 5 | 0 | 1120 | 0 |
| Future Volume (vph) | 20 | 0 | 0 | 15 | 0 | 10 | 0 | 705 | 5 | 0 | 1120 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 13 | 13 | 13 | 12 | 12 | 12 | 10 | 10 | 10 | 11 | 11 | 11 |
| Total Lost time (s) | | 5.0 | | | 5.0 | 5.0 | | 6.0 | | | 6.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | 1.00 | | 0.95 | | | 0.95 | |
| Frt | | 1.00 | | | 1.00 | 0.85 | | 1.00 | | | 1.00 | |
| Flt Protected | | 0.95 | | | 0.95 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | | 1679 | | | 1624 | 727 | | 3029 | | | 3049 | |
| Flt Permitted | | 0.75 | | | 0.74 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | | 1320 | | | 1271 | 727 | | 3029 | | | 3049 | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 22 | 0 | 0 | 16 | 0 | 11 | 0 | 766 | 5 | 0 | 1217 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 22 | 0 | 0 | 16 | 1 | 0 | 771 | 0 | 0 | 1217 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 100% | 0% | 0% | 0% | 100% | 3% | 0% |
| Turn Type | Perm | NA | | Perm | NA | pm+ov | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | | 4 | | | 4 | 5 | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 4 | | | 4 | | 4 | 6 | 6 | | 2 | | |
| Actuated Green, G (s) | | 6.3 | | | 6.3 | 7.3 | | 54.4 | | | 60.4 | |
| Effective Green, g (s) | | 6.3 | | | 6.3 | 7.3 | | 54.4 | | | 60.4 | |
| Actuated g/C Ratio | | 0.08 | | | 0.08 | 0.09 | | 0.70 | | | 0.78 | |
| Clearance Time (s) | | 5.0 | | | 5.0 | 5.0 | | 6.0 | | | 6.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | 2.0 | | 2.0 | | | 2.0 | |
| Lane Grp Cap (vph) | | 107 | | | 103 | 115 | | 2120 | | | 2370 | |
| v/s Ratio Prot | | | | | | 0.00 | | 0.25 | | | c0.40 | |
| v/s Ratio Perm | | c0.02 | | | 0.01 | 0.00 | | | | | | |
| v/c Ratio | | 0.21 | | | 0.16 | 0.01 | | 0.36 | | | 0.51 | |
| Uniform Delay, d1 | | 33.4 | | | 33.2 | 31.9 | | 4.7 | | | 3.2 | |
| Progression Factor | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 0.3 | | | 0.3 | 0.0 | | 0.0 | | | 0.8 | |
| Delay (s) | | 33.7 | | | 33.5 | 31.9 | | 4.7 | | | 4.0 | |
| Level of Service | | C | | | C | C | | A | | | A | |
| Approach Delay (s) | | 33.7 | | | 32.8 | | | 4.7 | | | 4.0 | |
| Approach LOS | | C | | | C | | | A | | | A | |

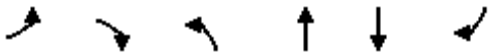
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 5.0 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.52 | | |
| Actuated Cycle Length (s) | 77.7 | Sum of lost time (s) | 16.0 |
| Intersection Capacity Utilization | 51.5% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 15 | 10 | 0 | 690 | 1100 | 10 |
| Future Volume (vph) | 15 | 10 | 0 | 690 | 1100 | 10 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 14 | 12 | 10 | 10 | 10 | 10 |
| Lane Util. Factor | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 0.95 |
| Ped Bike Factor | | | | | | |
| Frt | 0.947 | | | | 0.999 | |
| Flt Protected | 0.971 | | | | | |
| Satd. Flow (prot) | 1618 | 0 | 0 | 2973 | 2970 | 0 |
| Flt Permitted | 0.971 | | | | | |
| Satd. Flow (perm) | 1618 | 0 | 0 | 2973 | 2970 | 0 |
| Link Speed (mph) | 30 | | | 30 | 30 | |
| Link Distance (ft) | 384 | | | 365 | 665 | |
| Travel Time (s) | 8.7 | | | 8.3 | 15.1 | |
| Confl. Peds. (#/hr) | | | 153 | | | 153 |
| Confl. Bikes (#/hr) | | | | | | 34 |
| Peak Hour Factor | 0.65 | 0.65 | 0.85 | 0.85 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 6% | 0% | 0% | 2% | 2% | 0% |
| Parking (#/hr) | | | 1 | | | 1 |
| Adj. Flow (vph) | 23 | 15 | 0 | 812 | 1146 | 10 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 38 | 0 | 0 | 812 | 1156 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(ft) | 14 | | | 10 | 10 | |
| Link Offset(ft) | 0 | | | 0 | 0 | |
| Crosswalk Width(ft) | 16 | | | 16 | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.05 | 1.14 | 1.25 | 1.25 | 1.25 | 1.25 |
| Turning Speed (mph) | 15 | 9 | 15 | | | 9 |
| Sign Control | Stop | | | Free | Free | |

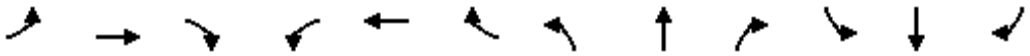
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 44.2% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 15 | 10 | 0 | 690 | 1100 | 10 |
| Future Volume (Veh/h) | 15 | 10 | 0 | 690 | 1100 | 10 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.65 | 0.65 | 0.85 | 0.85 | 0.96 | 0.96 |
| Hourly flow rate (vph) | 23 | 15 | 0 | 812 | 1146 | 10 |
| Pedestrians | 153 | | | | | |
| Lane Width (ft) | 14.0 | | | | | |
| Walking Speed (ft/s) | 4.0 | | | | | |
| Percent Blockage | 15 | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | 365 | 665 | |
| pX, platoon unblocked | 0.94 | 0.89 | 0.89 | | | |
| vC, conflicting volume | 1710 | 731 | 1309 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 1115 | 446 | 1096 | | | |
| tC, single (s) | 6.9 | 6.9 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.6 | 3.3 | 2.2 | | | |
| p0 queue free % | 85 | 96 | 100 | | | |
| cM capacity (veh/h) | 157 | 428 | 487 | | | |

| Direction, Lane # | EB 1 | NB 1 | NB 2 | SB 1 | SB 2 |
|---|---|---|---|---|---|
| Volume Total | 38 | 271 | 541 | 764 | 392 |
| Volume Left | 23 | 0 | 0 | 0 | 0 |
| Volume Right | 15 | 0 | 0 | 0 | 10 |
| cSH | 209 | 487 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.18 | 0.00 | 0.32 | 0.45 | 0.23 |
| Queue Length 95th (ft) | 16 | 0 | 0 | 0 | 0 |
| Control Delay (s) | 26.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane LOS | D | | | | |
| Approach Delay (s) | 26.0 | 0.0 | | 0.0 | |
| Approach LOS | D | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.5 | | |
| Intersection Capacity Utilization | 44.2% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



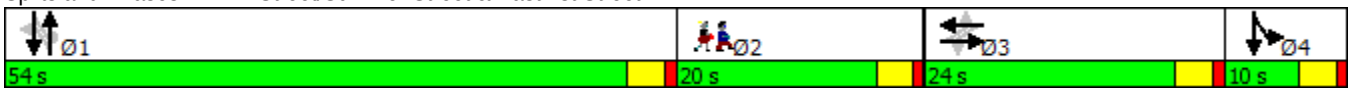
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 30 | 100 | 60 | 20 | 40 | 150 | 25 | 505 | 20 | 265 | 720 | 125 |
| Future Volume (vph) | 30 | 100 | 60 | 20 | 40 | 150 | 25 | 505 | 20 | 265 | 720 | 125 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 15 | 12 | 12 | 16 | 12 | 12 | 9 | 12 | 12 | 12 | 12 |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 100 | | 0 | 100 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Ped Bike Factor | | 0.95 | | | 0.95 | | | 1.00 | | | 0.98 | |
| Frt | | 0.957 | | | 0.904 | | | 0.994 | | | 0.983 | |
| Flt Protected | | 0.992 | | | 0.995 | | | 0.998 | | | 0.988 | |
| Satd. Flow (prot) | 0 | 1655 | 0 | 0 | 1587 | 0 | 0 | 2888 | 0 | 0 | 3039 | 0 |
| Flt Permitted | | 0.801 | | | 0.924 | | | 0.859 | | | 0.636 | |
| Satd. Flow (perm) | 0 | 1332 | 0 | 0 | 1467 | 0 | 0 | 2483 | 0 | 0 | 1947 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 19 | | | 101 | | | 5 | | | 19 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 540 | | | 576 | | | 340 | | | 365 | |
| Travel Time (s) | | 12.3 | | | 13.1 | | | 7.7 | | | 8.3 | |
| Confl. Peds. (#/hr) | 29 | | 36 | 36 | | 29 | 134 | | 51 | 51 | | 134 |
| Confl. Bikes (#/hr) | | | 12 | | | 1 | | | | | | 19 |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.85 | 0.85 | 0.85 | 0.88 | 0.88 | 0.88 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 13% | 1% | 2% | 0% | 5% | 6% | 0% | 0% | 5% | 1% | 2% | 4% |
| Adj. Flow (vph) | 35 | 116 | 70 | 24 | 47 | 176 | 28 | 574 | 23 | 294 | 800 | 139 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 221 | 0 | 0 | 247 | 0 | 0 | 625 | 0 | 0 | 1233 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.01 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 1.30 | 1.14 | 1.14 | 1.14 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |

| Lane Group | Ø2 |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | |
| Future Volume (vph) | |
| Ideal Flow (vphpl) | |
| Lane Width (ft) | |
| Storage Length (ft) | |
| Storage Lanes | |
| Taper Length (ft) | |
| Lane Util. Factor | |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Right Turn on Red | |
| Satd. Flow (RTOR) | |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | |
| Heavy Vehicles (%) | |
| Adj. Flow (vph) | |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | |
| Enter Blocked Intersection | |
| Lane Alignment | |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | |
| Turning Speed (mph) | |
| Number of Detectors | |
| Detector Template | |
| Leading Detector (ft) | |
| Trailing Detector (ft) | |
| Detector 1 Position(ft) | |
| Detector 1 Size(ft) | |
| Detector 1 Type | |
| Detector 1 Channel | |
| Detector 1 Extend (s) | |
| Detector 1 Queue (s) | |
| Detector 1 Delay (s) | |
| Detector 2 Position(ft) | |
| Detector 2 Size(ft) | |
| Detector 2 Type | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | D.P+P | NA | |
| Protected Phases | | 3 | | | 3 | | | 1 | | 4 | 1 4 | |
| Permitted Phases | 3 | | | 3 | | | 1 | | | 1 | | |
| Detector Phase | 3 | 3 | | 3 | 3 | | 1 | 1 | | 4 | 1 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 10.0 | 10.0 | | 5.0 | | |
| Minimum Split (s) | 11.0 | 11.0 | | 11.0 | 11.0 | | 14.0 | 14.0 | | 9.0 | | |
| Total Split (s) | 24.0 | 24.0 | | 24.0 | 24.0 | | 54.0 | 54.0 | | 10.0 | | |
| Total Split (%) | 22.2% | 22.2% | | 22.2% | 22.2% | | 50.0% | 50.0% | | 9.3% | | |
| Maximum Green (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 50.0 | 50.0 | | 6.0 | | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | |
| Total Lost Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | | |
| Lead/Lag | Lead | Lead | | Lead | Lead | | Lead | Lead | | Lag | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 1.0 | | |
| Recall Mode | None | None | | None | None | | Max | Max | | None | | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 18.0 | | | 18.0 | | | 50.8 | | | 56.9 | |
| Actuated g/C Ratio | | 0.18 | | | 0.18 | | | 0.52 | | | 0.58 | |
| v/c Ratio | | 0.85 | | | 0.70 | | | 0.48 | | | 1.02 | |
| Control Delay | | 66.0 | | | 34.9 | | | 18.9 | | | 54.0 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 66.0 | | | 34.9 | | | 18.9 | | | 54.0 | |
| LOS | | E | | | C | | | B | | | D | |
| Approach Delay | | 66.0 | | | 34.9 | | | 18.9 | | | 54.0 | |
| Approach LOS | | E | | | C | | | B | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 108 | | | |
| Actuated Cycle Length: 98 | | | |
| Natural Cycle: 140 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 1.02 | | | |
| Intersection Signal Delay: 43.7 | | Intersection LOS: D | |
| Intersection Capacity Utilization 82.5% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 4: L Street/Summer Street & East 1st Street



| Lane Group | Ø2 |
|---|---|
| Detector 2 Channel | |
| Detector 2 Extend (s) | |
| Turn Type | |
| Protected Phases | 2 |
| Permitted Phases | |
| Detector Phase | |
| Switch Phase | |
| Minimum Initial (s) | 4.0 |
| Minimum Split (s) | 20.0 |
| Total Split (s) | 20.0 |
| Total Split (%) | 19% |
| Maximum Green (s) | 16.0 |
| Yellow Time (s) | 3.0 |
| All-Red Time (s) | 1.0 |
| Lost Time Adjust (s) | |
| Total Lost Time (s) | |
| Lead/Lag | Lag |
| Lead-Lag Optimize? | |
| Vehicle Extension (s) | 3.0 |
| Recall Mode | None |
| Walk Time (s) | 7.0 |
| Flash Dont Walk (s) | 9.0 |
| Pedestrian Calls (#/hr) | 31 |
| Act Effct Green (s) | |
| Actuated g/C Ratio | |
| v/c Ratio | |
| Control Delay | |
| Queue Delay | |
| Total Delay | |
| LOS | |
| Approach Delay | |
| Approach LOS | |

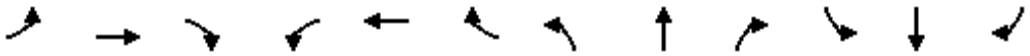
| Intersection Summary |
|---|

| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 221 | 247 | 625 | 1233 |
| v/c Ratio | 0.85 | 0.70 | 0.48 | 1.02 |
| Control Delay | 66.0 | 34.9 | 18.9 | 54.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 66.0 | 34.9 | 18.9 | 54.0 |
| Queue Length 50th (ft) | 137 | 95 | 157 | ~415 |
| Queue Length 95th (ft) | #250 | 169 | 206 | #640 |
| Internal Link Dist (ft) | 460 | 496 | 260 | 285 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 291 | 384 | 1290 | 1206 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.76 | 0.64 | 0.48 | 1.02 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

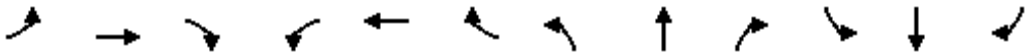
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 30 | 100 | 60 | 20 | 40 | 150 | 25 | 505 | 20 | 265 | 720 | 125 |
| Future Volume (vph) | 30 | 100 | 60 | 20 | 40 | 150 | 25 | 505 | 20 | 265 | 720 | 125 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 15 | 12 | 12 | 16 | 12 | 12 | 9 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | | | 0.95 | | | 0.95 | |
| Frpb, ped/bikes | | 0.96 | | | 0.96 | | | 1.00 | | | 0.98 | |
| Flpb, ped/bikes | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Frt | | 0.96 | | | 0.90 | | | 0.99 | | | 0.98 | |
| Flt Protected | | 0.99 | | | 1.00 | | | 1.00 | | | 0.99 | |
| Satd. Flow (prot) | | 1648 | | | 1578 | | | 2886 | | | 3036 | |
| Flt Permitted | | 0.80 | | | 0.92 | | | 0.86 | | | 0.64 | |
| Satd. Flow (perm) | | 1331 | | | 1465 | | | 2486 | | | 1953 | |
| Peak-hour factor, PHF | 0.86 | 0.86 | 0.86 | 0.85 | 0.85 | 0.85 | 0.88 | 0.88 | 0.88 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 35 | 116 | 70 | 24 | 47 | 176 | 28 | 574 | 23 | 294 | 800 | 139 |
| RTOR Reduction (vph) | 0 | 16 | 0 | 0 | 83 | 0 | 0 | 2 | 0 | 0 | 8 | 0 |
| Lane Group Flow (vph) | 0 | 205 | 0 | 0 | 164 | 0 | 0 | 623 | 0 | 0 | 1225 | 0 |
| Confl. Peds. (#/hr) | 29 | | 36 | 36 | | 29 | 134 | | 51 | 51 | | 134 |
| Confl. Bikes (#/hr) | | | 12 | | | 1 | | | | | | 19 |
| Heavy Vehicles (%) | 13% | 1% | 2% | 0% | 5% | 6% | 0% | 0% | 5% | 1% | 2% | 4% |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | D.P+P | NA | |
| Protected Phases | | 3 | | | 3 | | | 1 | | 4 | 1 4 | |
| Permitted Phases | 3 | | | 3 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 18.0 | | | 18.0 | | | 50.8 | | | 56.9 | |
| Effective Green, g (s) | | 18.0 | | | 18.0 | | | 50.8 | | | 56.9 | |
| Actuated g/C Ratio | | 0.18 | | | 0.18 | | | 0.51 | | | 0.57 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | | | 3.0 | | | | |
| Lane Grp Cap (vph) | | 240 | | | 264 | | | 1267 | | | 1182 | |
| v/s Ratio Prot | | | | | | | | | | | c0.06 | |
| v/s Ratio Perm | | c0.15 | | | 0.11 | | | 0.25 | | | c0.53 | |
| v/c Ratio | | 0.86 | | | 0.62 | | | 0.49 | | | 1.04 | |
| Uniform Delay, d1 | | 39.5 | | | 37.7 | | | 16.0 | | | 21.3 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 24.6 | | | 4.5 | | | 1.4 | | | 36.0 | |
| Delay (s) | | 64.1 | | | 42.2 | | | 17.3 | | | 57.4 | |
| Level of Service | | E | | | D | | | B | | | E | |
| Approach Delay (s) | | 64.1 | | | 42.2 | | | 17.3 | | | 57.4 | |
| Approach LOS | | E | | | D | | | B | | | E | |

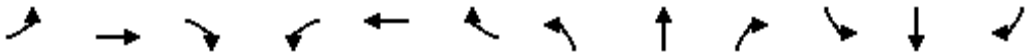
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 45.6 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.89 | | |
| Actuated Cycle Length (s) | 99.6 | Sum of lost time (s) | 16.0 |
| Intersection Capacity Utilization | 82.5% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 10 | 0 | 10 | 15 | 0 | 5 | 20 | 540 | 10 | 20 | 755 | 25 |
| Future Volume (vph) | 10 | 0 | 10 | 15 | 0 | 5 | 20 | 540 | 10 | 20 | 755 | 25 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 16 | 12 | 12 | 16 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.932 | | | 0.965 | | | 0.998 | | | 0.996 | |
| Flt Protected | | 0.976 | | | 0.964 | | | 0.998 | | | 0.999 | |
| Satd. Flow (prot) | 0 | 1452 | 0 | 0 | 1485 | 0 | 0 | 1912 | 0 | 0 | 1890 | 0 |
| Flt Permitted | | 0.976 | | | 0.964 | | | 0.998 | | | 0.999 | |
| Satd. Flow (perm) | 0 | 1452 | 0 | 0 | 1485 | 0 | 0 | 1912 | 0 | 0 | 1890 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 429 | | | 453 | | | 298 | | | 340 | |
| Travel Time (s) | | 9.8 | | | 10.3 | | | 6.8 | | | 7.7 | |
| Confl. Peds. (#/hr) | 33 | | 15 | 15 | | 33 | 131 | | 44 | 44 | | 131 |
| Confl. Bikes (#/hr) | | | 1 | | | | | | 1 | | | 18 |
| Peak Hour Factor | 0.50 | 0.50 | 0.50 | 0.86 | 0.86 | 0.86 | 0.89 | 0.89 | 0.89 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% | 0% | 0% | 2% | 4% |
| Adj. Flow (vph) | 20 | 0 | 20 | 17 | 0 | 6 | 22 | 607 | 11 | 22 | 821 | 27 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 40 | 0 | 0 | 23 | 0 | 0 | 640 | 0 | 0 | 870 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.25 | 1.14 | 1.14 | 1.25 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 0.97 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 71.6% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |

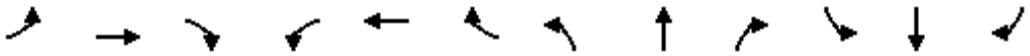


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 10 | 0 | 10 | 15 | 0 | 5 | 20 | 540 | 10 | 20 | 755 | 25 |
| Future Volume (Veh/h) | 10 | 0 | 10 | 15 | 0 | 5 | 20 | 540 | 10 | 20 | 755 | 25 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.50 | 0.50 | 0.50 | 0.86 | 0.86 | 0.86 | 0.89 | 0.89 | 0.89 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 20 | 0 | 20 | 17 | 0 | 6 | 22 | 607 | 11 | 22 | 821 | 27 |
| Pedestrians | | 131 | | | 44 | | | 15 | | | 33 | |
| Lane Width (ft) | | 10.0 | | | 10.0 | | | 16.0 | | | 16.0 | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Percent Blockage | | 9 | | | 3 | | | 2 | | | 4 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | 602 | | | 340 | |
| pX, platoon unblocked | 0.77 | 0.77 | 0.68 | 0.77 | 0.77 | 0.83 | 0.68 | | | 0.83 | | |
| vC, conflicting volume | 1705 | 1716 | 980 | 1614 | 1724 | 690 | 979 | | | 662 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1269 | 1283 | 740 | 1151 | 1294 | 524 | 737 | | | 491 | | |
| tC, single (s) | *4.0 | 6.5 | *4.0 | *4.0 | 6.5 | *4.0 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 92 | 100 | 95 | 94 | 100 | 99 | 96 | | | 97 | | |
| cM capacity (veh/h) | 252 | 105 | 403 | 286 | 104 | 595 | 545 | | | 872 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 40 | 23 | 640 | 870 |
| Volume Left | 20 | 17 | 22 | 22 |
| Volume Right | 20 | 6 | 11 | 27 |
| cSH | 310 | 331 | 545 | 872 |
| Volume to Capacity | 0.13 | 0.07 | 0.04 | 0.03 |
| Queue Length 95th (ft) | 11 | 6 | 3 | 2 |
| Control Delay (s) | 18.3 | 16.7 | 1.1 | 0.7 |
| Lane LOS | C | C | A | A |
| Approach Delay (s) | 18.3 | 16.7 | 1.1 | 0.7 |
| Approach LOS | C | C | | |

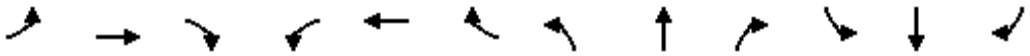
| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.6 | | |
| Intersection Capacity Utilization | 71.6% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |

* User Entered Value



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 20 | 10 | 15 | 0 | 10 | 15 | 10 | 530 | 10 | 15 | 745 | 20 |
| Future Volume (vph) | 20 | 10 | 15 | 0 | 10 | 15 | 10 | 530 | 10 | 15 | 745 | 20 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 16 | 12 | 12 | 16 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.956 | | | 0.919 | | | 0.997 | | | 0.997 | |
| Flt Protected | | 0.978 | | | | | | 0.999 | | | 0.999 | |
| Satd. Flow (prot) | 0 | 1343 | 0 | 0 | 1320 | 0 | 0 | 1907 | 0 | 0 | 1894 | 0 |
| Flt Permitted | | 0.978 | | | | | | 0.999 | | | 0.999 | |
| Satd. Flow (perm) | 0 | 1343 | 0 | 0 | 1320 | 0 | 0 | 1907 | 0 | 0 | 1894 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 638 | | | 716 | | | 304 | | | 298 | |
| Travel Time (s) | | 14.5 | | | 16.3 | | | 6.9 | | | 6.8 | |
| Confl. Peds. (#/hr) | 23 | | 27 | 27 | | 23 | 117 | | 70 | 70 | | 117 |
| Confl. Bikes (#/hr) | | | | | | | | | 1 | | | 15 |
| Peak Hour Factor | 0.67 | 0.67 | 0.67 | 0.63 | 0.63 | 0.63 | 0.86 | 0.86 | 0.86 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% | 13% | 0% | 2% | 0% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | | | | | |
| Adj. Flow (vph) | 30 | 15 | 22 | 0 | 16 | 24 | 12 | 616 | 12 | 16 | 784 | 21 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 67 | 0 | 0 | 40 | 0 | 0 | 640 | 0 | 0 | 821 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 0.97 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 72.6% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |

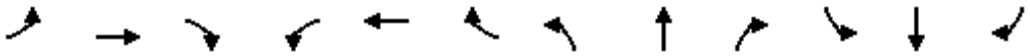


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 20 | 10 | 15 | 0 | 10 | 15 | 10 | 530 | 10 | 15 | 745 | 20 |
| Future Volume (Veh/h) | 20 | 10 | 15 | 0 | 10 | 15 | 10 | 530 | 10 | 15 | 745 | 20 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.67 | 0.67 | 0.67 | 0.63 | 0.63 | 0.63 | 0.86 | 0.86 | 0.86 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 30 | 15 | 22 | 0 | 16 | 24 | 12 | 616 | 12 | 16 | 784 | 21 |
| Pedestrians | | 117 | | | 70 | | | 27 | | | 23 | |
| Lane Width (ft) | | 10.0 | | | 10.0 | | | 16.0 | | | 16.0 | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Percent Blockage | | 8 | | | 5 | | | 3 | | | 3 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | 304 | | | 638 | |
| pX, platoon unblocked | 0.77 | 0.77 | 0.69 | 0.77 | 0.77 | 0.83 | 0.69 | | | 0.83 | | |
| vC, conflicting volume | 1644 | 1666 | 938 | 1599 | 1670 | 715 | 922 | | | 698 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1201 | 1228 | 686 | 1142 | 1234 | 558 | 662 | | | 537 | | |
| tC, single (s) | *4.0 | *4.0 | *4.0 | 7.1 | *4.0 | *4.0 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 88 | 95 | 95 | 100 | 94 | 96 | 98 | | | 98 | | |
| cM capacity (veh/h) | 255 | 274 | 422 | 102 | 273 | 579 | 593 | | | 825 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 67 | 40 | 640 | 821 |
| Volume Left | 30 | 0 | 12 | 16 |
| Volume Right | 22 | 24 | 12 | 21 |
| cSH | 298 | 399 | 593 | 825 |
| Volume to Capacity | 0.22 | 0.10 | 0.02 | 0.02 |
| Queue Length 95th (ft) | 21 | 8 | 2 | 1 |
| Control Delay (s) | 20.5 | 15.0 | 0.6 | 0.5 |
| Lane LOS | C | C | A | A |
| Approach Delay (s) | 20.5 | 15.0 | 0.6 | 0.5 |
| Approach LOS | C | C | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 1.8 | | | |
| Intersection Capacity Utilization | 72.6% | ICU Level of Service | C | |
| Analysis Period (min) | 15 | | | |

* User Entered Value



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 50 | 135 | 50 | 10 | 145 | 40 | 75 | 450 | 25 | 65 | 505 | 185 |
| Future Volume (vph) | 50 | 135 | 50 | 10 | 145 | 40 | 75 | 450 | 25 | 65 | 505 | 185 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 11 | 12 | 12 | 16 | 12 | 10 | 10 | 10 | 10 | 10 | 10 |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 0 | | 250 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 0 | | 1 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 0.95 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Ped Bike Factor | | 0.94 | | | 0.96 | | | 0.99 | | | 0.96 | |
| Frt | | 0.968 | | | 0.973 | | | 0.993 | | | 0.963 | |
| Flt Protected | | 0.990 | | | 0.998 | | | 0.993 | | | 0.996 | |
| Satd. Flow (prot) | 0 | 2592 | 0 | 0 | 1567 | 0 | 0 | 2830 | 0 | 0 | 2630 | 0 |
| Flt Permitted | | 0.725 | | | 0.979 | | | 0.615 | | | 0.751 | |
| Satd. Flow (perm) | 0 | 1871 | 0 | 0 | 1526 | 0 | 0 | 1746 | 0 | 0 | 1980 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 642 | | | 187 | | | 618 | | | 304 | |
| Travel Time (s) | | 14.6 | | | 4.3 | | | 14.0 | | | 6.9 | |
| Confl. Peds. (#/hr) | 61 | | 89 | 89 | | 61 | 154 | | 61 | 61 | | 154 |
| Confl. Bikes (#/hr) | | | 7 | | | 1 | | | 1 | | | 6 |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.88 | 0.88 | 0.88 | 0.86 | 0.86 | 0.86 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 2% | 9% | 0% | 0% | 6% | 0% | 0% | 0% | 3% | 13% | 0% | 1% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Adj. Flow (vph) | 56 | 152 | 56 | 11 | 165 | 45 | 87 | 523 | 29 | 70 | 543 | 199 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 264 | 0 | 0 | 221 | 0 | 0 | 639 | 0 | 0 | 812 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.27 | 1.14 | 1.14 | 1.12 | 1.14 | 1.25 | 1.33 | 1.25 | 1.25 | 1.33 | 1.25 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |

| Lane Group | Ø2 |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | |
| Future Volume (vph) | |
| Ideal Flow (vphpl) | |
| Lane Width (ft) | |
| Storage Length (ft) | |
| Storage Lanes | |
| Taper Length (ft) | |
| Lane Util. Factor | |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Right Turn on Red | |
| Satd. Flow (RTOR) | |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | |
| Heavy Vehicles (%) | |
| Parking (#/hr) | |
| Adj. Flow (vph) | |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | |
| Enter Blocked Intersection | |
| Lane Alignment | |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | |
| Turning Speed (mph) | |
| Number of Detectors | |
| Detector Template | |
| Leading Detector (ft) | |
| Trailing Detector (ft) | |
| Detector 1 Position(ft) | |
| Detector 1 Size(ft) | |
| Detector 1 Type | |
| Detector 1 Channel | |
| Detector 1 Extend (s) | |
| Detector 1 Queue (s) | |
| Detector 1 Delay (s) | |
| Detector 2 Position(ft) | |
| Detector 2 Size(ft) | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | D.P+P | NA | | Perm | NA | | D.P+P | NA | | Perm | NA | |
| Protected Phases | 3 | 3 4 | | | 4 | | 5 | 1 5 | | | 1 | |
| Permitted Phases | 4 | | | 4 | | | 1 | | | 1 | | |
| Detector Phase | 3 | 3 4 | | 4 | 4 | | 5 | 1 5 | | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | | | 10.0 | 10.0 | | 6.0 | | | 30.0 | 30.0 | |
| Minimum Split (s) | 10.0 | | | 14.0 | 14.0 | | 10.0 | | | 34.0 | 34.0 | |
| Total Split (s) | 11.0 | | | 34.0 | 34.0 | | 19.0 | | | 54.0 | 54.0 | |
| Total Split (%) | 7.7% | | | 23.9% | 23.9% | | 13.4% | | | 38.0% | 38.0% | |
| Maximum Green (s) | 6.0 | | | 30.0 | 30.0 | | 15.0 | | | 50.0 | 50.0 | |
| Yellow Time (s) | 3.0 | | | 3.0 | 3.0 | | 3.0 | | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | | | 1.0 | 1.0 | | 1.0 | | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | | | | | 0.0 | | | | | | 0.0 | |
| Total Lost Time (s) | | | | | 4.0 | | | | | | 4.0 | |
| Lead/Lag | Lead | | | Lag | Lag | | | | | Lead | Lead | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | | | 2.0 | 2.0 | | 2.0 | | | 2.0 | 2.0 | |
| Recall Mode | Max | | | Max | Max | | Max | | | Max | Max | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 35.2 | | | 30.2 | | | 65.4 | | | 50.3 | |
| Actuated g/C Ratio | | 0.26 | | | 0.22 | | | 0.48 | | | 0.37 | |
| v/c Ratio | | 0.52 | | | 0.66 | | | 0.67 | | | 1.12 | |
| Control Delay | | 46.3 | | | 61.0 | | | 28.8 | | | 112.0 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 46.3 | | | 61.0 | | | 28.8 | | | 112.0 | |
| LOS | | D | | | E | | | C | | | F | |
| Approach Delay | | 46.3 | | | 61.0 | | | 28.8 | | | 112.0 | |
| Approach LOS | | D | | | E | | | C | | | F | |

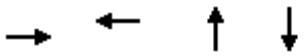
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 142 | | | |
| Actuated Cycle Length: 137.2 | | | |
| Natural Cycle: 105 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 1.12 | | | |
| Intersection Signal Delay: 69.8 | | Intersection LOS: E | |
| Intersection Capacity Utilization 86.6% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 7: L Street & E Broadway



| Lane Group | Ø2 |
|---|---|
| Detector 2 Type | |
| Detector 2 Channel | |
| Detector 2 Extend (s) | |
| Turn Type | |
| Protected Phases | 2 |
| Permitted Phases | |
| Detector Phase | |
| Switch Phase | |
| Minimum Initial (s) | 4.0 |
| Minimum Split (s) | 24.0 |
| Total Split (s) | 24.0 |
| Total Split (%) | 17% |
| Maximum Green (s) | 20.0 |
| Yellow Time (s) | 3.0 |
| All-Red Time (s) | 1.0 |
| Lost Time Adjust (s) | |
| Total Lost Time (s) | |
| Lead/Lag | Lag |
| Lead-Lag Optimize? | |
| Vehicle Extension (s) | 2.0 |
| Recall Mode | None |
| Walk Time (s) | 8.0 |
| Flash Dont Walk (s) | 12.0 |
| Pedestrian Calls (#/hr) | 46 |
| Act Effct Green (s) | |
| Actuated g/C Ratio | |
| v/c Ratio | |
| Control Delay | |
| Queue Delay | |
| Total Delay | |
| LOS | |
| Approach Delay | |
| Approach LOS | |

| Intersection Summary |
|---|

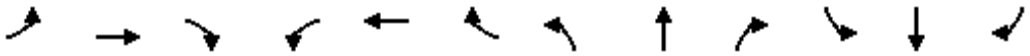


| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 264 | 221 | 639 | 812 |
| v/c Ratio | 0.52 | 0.66 | 0.67 | 1.12 |
| Control Delay | 46.3 | 61.0 | 28.8 | 112.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 46.3 | 61.0 | 28.8 | 112.0 |
| Queue Length 50th (ft) | 103 | 190 | 202 | ~467 |
| Queue Length 95th (ft) | 144 | 278 | 240 | #600 |
| Internal Link Dist (ft) | 562 | 107 | 538 | 224 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 511 | 335 | 950 | 725 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.52 | 0.66 | 0.67 | 1.12 |

Intersection Summary

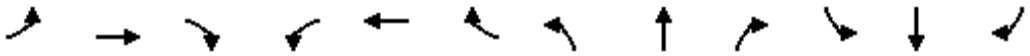
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



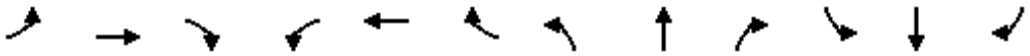
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 50 | 135 | 50 | 10 | 145 | 40 | 75 | 450 | 25 | 65 | 505 | 185 |
| Future Volume (vph) | 50 | 135 | 50 | 10 | 145 | 40 | 75 | 450 | 25 | 65 | 505 | 185 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 11 | 12 | 12 | 16 | 12 | 10 | 10 | 10 | 10 | 10 | 10 |
| Total Lost time (s) | | 5.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 0.95 | | | 1.00 | | | 0.95 | | | 0.95 | |
| Frpb, ped/bikes | | 0.96 | | | 0.97 | | | 1.00 | | | 0.97 | |
| Flpb, ped/bikes | | 0.99 | | | 0.99 | | | 1.00 | | | 1.00 | |
| Frt | | 0.97 | | | 0.97 | | | 0.99 | | | 0.96 | |
| Flt Protected | | 0.99 | | | 1.00 | | | 0.99 | | | 1.00 | |
| Satd. Flow (prot) | | 2569 | | | 1556 | | | 2826 | | | 2629 | |
| Flt Permitted | | 0.73 | | | 0.98 | | | 0.62 | | | 0.75 | |
| Satd. Flow (perm) | | 1883 | | | 1527 | | | 1751 | | | 1982 | |
| Peak-hour factor, PHF | 0.89 | 0.89 | 0.89 | 0.88 | 0.88 | 0.88 | 0.86 | 0.86 | 0.86 | 0.93 | 0.93 | 0.93 |
| Adj. Flow (vph) | 56 | 152 | 56 | 11 | 165 | 45 | 87 | 523 | 29 | 70 | 543 | 199 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 264 | 0 | 0 | 221 | 0 | 0 | 639 | 0 | 0 | 812 | 0 |
| Confl. Peds. (#/hr) | 61 | | 89 | 89 | | 61 | 154 | | 61 | 61 | | 154 |
| Confl. Bikes (#/hr) | | | 7 | | | 1 | | | 1 | | | 6 |
| Heavy Vehicles (%) | 2% | 9% | 0% | 0% | 6% | 0% | 0% | 0% | 3% | 13% | 0% | 1% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Turn Type | D.P+P | NA | | Perm | NA | | D.P+P | NA | | Perm | NA | |
| Protected Phases | 3 | 3 4 | | | 4 | | 5 | 1 5 | | | 1 | |
| Permitted Phases | 4 | | | 4 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 36.2 | | | 30.2 | | | 65.4 | | | 50.3 | |
| Effective Green, g (s) | | 36.2 | | | 30.2 | | | 65.4 | | | 50.3 | |
| Actuated g/C Ratio | | 0.26 | | | 0.22 | | | 0.47 | | | 0.36 | |
| Clearance Time (s) | | | | | 4.0 | | | | | | 4.0 | |
| Vehicle Extension (s) | | | | | 2.0 | | | | | | 2.0 | |
| Lane Grp Cap (vph) | | 523 | | | 333 | | | 946 | | | 721 | |
| v/s Ratio Prot | | c0.02 | | | | | | c0.07 | | | | |
| v/s Ratio Perm | | 0.11 | | | c0.14 | | | 0.25 | | | c0.41 | |
| v/c Ratio | | 0.50 | | | 0.66 | | | 0.68 | | | 1.13 | |
| Uniform Delay, d1 | | 43.3 | | | 49.3 | | | 28.1 | | | 43.9 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 3.5 | | | 10.0 | | | 3.9 | | | 73.9 | |
| Delay (s) | | 46.8 | | | 59.3 | | | 32.0 | | | 117.8 | |
| Level of Service | | D | | | E | | | C | | | F | |
| Approach Delay (s) | | 46.8 | | | 59.3 | | | 32.0 | | | 117.8 | |
| Approach LOS | | D | | | E | | | C | | | F | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 73.1 | HCM 2000 Level of Service | E |
| HCM 2000 Volume to Capacity ratio | 0.77 | | |
| Actuated Cycle Length (s) | 138.1 | Sum of lost time (s) | 21.0 |
| Intersection Capacity Utilization | 86.6% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 20 | 185 | 0 | 0 | 185 | 5 | 45 | 10 | 15 | 5 | 0 | 50 |
| Future Volume (vph) | 20 | 185 | 0 | 0 | 185 | 5 | 45 | 10 | 15 | 5 | 0 | 50 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 13 | 12 | 10 | 10 | 10 | 12 | 16 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | | | 0.996 | | | 0.908 | | | 0.877 | |
| Flt Protected | | 0.995 | | | | | 0.950 | | | | 0.996 | |
| Satd. Flow (prot) | 0 | 1459 | 0 | 0 | 1554 | 0 | 1338 | 1242 | 0 | 0 | 1496 | 0 |
| Flt Permitted | | 0.995 | | | | | 0.950 | | | | 0.996 | |
| Satd. Flow (perm) | 0 | 1459 | 0 | 0 | 1554 | 0 | 1338 | 1242 | 0 | 0 | 1496 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 1822 | | | 540 | | | 382 | | | 354 | |
| Travel Time (s) | | 41.4 | | | 12.3 | | | 8.7 | | | 8.0 | |
| Confl. Peds. (#/hr) | 8 | | 18 | 18 | | 8 | 13 | | 28 | 28 | | 13 |
| Confl. Bikes (#/hr) | | | 5 | | | 2 | | | 1 | | | |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.88 | 0.88 | 0.88 | 0.81 | 0.81 | 0.81 | 0.70 | 0.70 | 0.70 |
| Heavy Vehicles (%) | 32% | 2% | 0% | 0% | 2% | 0% | 2% | 13% | 0% | 0% | 0% | 2% |
| Parking (#/hr) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Adj. Flow (vph) | 24 | 218 | 0 | 0 | 210 | 6 | 56 | 12 | 19 | 7 | 0 | 71 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 242 | 0 | 0 | 216 | 0 | 56 | 31 | 0 | 0 | 78 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 10 | | | 10 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.30 | 1.14 | 1.14 | 1.25 | 1.14 | 1.42 | 1.42 | 1.25 | 1.14 | 1.12 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 46.1% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 20 | 185 | 0 | 0 | 185 | 5 | 45 | 10 | 15 | 5 | 0 | 50 |
| Future Volume (Veh/h) | 20 | 185 | 0 | 0 | 185 | 5 | 45 | 10 | 15 | 5 | 0 | 50 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.88 | 0.88 | 0.88 | 0.81 | 0.81 | 0.81 | 0.70 | 0.70 | 0.70 |
| Hourly flow rate (vph) | 24 | 218 | 0 | 0 | 210 | 6 | 56 | 12 | 19 | 7 | 0 | 71 |
| Pedestrians | | 13 | | | 28 | | | 18 | | | 8 | |
| Lane Width (ft) | | 12.0 | | | 13.0 | | | 10.0 | | | 16.0 | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Percent Blockage | | 1 | | | 3 | | | 1 | | | 1 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 540 | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 224 | | | 236 | | | 581 | 508 | 264 | 540 | 505 | 234 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 224 | | | 236 | | | 581 | 508 | 264 | 540 | 505 | 234 |
| tC, single (s) | 4.4 | | | 4.1 | | | *6.5 | 6.6 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.5 | | | 2.2 | | | 3.5 | 4.1 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 100 | | | 86 | 97 | 97 | 98 | 100 | 91 |
| cM capacity (veh/h) | 1176 | | | 1326 | | | 404 | 434 | 750 | 407 | 453 | 789 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | SB 1 |
|---|---|---|---|---|---|
| Volume Total | 242 | 216 | 56 | 31 | 78 |
| Volume Left | 24 | 0 | 56 | 0 | 7 |
| Volume Right | 0 | 6 | 0 | 19 | 71 |
| cSH | 1176 | 1700 | 404 | 585 | 728 |
| Volume to Capacity | 0.02 | 0.13 | 0.14 | 0.05 | 0.11 |
| Queue Length 95th (ft) | 2 | 0 | 12 | 4 | 9 |
| Control Delay (s) | 1.0 | 0.0 | 15.3 | 11.5 | 10.5 |
| Lane LOS | A | | C | B | B |
| Approach Delay (s) | 1.0 | 0.0 | 14.0 | | 10.5 |
| Approach LOS | | | B | | B |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 3.6 | | | |
| Intersection Capacity Utilization | 46.1% | ICU Level of Service | | A |
| Analysis Period (min) | 15 | | | |

* User Entered Value



| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 385 | 0 | 0 | 180 | 35 | 20 |
| Future Volume (vph) | 385 | 0 | 0 | 180 | 35 | 20 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 13 | 12 | 12 | 13 | 10 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | | | | | 0.950 | |
| Flt Protected | | | | | 0.969 | |
| Satd. Flow (prot) | 1750 | 0 | 0 | 1667 | 1442 | 0 |
| Flt Permitted | | | | | 0.969 | |
| Satd. Flow (perm) | 1750 | 0 | 0 | 1667 | 1442 | 0 |
| Link Speed (mph) | 30 | | | 30 | 30 | |
| Link Distance (ft) | 576 | | | 561 | 457 | |
| Travel Time (s) | 13.1 | | | 12.8 | 10.4 | |
| Confl. Peds. (#/hr) | | 13 | 13 | | 134 | 51 |
| Confl. Bikes (#/hr) | | 17 | | | | 2 |
| Peak Hour Factor | 0.85 | 0.85 | 0.88 | 0.88 | 0.81 | 0.81 |
| Heavy Vehicles (%) | 1% | 0% | 0% | 6% | 3% | 0% |
| Adj. Flow (vph) | 453 | 0 | 0 | 205 | 43 | 25 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 453 | 0 | 0 | 205 | 68 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(ft) | 0 | | | 0 | 10 | |
| Link Offset(ft) | 0 | | | 0 | 0 | |
| Crosswalk Width(ft) | 16 | | | 16 | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.10 | 1.14 | 1.14 | 1.10 | 1.25 | 1.14 |
| Turning Speed (mph) | | 9 | 15 | | 15 | 9 |
| Sign Control | Free | | | Free | Stop | |

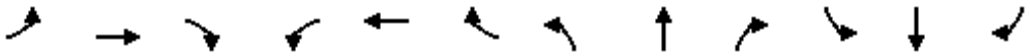
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 41.0% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 385 | 0 | 0 | 180 | 35 | 20 |
| Future Volume (Veh/h) | 385 | 0 | 0 | 180 | 35 | 20 |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.85 | 0.85 | 0.88 | 0.88 | 0.81 | 0.81 |
| Hourly flow rate (vph) | 453 | 0 | 0 | 205 | 43 | 25 |
| Pedestrians | 134 | | | 51 | 13 | |
| Lane Width (ft) | 13.0 | | | 13.0 | 10.0 | |
| Walking Speed (ft/s) | 4.0 | | | 4.0 | 4.0 | |
| Percent Blockage | 12 | | | 5 | 1 | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | None | | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | 576 | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | | | 466 | | 805 | 517 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 466 | | 805 | 517 |
| tC, single (s) | | | 4.1 | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.2 | | 3.5 | 3.3 |
| p0 queue free % | | | 100 | | 86 | 95 |
| cM capacity (veh/h) | | | 1096 | | 305 | 532 |

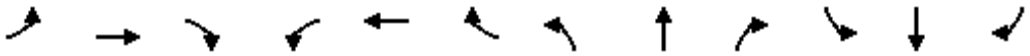
| Direction, Lane # | EB 1 | WB 1 | NB 1 |
|---|---|---|---|
| Volume Total | 453 | 205 | 68 |
| Volume Left | 0 | 0 | 43 |
| Volume Right | 0 | 0 | 25 |
| cSH | 1700 | 1700 | 362 |
| Volume to Capacity | 0.27 | 0.12 | 0.19 |
| Queue Length 95th (ft) | 0 | 0 | 17 |
| Control Delay (s) | 0.0 | 0.0 | 17.2 |
| Lane LOS | | | C |
| Approach Delay (s) | 0.0 | 0.0 | 17.2 |
| Approach LOS | | | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.6 | | |
| Intersection Capacity Utilization | 41.0% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 25 | 370 | 0 | 0 | 155 | 80 | 35 | 35 | 10 | 330 | 0 | 60 |
| Future Volume (vph) | 25 | 370 | 0 | 0 | 155 | 80 | 35 | 35 | 10 | 330 | 0 | 60 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 15 | 12 | 12 | 16 | 12 | 12 | 16 | 12 | 12 | 14 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | | | 0.954 | | | 0.984 | | | 0.979 | |
| Flt Protected | | 0.997 | | | | | | 0.978 | | | 0.959 | |
| Satd. Flow (prot) | 0 | 1630 | 0 | 0 | 1795 | 0 | 0 | 1772 | 0 | 0 | 1705 | 0 |
| Flt Permitted | | 0.997 | | | | | | 0.978 | | | 0.959 | |
| Satd. Flow (perm) | 0 | 1630 | 0 | 0 | 1795 | 0 | 0 | 1772 | 0 | 0 | 1705 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 848 | | | 1822 | | | 402 | | | 2052 | |
| Travel Time (s) | | 19.3 | | | 41.4 | | | 9.1 | | | 46.6 | |
| Confl. Peds. (#/hr) | 4 | | | 5 | | 4 | 1 | | 24 | 24 | | 1 |
| Confl. Bikes (#/hr) | | | 5 | | | 1 | | | 1 | | | 5 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.93 | 0.93 | 0.93 | 0.87 | 0.87 | 0.87 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 12% | 3% | 0% | 0% | 3% | 3% | 3% | 9% | 0% | 0% | 0% | 3% |
| Parking (#/hr) | | 0 | 0 | | | | | | | | | |
| Adj. Flow (vph) | 28 | 420 | 0 | 0 | 167 | 86 | 40 | 40 | 11 | 355 | 0 | 65 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 448 | 0 | 0 | 253 | 0 | 0 | 91 | 0 | 0 | 420 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.16 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 1.05 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |

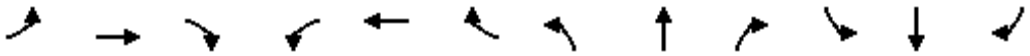
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 78.9% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 25 | 370 | 0 | 0 | 155 | 80 | 35 | 35 | 10 | 330 | 0 | 60 |
| Future Volume (Veh/h) | 25 | 370 | 0 | 0 | 155 | 80 | 35 | 35 | 10 | 330 | 0 | 60 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.93 | 0.93 | 0.93 | 0.87 | 0.87 | 0.87 | 0.93 | 0.93 | 0.93 |
| Hourly flow rate (vph) | 28 | 420 | 0 | 0 | 167 | 86 | 40 | 40 | 11 | 355 | 0 | 65 |
| Pedestrians | | 1 | | | 24 | | | 5 | | | 4 | |
| Lane Width (ft) | | 15.0 | | | 16.0 | | | 16.0 | | | 14.0 | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Percent Blockage | | 0 | | | 3 | | | 1 | | | 0 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 257 | | | 425 | | | 757 | 738 | 449 | 745 | 695 | 215 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 257 | | | 425 | | | 757 | 738 | 449 | 745 | 695 | 215 |
| tC, single (s) | 4.2 | | | 4.1 | | | 7.1 | 6.6 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.3 | | | 2.2 | | | 3.5 | 4.1 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 100 | | | 86 | 88 | 98 | 0 | 100 | 92 |
| cM capacity (veh/h) | 1247 | | | 1139 | | | 288 | 327 | 594 | 280 | 357 | 818 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 448 | 253 | 91 | 420 |
| Volume Left | 28 | 0 | 40 | 355 |
| Volume Right | 0 | 86 | 11 | 65 |
| cSH | 1247 | 1139 | 325 | 312 |
| Volume to Capacity | 0.02 | 0.00 | 0.28 | 1.35 |
| Queue Length 95th (ft) | 2 | 0 | 28 | 526 |
| Control Delay (s) | 0.7 | 0.0 | 20.3 | 209.1 |
| Lane LOS | A | | C | F |
| Approach Delay (s) | 0.7 | 0.0 | 20.3 | 209.1 |
| Approach LOS | | | C | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 74.3 | | |
| Intersection Capacity Utilization | 78.9% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 15 | 20 | 0 | 5 | 20 | 40 | 20 | 495 | 15 | 20 | 490 | 15 |
| Future Volume (vph) | 15 | 20 | 0 | 5 | 20 | 40 | 20 | 495 | 15 | 20 | 490 | 15 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | 0.97 | | | 0.91 | | | 1.00 | | | 0.99 | |
| Frt | | | | | 0.917 | | | 0.996 | | | 0.996 | |
| Flt Protected | | 0.979 | | | 0.996 | | | 0.998 | | | 0.998 | |
| Satd. Flow (prot) | 0 | 1406 | 0 | 0 | 1201 | 0 | 0 | 1408 | 0 | 0 | 1408 | 0 |
| Flt Permitted | | 0.880 | | | 0.980 | | | 0.974 | | | 0.974 | |
| Satd. Flow (perm) | 0 | 1223 | 0 | 0 | 1172 | 0 | 0 | 1371 | 0 | 0 | 1373 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | 66 | | | 2 | | | 2 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 659 | | | 649 | | | 380 | | | 618 | |
| Travel Time (s) | | 15.0 | | | 14.8 | | | 8.6 | | | 14.0 | |
| Confl. Peds. (#/hr) | 33 | | 29 | 29 | | 33 | 143 | | 60 | 60 | | 143 |
| Confl. Bikes (#/hr) | | | | | | | | | 1 | | | 7 |
| Peak Hour Factor | 0.80 | 0.80 | 0.80 | 0.52 | 0.52 | 0.52 | 0.95 | 0.95 | 0.95 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% | 8% | 0% | 1% | 0% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Adj. Flow (vph) | 19 | 25 | 0 | 10 | 38 | 77 | 21 | 521 | 16 | 20 | 500 | 15 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 44 | 0 | 0 | 125 | 0 | 0 | 558 | 0 | 0 | 535 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |

| Lane Group | Ø2 |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | |
| Future Volume (vph) | |
| Ideal Flow (vphpl) | |
| Lane Width (ft) | |
| Lane Util. Factor | |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Right Turn on Red | |
| Satd. Flow (RTOR) | |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | |
| Heavy Vehicles (%) | |
| Parking (#/hr) | |
| Adj. Flow (vph) | |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | |
| Enter Blocked Intersection | |
| Lane Alignment | |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | |
| Turning Speed (mph) | |
| Number of Detectors | |
| Detector Template | |
| Leading Detector (ft) | |
| Trailing Detector (ft) | |
| Detector 1 Position(ft) | |
| Detector 1 Size(ft) | |
| Detector 1 Type | |
| Detector 1 Channel | |
| Detector 1 Extend (s) | |
| Detector 1 Queue (s) | |
| Detector 1 Delay (s) | |
| Detector 2 Position(ft) | |
| Detector 2 Size(ft) | |
| Detector 2 Type | |
| Detector 2 Channel | |
| Detector 2 Extend (s) | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Detector Phase | 5 | 5 | | 5 | 5 | | 1 | 1 | | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | |
| Minimum Split (s) | 12.0 | 12.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Total Split (s) | 18.0 | 18.0 | | 18.0 | 18.0 | | 54.0 | 54.0 | | 54.0 | 54.0 | |
| Total Split (%) | 17.6% | 17.6% | | 17.6% | 17.6% | | 52.9% | 52.9% | | 52.9% | 52.9% | |
| Maximum Green (s) | 14.0 | 14.0 | | 14.0 | 14.0 | | 50.0 | 50.0 | | 50.0 | 50.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Lost Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lead/Lag | | | | | | | Lead | Lead | | Lead | Lead | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | Max | Max | | Max | Max | | Max | Max | | Max | Max | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 14.3 | | | 14.3 | | | 51.0 | | | 51.0 | |
| Actuated g/C Ratio | | 0.15 | | | 0.15 | | | 0.53 | | | 0.53 | |
| v/c Ratio | | 0.24 | | | 0.54 | | | 0.77 | | | 0.73 | |
| Control Delay | | 43.4 | | | 31.1 | | | 29.5 | | | 27.7 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 43.4 | | | 31.1 | | | 29.5 | | | 27.7 | |
| LOS | | D | | | C | | | C | | | C | |
| Approach Delay | | 43.4 | | | 31.1 | | | 29.5 | | | 27.7 | |
| Approach LOS | | D | | | C | | | C | | | C | |

**Intersection Summary**

Area Type: CBD
Cycle Length: 102
Actuated Cycle Length: 96
Natural Cycle: 80
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 29.4 Intersection LOS: C
Intersection Capacity Utilization 52.2% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 11: L Street & E 5th Street



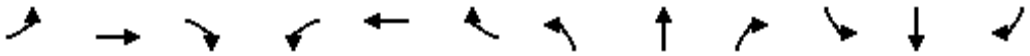
| Lane Group | Ø2 |
|---|---|
| Turn Type | |
| Protected Phases | 2 |
| Permitted Phases | |
| Detector Phase | |
| Switch Phase | |
| Minimum Initial (s) | 4.0 |
| Minimum Split (s) | 30.0 |
| Total Split (s) | 30.0 |
| Total Split (%) | 29% |
| Maximum Green (s) | 26.0 |
| Yellow Time (s) | 3.0 |
| All-Red Time (s) | 1.0 |
| Lost Time Adjust (s) | |
| Total Lost Time (s) | |
| Lead/Lag | Lag |
| Lead-Lag Optimize? | |
| Vehicle Extension (s) | 2.0 |
| Recall Mode | None |
| Walk Time (s) | 14.0 |
| Flash Dont Walk (s) | 12.0 |
| Pedestrian Calls (#/hr) | 66 |
| Act Effct Green (s) | |
| Actuated g/C Ratio | |
| v/c Ratio | |
| Control Delay | |
| Queue Delay | |
| Total Delay | |
| LOS | |
| Approach Delay | |
| Approach LOS | |

| Intersection Summary |
|---|

| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 44 | 125 | 558 | 535 |
| v/c Ratio | 0.24 | 0.54 | 0.77 | 0.73 |
| Control Delay | 43.4 | 31.1 | 29.5 | 27.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 43.4 | 31.1 | 29.5 | 27.7 |
| Queue Length 50th (ft) | 26 | 35 | 299 | 279 |
| Queue Length 95th (ft) | 53 | 33 | #509 | #451 |
| Internal Link Dist (ft) | 579 | 569 | 300 | 538 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 181 | 230 | 729 | 730 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.24 | 0.54 | 0.77 | 0.73 |

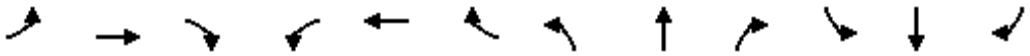
Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 15 | 20 | 0 | 5 | 20 | 40 | 20 | 495 | 15 | 20 | 490 | 15 |
| Future Volume (vph) | 15 | 20 | 0 | 5 | 20 | 40 | 20 | 495 | 15 | 20 | 490 | 15 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Total Lost time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Frpb, ped/bikes | | 1.00 | | | 0.92 | | | 1.00 | | | 1.00 | |
| Flpb, ped/bikes | | 0.97 | | | 0.99 | | | 1.00 | | | 1.00 | |
| Frt | | 1.00 | | | 0.92 | | | 1.00 | | | 1.00 | |
| Flt Protected | | 0.98 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | | 1362 | | | 1198 | | | 1406 | | | 1408 | |
| Flt Permitted | | 0.88 | | | 0.98 | | | 0.97 | | | 0.97 | |
| Satd. Flow (perm) | | 1225 | | | 1179 | | | 1371 | | | 1373 | |
| Peak-hour factor, PHF | 0.80 | 0.80 | 0.80 | 0.52 | 0.52 | 0.52 | 0.95 | 0.95 | 0.95 | 0.98 | 0.98 | 0.98 |
| Adj. Flow (vph) | 19 | 25 | 0 | 10 | 38 | 77 | 21 | 521 | 16 | 20 | 500 | 15 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 56 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| Lane Group Flow (vph) | 0 | 44 | 0 | 0 | 69 | 0 | 0 | 557 | 0 | 0 | 534 | 0 |
| Confl. Peds. (#/hr) | 33 | | 29 | 29 | | 33 | 143 | | 60 | 60 | | 143 |
| Confl. Bikes (#/hr) | | | | | | | | | 1 | | | 7 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% | 8% | 0% | 1% | 0% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 14.3 | | | 14.3 | | | 51.0 | | | 51.0 | |
| Effective Green, g (s) | | 14.3 | | | 14.3 | | | 51.0 | | | 51.0 | |
| Actuated g/C Ratio | | 0.15 | | | 0.15 | | | 0.53 | | | 0.53 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | | | 2.0 | | | 2.0 | |
| Lane Grp Cap (vph) | | 180 | | | 173 | | | 721 | | | 722 | |
| v/s Ratio Prot | | | | | | | | | | | | |
| v/s Ratio Perm | | 0.04 | | | c0.06 | | | c0.41 | | | 0.39 | |
| v/c Ratio | | 0.24 | | | 0.40 | | | 0.77 | | | 0.74 | |
| Uniform Delay, d1 | | 36.5 | | | 37.4 | | | 18.3 | | | 17.8 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 3.2 | | | 6.7 | | | 7.9 | | | 6.7 | |
| Delay (s) | | 39.7 | | | 44.1 | | | 26.2 | | | 24.5 | |
| Level of Service | | D | | | D | | | C | | | C | |
| Approach Delay (s) | | 39.7 | | | 44.1 | | | 26.2 | | | 24.5 | |
| Approach LOS | | D | | | D | | | C | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 27.7 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.53 | | |
| Actuated Cycle Length (s) | 96.9 | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 52.2% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 20 | 25 | 15 | 5 | 15 | 10 | 15 | 445 | 15 | 20 | 395 | 25 |
| Future Volume (vph) | 20 | 25 | 15 | 5 | 15 | 10 | 15 | 445 | 15 | 20 | 395 | 25 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 16 | 12 | 12 | 15 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | 0.96 | | | 0.97 | | | 1.00 | | | 0.99 | |
| Frt | | 0.966 | | | 0.956 | | | 0.996 | | | 0.992 | |
| Flt Protected | | 0.983 | | | 0.991 | | | 0.998 | | | 0.998 | |
| Satd. Flow (prot) | 0 | 1487 | 0 | 0 | 1514 | 0 | 0 | 1582 | 0 | 0 | 1548 | 0 |
| Flt Permitted | | 0.921 | | | 0.968 | | | 0.983 | | | 0.970 | |
| Satd. Flow (perm) | 0 | 1376 | 0 | 0 | 1458 | 0 | 0 | 1555 | 0 | 0 | 1503 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 17 | | | 11 | | | 4 | | | 8 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 602 | | | 677 | | | 676 | | | 535 | |
| Travel Time (s) | | 13.7 | | | 15.4 | | | 15.4 | | | 12.2 | |
| Confl. Peds. (#/hr) | 15 | | 38 | 38 | | 15 | 58 | | 32 | 32 | | 58 |
| Confl. Bikes (#/hr) | | | | | | | | | 1 | | | 2 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.89 | 0.89 | 0.89 | 0.87 | 0.87 | 0.87 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 10% | 12% | 0% | 0% | 8% | 0% | 0% | 0% | 0% | 0% | 1% | 4% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | | | | | |
| Adj. Flow (vph) | 23 | 28 | 17 | 6 | 17 | 11 | 17 | 511 | 17 | 22 | 439 | 28 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 68 | 0 | 0 | 34 | 0 | 0 | 545 | 0 | 0 | 489 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.12 | 1.14 | 1.14 | 1.16 | 1.14 | 1.14 | 1.25 | 1.14 | 1.14 | 1.25 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Detector Phase | 5 | 5 | | 5 | 5 | | 1 | 1 | | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 6.0 | 6.0 | | 6.0 | 6.0 | | 20.0 | 20.0 | | 20.0 | 20.0 | |
| Minimum Split (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 24.0 | 24.0 | | 24.0 | 24.0 | |
| Total Split (s) | 24.0 | 24.0 | | 24.0 | 24.0 | | 54.0 | 54.0 | | 54.0 | 54.0 | |
| Total Split (%) | 30.8% | 30.8% | | 30.8% | 30.8% | | 69.2% | 69.2% | | 69.2% | 69.2% | |
| Maximum Green (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 50.0 | 50.0 | | 50.0 | 50.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Lost Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | Max | Max | | Max | Max | | Max | Max | | Max | Max | |
| Walk Time (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | |
| Flash Dont Walk (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | |
| Pedestrian Calls (#/hr) | 13 | 13 | | 13 | 13 | | 23 | 23 | | 23 | 23 | |
| Act Effct Green (s) | | 20.0 | | | 20.0 | | | 50.0 | | | 50.0 | |
| Actuated g/C Ratio | | 0.26 | | | 0.26 | | | 0.64 | | | 0.64 | |
| v/c Ratio | | 0.19 | | | 0.09 | | | 0.55 | | | 0.51 | |
| Control Delay | | 19.6 | | | 17.6 | | | 10.2 | | | 9.6 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 19.6 | | | 17.6 | | | 10.2 | | | 9.6 | |
| LOS | | B | | | B | | | B | | | A | |
| Approach Delay | | 19.6 | | | 17.6 | | | 10.2 | | | 9.6 | |
| Approach LOS | | B | | | B | | | B | | | A | |

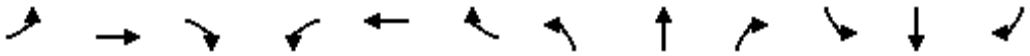
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 78 | | | |
| Actuated Cycle Length: 78 | | | |
| Natural Cycle: 50 | | | |
| Control Type: Semi Act-Uncoord | | | |
| Maximum v/c Ratio: 0.55 | | | |
| Intersection Signal Delay: 10.7 | | Intersection LOS: B | |
| Intersection Capacity Utilization 54.6% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 12: L Street & E 8th Street



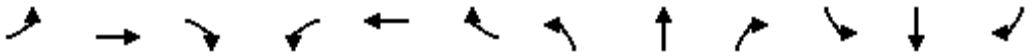
| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 68 | 34 | 545 | 489 |
| v/c Ratio | 0.19 | 0.09 | 0.55 | 0.51 |
| Control Delay | 19.6 | 17.6 | 10.2 | 9.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 19.6 | 17.6 | 10.2 | 9.6 |
| Queue Length 50th (ft) | 19 | 8 | 127 | 109 |
| Queue Length 95th (ft) | 49 | 29 | 194 | 178 |
| Internal Link Dist (ft) | 522 | 597 | 596 | 455 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 365 | 382 | 998 | 966 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.19 | 0.09 | 0.55 | 0.51 |

Intersection Summary



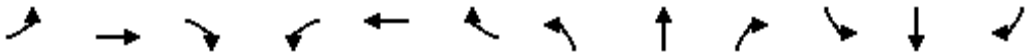
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 20 | 25 | 15 | 5 | 15 | 10 | 15 | 445 | 15 | 20 | 395 | 25 |
| Future Volume (vph) | 20 | 25 | 15 | 5 | 15 | 10 | 15 | 445 | 15 | 20 | 395 | 25 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 16 | 12 | 12 | 15 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Total Lost time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Frpb, ped/bikes | | 0.97 | | | 0.98 | | | 1.00 | | | 0.99 | |
| Flpb, ped/bikes | | 0.99 | | | 0.99 | | | 1.00 | | | 1.00 | |
| Frt | | 0.97 | | | 0.96 | | | 1.00 | | | 0.99 | |
| Flt Protected | | 0.98 | | | 0.99 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | | 1470 | | | 1493 | | | 1579 | | | 1546 | |
| Flt Permitted | | 0.92 | | | 0.97 | | | 0.98 | | | 0.97 | |
| Satd. Flow (perm) | | 1377 | | | 1458 | | | 1555 | | | 1504 | |
| Peak-hour factor, PHF | 0.88 | 0.88 | 0.88 | 0.89 | 0.89 | 0.89 | 0.87 | 0.87 | 0.87 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 23 | 28 | 17 | 6 | 17 | 11 | 17 | 511 | 17 | 22 | 439 | 28 |
| RTOR Reduction (vph) | 0 | 13 | 0 | 0 | 8 | 0 | 0 | 1 | 0 | 0 | 3 | 0 |
| Lane Group Flow (vph) | 0 | 55 | 0 | 0 | 26 | 0 | 0 | 544 | 0 | 0 | 486 | 0 |
| Confl. Peds. (#/hr) | 15 | | 38 | 38 | | 15 | 58 | | 32 | 32 | | 58 |
| Confl. Bikes (#/hr) | | | | | | | | | 1 | | | 2 |
| Heavy Vehicles (%) | 10% | 12% | 0% | 0% | 8% | 0% | 0% | 0% | 0% | 0% | 1% | 4% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 20.0 | | | 20.0 | | | 50.0 | | | 50.0 | |
| Effective Green, g (s) | | 20.0 | | | 20.0 | | | 50.0 | | | 50.0 | |
| Actuated g/C Ratio | | 0.26 | | | 0.26 | | | 0.64 | | | 0.64 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | | | 2.0 | | | 2.0 | |
| Lane Grp Cap (vph) | | 353 | | | 373 | | | 996 | | | 964 | |
| v/s Ratio Prot | | | | | | | | | | | | |
| v/s Ratio Perm | | c0.04 | | | 0.02 | | | c0.35 | | | 0.32 | |
| v/c Ratio | | 0.16 | | | 0.07 | | | 0.55 | | | 0.50 | |
| Uniform Delay, d1 | | 22.5 | | | 22.0 | | | 7.7 | | | 7.4 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 0.9 | | | 0.4 | | | 2.1 | | | 1.9 | |
| Delay (s) | | 23.4 | | | 22.3 | | | 9.9 | | | 9.3 | |
| Level of Service | | C | | | C | | | A | | | A | |
| Approach Delay (s) | | 23.4 | | | 22.3 | | | 9.9 | | | 9.3 | |
| Approach LOS | | C | | | C | | | A | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 10.8 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.43 | | |
| Actuated Cycle Length (s) | 78.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 54.6% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 5 | 5 | 0 | 0 | 15 | 15 | 5 | 440 | 5 | 15 | 355 | 20 |
| Future Volume (vph) | 5 | 5 | 0 | 0 | 15 | 15 | 5 | 440 | 5 | 15 | 355 | 20 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | 0.932 | | | 0.999 | | | 0.993 | |
| Flt Protected | | 0.976 | | | | | | 0.999 | | | 0.998 | |
| Satd. Flow (prot) | 0 | 1854 | 0 | 0 | 1771 | 0 | 0 | 1896 | 0 | 0 | 1883 | 0 |
| Flt Permitted | | 0.976 | | | | | | 0.999 | | | 0.998 | |
| Satd. Flow (perm) | 0 | 1854 | 0 | 0 | 1771 | 0 | 0 | 1896 | 0 | 0 | 1883 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 239 | | | 189 | | | 91 | | | 676 | |
| Travel Time (s) | | 5.4 | | | 4.3 | | | 2.1 | | | 15.4 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 5 | 5 | 0 | 0 | 16 | 16 | 5 | 478 | 5 | 16 | 386 | 22 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 10 | 0 | 0 | 32 | 0 | 0 | 488 | 0 | 0 | 424 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |

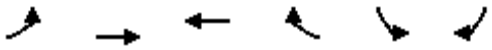
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 40.6% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |



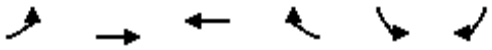
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 5 | 5 | 0 | 0 | 15 | 15 | 5 | 440 | 5 | 15 | 355 | 20 |
| Future Volume (Veh/h) | 5 | 5 | 0 | 0 | 15 | 15 | 5 | 440 | 5 | 15 | 355 | 20 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 5 | 5 | 0 | 0 | 16 | 16 | 5 | 478 | 5 | 16 | 386 | 22 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | 676 | |
| pX, platoon unblocked | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | | 0.91 | | | | | |
| vC, conflicting volume | 944 | 922 | 397 | 922 | 930 | 480 | 408 | | | 483 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 891 | 867 | 292 | 867 | 876 | 480 | 304 | | | 483 | | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 98 | 98 | 100 | 100 | 94 | 97 | 100 | | | 99 | | |
| cM capacity (veh/h) | 221 | 263 | 687 | 244 | 259 | 590 | 1158 | | | 1090 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 10 | 32 | 488 | 424 |
| Volume Left | 5 | 0 | 5 | 16 |
| Volume Right | 0 | 16 | 5 | 22 |
| cSH | 240 | 360 | 1158 | 1090 |
| Volume to Capacity | 0.04 | 0.09 | 0.00 | 0.01 |
| Queue Length 95th (ft) | 3 | 7 | 0 | 1 |
| Control Delay (s) | 20.6 | 16.0 | 0.1 | 0.5 |
| Lane LOS | C | C | A | A |
| Approach Delay (s) | 20.6 | 16.0 | 0.1 | 0.5 |
| Approach LOS | C | C | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 1.0 | | | |
| Intersection Capacity Utilization | 40.6% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR | Ø2 |
|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | |
| Traffic Volume (vph) | 440 | 385 | 350 | 10 | 0 | 0 | |
| Future Volume (vph) | 440 | 385 | 350 | 10 | 0 | 0 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Lane Util. Factor | 0.95 | 0.95 | 0.95 | 0.95 | 1.00 | 1.00 | |
| Frt | | | 0.996 | | | | |
| Flt Protected | | 0.974 | | | | | |
| Satd. Flow (prot) | 0 | 3516 | 3596 | 0 | 0 | 0 | |
| Flt Permitted | | 0.640 | | | | | |
| Satd. Flow (perm) | 0 | 2310 | 3596 | 0 | 0 | 0 | |
| Right Turn on Red | | | | Yes | | Yes | |
| Satd. Flow (RTOR) | | | 6 | | | | |
| Link Speed (mph) | | 30 | 30 | | 30 | | |
| Link Distance (ft) | | 336 | 398 | | 184 | | |
| Travel Time (s) | | 7.6 | 9.0 | | 4.2 | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | |
| Adj. Flow (vph) | 478 | 418 | 380 | 11 | 0 | 0 | |
| Shared Lane Traffic (%) | | | | | | | |
| Lane Group Flow (vph) | 0 | 896 | 391 | 0 | 0 | 0 | |
| Enter Blocked Intersection | No | No | No | No | No | No | |
| Lane Alignment | Left | Left | Left | Right | Left | Right | |
| Median Width(ft) | | 0 | 0 | | 0 | | |
| Link Offset(ft) | | 0 | 0 | | 0 | | |
| Crosswalk Width(ft) | | 16 | 16 | | 16 | | |
| Two way Left Turn Lane | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Turning Speed (mph) | 15 | | | 9 | 15 | 9 | |
| Number of Detectors | 1 | 2 | 2 | | | | |
| Detector Template | Left | Thru | Thru | | | | |
| Leading Detector (ft) | 20 | 100 | 100 | | | | |
| Trailing Detector (ft) | 0 | 0 | 0 | | | | |
| Detector 1 Position(ft) | 0 | 0 | 0 | | | | |
| Detector 1 Size(ft) | 20 | 6 | 6 | | | | |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | | | | |
| Detector 1 Channel | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | | | | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | | | | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | | | | |
| Detector 2 Position(ft) | | 94 | 94 | | | | |
| Detector 2 Size(ft) | | 6 | 6 | | | | |
| Detector 2 Type | | Cl+Ex | Cl+Ex | | | | |
| Detector 2 Channel | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | 0.0 | | | | |
| Turn Type | Perm | NA | NA | | | | |
| Protected Phases | | 1 | 1 | | | | 2 |
| Permitted Phases | 1 | | | | | | |
| Detector Phase | 1 | 1 | 1 | | | | |
| Switch Phase | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | 8.0 | | | | 10.0 |



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR | Ø2 |
|---|---|---|---|---|---|---|---|
| Minimum Split (s) | 25.4 | 25.4 | 25.4 | | | | 25.0 |
| Total Split (s) | 70.0 | 70.0 | 70.0 | | | | 25.0 |
| Total Split (%) | 73.7% | 73.7% | 73.7% | | | | 26% |
| Maximum Green (s) | 62.6 | 62.6 | 62.6 | | | | 20.5 |
| Yellow Time (s) | 5.4 | 5.4 | 5.4 | | | | 3.5 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | | | 1.0 |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | | | |
| Total Lost Time (s) | | 7.4 | 7.4 | | | | |
| Lead/Lag | Lead | Lead | Lead | | | | Lag |
| Lead-Lag Optimize? | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | | | | 2.0 |
| Recall Mode | Max | Max | Max | | | | None |
| Walk Time (s) | | | | | | | 18.0 |
| Flash Dont Walk (s) | | | | | | | 1.0 |
| Pedestrian Calls (#/hr) | | | | | | | 28 |
| Act Effct Green (s) | | 83.6 | 83.6 | | | | |
| Actuated g/C Ratio | | 0.89 | 0.89 | | | | |
| v/c Ratio | | 0.44 | 0.12 | | | | |
| Control Delay | | 4.5 | 2.7 | | | | |
| Queue Delay | | 0.0 | 0.0 | | | | |
| Total Delay | | 4.5 | 2.7 | | | | |
| LOS | | A | A | | | | |
| Approach Delay | | 4.5 | 2.7 | | | | |
| Approach LOS | | A | A | | | | |

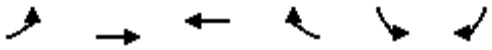
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 95 | | | |
| Actuated Cycle Length: 94.4 | | | |
| Natural Cycle: 60 | | | |
| Control Type: Semi Act-Uncoord | | | |
| Maximum v/c Ratio: 0.44 | | | |
| Intersection Signal Delay: 4.0 | | Intersection LOS: A | |
| Intersection Capacity Utilization 46.7% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 14: Day Blvd Ped



| Lane Group | EBT | WBT |
|---|---|---|
| Lane Group Flow (vph) | 896 | 391 |
| v/c Ratio | 0.44 | 0.12 |
| Control Delay | 4.5 | 2.7 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 4.5 | 2.7 |
| Queue Length 50th (ft) | 0 | 0 |
| Queue Length 95th (ft) | 178 | 54 |
| Internal Link Dist (ft) | 256 | 318 |
| Turn Bay Length (ft) | | |
| Base Capacity (vph) | 2047 | 3187 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.44 | 0.12 |

Intersection Summary



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 440 | 385 | 350 | 10 | 0 | 0 |
| Future Volume (vph) | 440 | 385 | 350 | 10 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 7.4 | 7.4 | | | |
| Lane Util. Factor | | 0.95 | 0.95 | | | |
| Frt | | 1.00 | 1.00 | | | |
| Flt Protected | | 0.97 | 1.00 | | | |
| Satd. Flow (prot) | | 3516 | 3595 | | | |
| Flt Permitted | | 0.64 | 1.00 | | | |
| Satd. Flow (perm) | | 2310 | 3595 | | | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 478 | 418 | 380 | 11 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 1 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 896 | 390 | 0 | 0 | 0 |
| Turn Type | Perm | NA | NA | | | |
| Protected Phases | | 1 | 1 | | | |
| Permitted Phases | 1 | | | | | |
| Actuated Green, G (s) | | 78.7 | 78.7 | | | |
| Effective Green, g (s) | | 78.7 | 78.7 | | | |
| Actuated g/C Ratio | | 0.81 | 0.81 | | | |
| Clearance Time (s) | | 7.4 | 7.4 | | | |
| Vehicle Extension (s) | | 2.0 | 2.0 | | | |
| Lane Grp Cap (vph) | | 1870 | 2910 | | | |
| v/s Ratio Prot | | | 0.11 | | | |
| v/s Ratio Perm | | c0.39 | | | | |
| v/c Ratio | | 0.48 | 0.13 | | | |
| Uniform Delay, d1 | | 2.9 | 2.0 | | | |
| Progression Factor | | 1.00 | 1.00 | | | |
| Incremental Delay, d2 | | 0.9 | 0.1 | | | |
| Delay (s) | | 3.8 | 2.1 | | | |
| Level of Service | | A | A | | | |
| Approach Delay (s) | | 3.8 | 2.1 | | 0.0 | |
| Approach LOS | | A | A | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 3.2 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.44 | | |
| Actuated Cycle Length (s) | 97.2 | Sum of lost time (s) | 11.9 |
| Intersection Capacity Utilization | 46.7% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBU | SBL | SBT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 140 | 96 | 5 | 147 | 53 | 113 | 10 | 914 | 328 | 5 | 349 | 471 |
| Future Volume (vph) | 140 | 96 | 5 | 147 | 53 | 113 | 10 | 914 | 328 | 5 | 349 | 471 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 14 | 12 | 12 | 13 | 16 | 10 | 11 | 12 | 12 | 13 | 12 |
| Storage Length (ft) | 0 | | 0 | 350 | | 0 | 70 | | 0 | | 350 | |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 0 | | 1 | |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | | 25 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 1.00 | 0.95 |
| Ped Bike Factor | | 0.98 | | | 0.99 | | 0.95 | 0.99 | | | 1.00 | 0.96 |
| Frt | | 0.997 | | | | 0.850 | | 0.960 | | | | 0.968 |
| Flt Protected | | 0.972 | | | 0.965 | | 0.950 | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 1594 | 0 | 0 | 1541 | 1458 | 1516 | 2793 | 0 | 0 | 1556 | 2716 |
| Flt Permitted | | 0.633 | | | 0.626 | | 0.155 | | | | 0.155 | |
| Satd. Flow (perm) | 0 | 1021 | 0 | 0 | 991 | 1458 | 236 | 2793 | 0 | 0 | 253 | 2716 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | |
| Satd. Flow (RTOR) | | 1 | | | | 131 | | 51 | | | | 43 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | | 30 |
| Link Distance (ft) | | 745 | | | 950 | | | 1523 | | | | 585 |
| Travel Time (s) | | 16.9 | | | 21.6 | | | 34.6 | | | | 13.3 |
| Confl. Peds. (#/hr) | 32 | | 17 | 17 | | 32 | 127 | | 36 | | 36 | |
| Confl. Bikes (#/hr) | | | 7 | | | 3 | | | 7 | | | |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.86 | 0.86 | 0.86 | 0.89 | 0.89 | 0.89 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 11% | 11% | 0% | 8% | 18% | 13% | 0% | 8% | 2% | 0% | 8% | 13% |
| Adj. Flow (vph) | 165 | 113 | 6 | 171 | 62 | 131 | 11 | 1027 | 369 | 5 | 371 | 501 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 284 | 0 | 0 | 233 | 131 | 11 | 1396 | 0 | 0 | 376 | 638 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | R NA | Left | Left |
| Median Width(ft) | | 0 | | | 6 | | | 13 | | | | 17 |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | | 0 |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | | 16 |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.05 | 1.14 | 1.14 | 1.10 | 0.97 | 1.25 | 1.19 | 1.14 | 1.14 | 1.10 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 9 | 15 | |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | | 1 | 1 | 2 |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | | Left | Left | Thru |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | 20 | 20 | 100 | | 20 | 20 | 100 |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | 20 | 20 | 6 | | 20 | 20 | 6 |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | | 94 |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | | 6 |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | Cl+Ex |

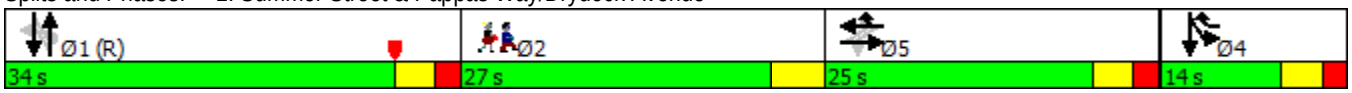


| Lane Group | SBR | Ø2 |
|---|---|---|
| Lane Configurations | | |
| Traffic Volume (vph) | 129 | |
| Future Volume (vph) | 129 | |
| Ideal Flow (vphpl) | 1900 | |
| Lane Width (ft) | 12 | |
| Storage Length (ft) | 0 | |
| Storage Lanes | 0 | |
| Taper Length (ft) | | |
| Lane Util. Factor | 0.95 | |
| Ped Bike Factor | | |
| Frt | | |
| Flt Protected | | |
| Satd. Flow (prot) | 0 | |
| Flt Permitted | | |
| Satd. Flow (perm) | 0 | |
| Right Turn on Red | Yes | |
| Satd. Flow (RTOR) | | |
| Link Speed (mph) | | |
| Link Distance (ft) | | |
| Travel Time (s) | | |
| Confl. Peds. (#/hr) | 127 | |
| Confl. Bikes (#/hr) | 12 | |
| Peak Hour Factor | 0.94 | |
| Heavy Vehicles (%) | 6% | |
| Adj. Flow (vph) | 137 | |
| Shared Lane Traffic (%) | | |
| Lane Group Flow (vph) | 0 | |
| Enter Blocked Intersection | No | |
| Lane Alignment | Right | |
| Median Width(ft) | | |
| Link Offset(ft) | | |
| Crosswalk Width(ft) | | |
| Two way Left Turn Lane | | |
| Headway Factor | 1.14 | |
| Turning Speed (mph) | 9 | |
| Number of Detectors | | |
| Detector Template | | |
| Leading Detector (ft) | | |
| Trailing Detector (ft) | | |
| Detector 1 Position(ft) | | |
| Detector 1 Size(ft) | | |
| Detector 1 Type | | |
| Detector 1 Channel | | |
| Detector 1 Extend (s) | | |
| Detector 1 Queue (s) | | |
| Detector 1 Delay (s) | | |
| Detector 2 Position(ft) | | |
| Detector 2 Size(ft) | | |
| Detector 2 Type | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBU | SBL | SBT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | 0.0 |
| Turn Type | Perm | NA | | Perm | NA | pt+ov | Perm | NA | | D.Pm | D.P+P | NA |
| Protected Phases | | 5 | | | 5 | 5 4 | | 1 | | | 4 | 1 4 |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | 1 | |
| Detector Phase | 5 | 5 | | 5 | 5 | 5 4 | 1 | 1 | | 1 | 4 | 1 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | |
| Minimum Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | | 13.0 | 13.0 | | 13.0 | 13.0 | |
| Total Split (s) | 25.0 | 25.0 | | 25.0 | 25.0 | | 34.0 | 34.0 | | 34.0 | 14.0 | |
| Total Split (%) | 25.0% | 25.0% | | 25.0% | 25.0% | | 34.0% | 34.0% | | 34.0% | 14.0% | |
| Maximum Green (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 29.0 | 29.0 | | 29.0 | 9.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | 0.0 | 0.0 | | | 0.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | 5.0 | 5.0 | | | 5.0 | |
| Lead/Lag | | | | | | | Lead | Lead | | Lead | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | None | None | | None | None | | C-Max | C-Max | | C-Max | None | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 41.6 | | | 41.6 | 55.6 | 29.0 | 29.0 | | | 38.0 | 43.0 |
| Actuated g/C Ratio | | 0.42 | | | 0.42 | 0.56 | 0.29 | 0.29 | | | 0.38 | 0.43 |
| v/c Ratio | | 0.67 | | | 0.57 | 0.15 | 0.16 | 1.65 | | | 1.77 | 0.54 |
| Control Delay | | 36.2 | | | 32.9 | 3.9 | 33.7 | 324.4 | | | 383.9 | 21.6 |
| Queue Delay | | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | | | 0.0 | 0.0 |
| Total Delay | | 36.2 | | | 32.9 | 3.9 | 33.7 | 324.4 | | | 383.9 | 21.6 |
| LOS | | D | | | C | A | C | F | | | F | C |
| Approach Delay | | 36.2 | | | 22.5 | | | 322.1 | | | | 155.9 |
| Approach LOS | | D | | | C | | | F | | | | F |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 100 | | | |
| Actuated Cycle Length: 100 | | | |
| Offset: 0 (0%), Referenced to phase 1:NBSB, Start of Yellow | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 1.77 | | | |
| Intersection Signal Delay: 205.2 | | Intersection LOS: F | |
| Intersection Capacity Utilization 104.2% | | ICU Level of Service G | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 1: Summer Street & Pappas Way/Drydock Avenue





| Lane Group | SBR | Ø2 |
|---|---|---|
| Detector 2 Channel | | |
| Detector 2 Extend (s) | | |
| Turn Type | | |
| Protected Phases | | 2 |
| Permitted Phases | | |
| Detector Phase | | |
| Switch Phase | | |
| Minimum Initial (s) | | 4.0 |
| Minimum Split (s) | | 27.0 |
| Total Split (s) | | 27.0 |
| Total Split (%) | | 27% |
| Maximum Green (s) | | 23.0 |
| Yellow Time (s) | | 4.0 |
| All-Red Time (s) | | 0.0 |
| Lost Time Adjust (s) | | |
| Total Lost Time (s) | | |
| Lead/Lag | | Lag |
| Lead-Lag Optimize? | | |
| Vehicle Extension (s) | | 2.0 |
| Recall Mode | | None |
| Walk Time (s) | | 7.0 |
| Flash Dont Walk (s) | | 16.0 |
| Pedestrian Calls (#/hr) | | 10 |
| Act Effct Green (s) | | |
| Actuated g/C Ratio | | |
| v/c Ratio | | |
| Control Delay | | |
| Queue Delay | | |
| Total Delay | | |
| LOS | | |
| Approach Delay | | |
| Approach LOS | | |

| Intersection Summary |
|---|

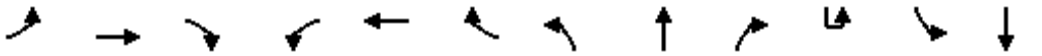


| Lane Group | EBT | WBT | WBR | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 284 | 233 | 131 | 11 | 1396 | 376 | 638 |
| v/c Ratio | 0.67 | 0.57 | 0.15 | 0.16 | 1.65 | 1.77 | 0.54 |
| Control Delay | 36.2 | 32.9 | 3.9 | 33.7 | 324.4 | 383.9 | 21.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 36.2 | 32.9 | 3.9 | 33.7 | 324.4 | 383.9 | 21.6 |
| Queue Length 50th (ft) | 128 | 99 | 0 | 5 | ~677 | ~313 | 143 |
| Queue Length 95th (ft) | #379 | #308 | 35 | 21 | #803 | #495 | 197 |
| Internal Link Dist (ft) | 665 | 870 | | | 1443 | | 505 |
| Turn Bay Length (ft) | | | | 70 | | 350 | |
| Base Capacity (vph) | 425 | 412 | 868 | 68 | 846 | 213 | 1192 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.67 | 0.57 | 0.15 | 0.16 | 1.65 | 1.77 | 0.54 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBU | SBL | SBT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 140 | 96 | 5 | 147 | 53 | 113 | 10 | 914 | 328 | 5 | 349 | 471 |
| Future Volume (vph) | 140 | 96 | 5 | 147 | 53 | 113 | 10 | 914 | 328 | 5 | 349 | 471 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 14 | 12 | 12 | 13 | 16 | 10 | 11 | 12 | 12 | 13 | 12 |
| Total Lost time (s) | | 5.0 | | | 5.0 | 5.0 | 5.0 | 5.0 | | | 5.0 | 5.0 |
| Lane Util. Factor | | 1.00 | | | 1.00 | 1.00 | 1.00 | 0.95 | | | 1.00 | 0.95 |
| Frpb, ped/bikes | | 1.00 | | | 1.00 | 1.00 | 1.00 | 0.98 | | | 1.00 | 0.96 |
| Flpb, ped/bikes | | 0.99 | | | 0.99 | 1.00 | 0.95 | 1.00 | | | 1.00 | 1.00 |
| Frt | | 1.00 | | | 1.00 | 0.85 | 1.00 | 0.96 | | | 1.00 | 0.97 |
| Flt Protected | | 0.97 | | | 0.96 | 1.00 | 0.95 | 1.00 | | | 0.95 | 1.00 |
| Satd. Flow (prot) | | 1580 | | | 1532 | 1458 | 1439 | 2790 | | | 1555 | 2708 |
| Flt Permitted | | 0.63 | | | 0.63 | 1.00 | 0.16 | 1.00 | | | 0.16 | 1.00 |
| Satd. Flow (perm) | | 1029 | | | 994 | 1458 | 235 | 2790 | | | 254 | 2708 |
| Peak-hour factor, PHF | 0.85 | 0.85 | 0.85 | 0.86 | 0.86 | 0.86 | 0.89 | 0.89 | 0.89 | 0.94 | 0.94 | 0.94 |
| Adj. Flow (vph) | 165 | 113 | 6 | 171 | 62 | 131 | 11 | 1027 | 369 | 5 | 371 | 501 |
| RTOR Reduction (vph) | 0 | 1 | 0 | 0 | 0 | 58 | 0 | 38 | 0 | 0 | 0 | 26 |
| Lane Group Flow (vph) | 0 | 283 | 0 | 0 | 233 | 73 | 11 | 1358 | 0 | 0 | 376 | 612 |
| Confl. Peds. (#/hr) | 32 | | 17 | 17 | | 32 | 127 | | 36 | | 36 | |
| Confl. Bikes (#/hr) | | | 7 | | | 3 | | | 7 | | | |
| Heavy Vehicles (%) | 11% | 11% | 0% | 8% | 18% | 13% | 0% | 8% | 2% | 0% | 8% | 13% |
| Turn Type | Perm | NA | | Perm | NA | pt+ov | Perm | NA | | D.Pm | D.P+P | NA |
| Protected Phases | | 5 | | | 5 | 5 4 | | 1 | | | 4 | 1 4 |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | 1 | |
| Actuated Green, G (s) | | 41.6 | | | 41.6 | 55.6 | 25.8 | 25.8 | | | 34.8 | 39.8 |
| Effective Green, g (s) | | 41.6 | | | 41.6 | 55.6 | 25.8 | 25.8 | | | 34.8 | 39.8 |
| Actuated g/C Ratio | | 0.42 | | | 0.42 | 0.56 | 0.26 | 0.26 | | | 0.35 | 0.40 |
| Clearance Time (s) | | 5.0 | | | 5.0 | | 5.0 | 5.0 | | | 5.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | | 2.0 | 2.0 | | | 2.0 | |
| Lane Grp Cap (vph) | | 428 | | | 413 | 810 | 60 | 719 | | | 205 | 1077 |
| v/s Ratio Prot | | | | | | 0.05 | | c0.49 | | | c0.16 | 0.23 |
| v/s Ratio Perm | | c0.28 | | | 0.23 | | 0.05 | | | | 0.47 | |
| v/c Ratio | | 0.66 | | | 0.56 | 0.09 | 0.18 | 1.89 | | | 1.83 | 0.57 |
| Uniform Delay, d1 | | 23.5 | | | 22.3 | 10.4 | 28.9 | 37.1 | | | 28.7 | 23.4 |
| Progression Factor | | 1.00 | | | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 | 1.00 |
| Incremental Delay, d2 | | 3.0 | | | 1.1 | 0.0 | 6.6 | 405.3 | | | 393.8 | 0.4 |
| Delay (s) | | 26.5 | | | 23.3 | 10.4 | 35.5 | 442.4 | | | 422.4 | 23.8 |
| Level of Service | | C | | | C | B | D | F | | | F | C |
| Approach Delay (s) | | 26.5 | | | 18.7 | | | 439.2 | | | | 171.6 |
| Approach LOS | | C | | | B | | | F | | | | F |

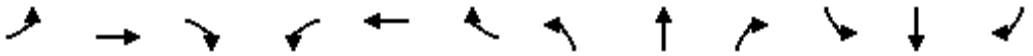
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 262.7 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 1.14 | | |
| Actuated Cycle Length (s) | 100.0 | Sum of lost time (s) | 19.0 |
| Intersection Capacity Utilization | 104.2% | ICU Level of Service | G |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



| Movement | SBR |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | 129 |
| Future Volume (vph) | 129 |
| Ideal Flow (vphpl) | 1900 |
| Lane Width | 12 |
| Total Lost time (s) | |
| Lane Util. Factor | |
| Frpb, ped/bikes | |
| Flpb, ped/bikes | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Peak-hour factor, PHF | 0.94 |
| Adj. Flow (vph) | 137 |
| RTOR Reduction (vph) | 0 |
| Lane Group Flow (vph) | 0 |
| Confl. Peds. (#/hr) | 127 |
| Confl. Bikes (#/hr) | 12 |
| Heavy Vehicles (%) | 6% |
| Turn Type | |
| Protected Phases | |
| Permitted Phases | |
| Actuated Green, G (s) | |
| Effective Green, g (s) | |
| Actuated g/C Ratio | |
| Clearance Time (s) | |
| Vehicle Extension (s) | |
| Lane Grp Cap (vph) | |
| v/s Ratio Prot | |
| v/s Ratio Perm | |
| v/c Ratio | |
| Uniform Delay, d1 | |
| Progression Factor | |
| Incremental Delay, d2 | |
| Delay (s) | |
| Level of Service | |
| Approach Delay (s) | |
| Approach LOS | |

| Intersection Summary |
|---|

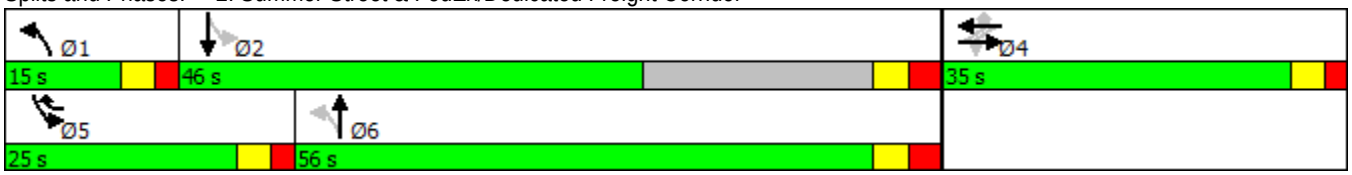


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 31 | 0 | 0 | 16 | 0 | 55 | 0 | 1164 | 21 | 94 | 551 | 0 |
| Future Volume (vph) | 31 | 0 | 0 | 16 | 0 | 55 | 0 | 1164 | 21 | 94 | 551 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 13 | 13 | 13 | 12 | 12 | 12 | 10 | 10 | 10 | 11 | 11 | 11 |
| Storage Length (ft) | 0 | | 0 | 0 | | 60 | 60 | | 0 | 120 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 50 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Frt | | | | | | 0.850 | | 0.997 | | | | |
| Flt Protected | | 0.950 | | | 0.950 | | | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1679 | 0 | 0 | 1624 | 727 | 1596 | 3023 | 0 | 785 | 2991 | 0 |
| Flt Permitted | | 0.746 | | | 0.735 | | | | | 0.132 | | |
| Satd. Flow (perm) | 0 | 1318 | 0 | 0 | 1257 | 727 | 1596 | 3023 | 0 | 109 | 2991 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | | 28 | | 2 | | | | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 203 | | | 352 | | | 675 | | | 1523 | |
| Travel Time (s) | | 4.6 | | | 8.0 | | | 15.3 | | | 34.6 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 100% | 0% | 0% | 0% | 100% | 5% | 0% |
| Adj. Flow (vph) | 34 | 0 | 0 | 17 | 0 | 60 | 0 | 1265 | 23 | 102 | 599 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 34 | 0 | 0 | 17 | 60 | 0 | 1288 | 0 | 102 | 599 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 12 | | | 11 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.10 | 1.10 | 1.10 | 1.14 | 1.14 | 1.14 | 1.25 | 1.25 | 1.25 | 1.19 | 1.19 | 1.19 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | 20 | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | 20 | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | pm+ov | pm+pt | NA | | pm+pt | NA | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Protected Phases | | 4 | | | 4 | 5 | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 4 | | | 4 | | 4 | 6 | 6 | | 2 | | |
| Detector Phase | 4 | 4 | | 4 | 4 | 5 | 1 | 6 | | 5 | 2 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 6.0 | 6.0 | | 6.0 | 6.0 | 6.0 | 6.0 | 10.0 | | 6.0 | 10.0 | |
| Minimum Split (s) | 26.0 | 26.0 | | 26.0 | 26.0 | 11.0 | 11.0 | 24.0 | | 11.0 | 24.0 | |
| Total Split (s) | 35.0 | 35.0 | | 35.0 | 35.0 | 25.0 | 15.0 | 56.0 | | 25.0 | 46.0 | |
| Total Split (%) | 30.2% | 30.2% | | 30.2% | 30.2% | 21.6% | 12.9% | 48.3% | | 21.6% | 39.7% | |
| Maximum Green (s) | 30.0 | 30.0 | | 30.0 | 30.0 | 20.0 | 10.0 | 50.0 | | 20.0 | 40.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 3.0 | | 2.0 | 3.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | 5.0 | 5.0 | 6.0 | | 5.0 | 6.0 | |
| Lead/Lag | | | | | | Lead | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | None | None | | None | None | None | None | Ped | | None | Max | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | | 7.0 | | | | |
| Flash Dont Walk (s) | 14.0 | 14.0 | | 14.0 | 14.0 | | | 9.0 | | | | |
| Pedestrian Calls (#/hr) | 10 | 10 | | 10 | 10 | | | 10 | | | | |
| Act Effct Green (s) | | 9.1 | | | 9.1 | 21.2 | | 46.2 | | 65.4 | 67.7 | |
| Actuated g/C Ratio | | 0.12 | | | 0.12 | 0.27 | | 0.58 | | 0.83 | 0.86 | |
| v/c Ratio | | 0.23 | | | 0.12 | 0.28 | | 0.73 | | 0.51 | 0.23 | |
| Control Delay | | 40.1 | | | 38.6 | 16.1 | | 18.8 | | 19.3 | 3.0 | |
| Queue Delay | | 0.0 | | | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | |
| Total Delay | | 40.1 | | | 38.6 | 16.1 | | 18.8 | | 19.3 | 3.0 | |
| LOS | | D | | | D | B | | B | | B | A | |
| Approach Delay | | 40.1 | | | 21.1 | | | 18.8 | | | 5.4 | |
| Approach LOS | | D | | | C | | | B | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 116 | | | |
| Actuated Cycle Length: 79.1 | | | |
| Natural Cycle: 90 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 0.73 | | | |
| Intersection Signal Delay: 14.7 | | Intersection LOS: B | |
| Intersection Capacity Utilization 64.2% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 2: Summer Street & FedEx/Dedicated Freight Corridor

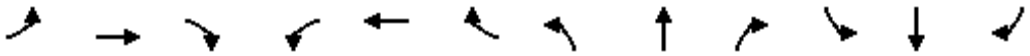




| Lane Group | EBT | WBT | WBR | NBT | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 34 | 17 | 60 | 1288 | 102 | 599 |
| v/c Ratio | 0.23 | 0.12 | 0.28 | 0.73 | 0.51 | 0.23 |
| Control Delay | 40.1 | 38.6 | 16.1 | 18.8 | 19.3 | 3.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 40.1 | 38.6 | 16.1 | 18.8 | 19.3 | 3.0 |
| Queue Length 50th (ft) | 17 | 8 | 12 | 247 | 9 | 32 |
| Queue Length 95th (ft) | 48 | 29 | 41 | #573 | 75 | 95 |
| Internal Link Dist (ft) | 123 | 272 | | 595 | | 1443 |
| Turn Bay Length (ft) | | | 60 | | 120 | |
| Base Capacity (vph) | 534 | 509 | 290 | 2044 | 273 | 2547 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.06 | 0.03 | 0.21 | 0.63 | 0.37 | 0.24 |

Intersection Summary

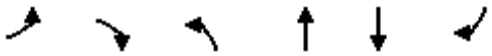
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 31 | 0 | 0 | 16 | 0 | 55 | 0 | 1164 | 21 | 94 | 551 | 0 |
| Future Volume (vph) | 31 | 0 | 0 | 16 | 0 | 55 | 0 | 1164 | 21 | 94 | 551 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 13 | 13 | 13 | 12 | 12 | 12 | 10 | 10 | 10 | 11 | 11 | 11 |
| Total Lost time (s) | | 5.0 | | | 5.0 | 5.0 | | 6.0 | | 5.0 | 6.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | 1.00 | | 0.95 | | 1.00 | 0.95 | |
| Frt | | 1.00 | | | 1.00 | 0.85 | | 1.00 | | 1.00 | 1.00 | |
| Flt Protected | | 0.95 | | | 0.95 | 1.00 | | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 1679 | | | 1624 | 727 | | 3024 | | 785 | 2991 | |
| Flt Permitted | | 0.75 | | | 0.73 | 1.00 | | 1.00 | | 0.13 | 1.00 | |
| Satd. Flow (perm) | | 1319 | | | 1257 | 727 | | 3024 | | 109 | 2991 | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 34 | 0 | 0 | 17 | 0 | 60 | 0 | 1265 | 23 | 102 | 599 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 22 | 0 | 1 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 34 | 0 | 0 | 17 | 38 | 0 | 1287 | 0 | 102 | 599 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 100% | 0% | 0% | 0% | 100% | 5% | 0% |
| Turn Type | Perm | NA | | Perm | NA | pm+ov | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | | 4 | | | 4 | 5 | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 4 | | | 4 | | 4 | 6 | 6 | | 2 | | |
| Actuated Green, G (s) | | 5.7 | | | 5.7 | 18.6 | | 46.5 | | 64.4 | 64.4 | |
| Effective Green, g (s) | | 5.7 | | | 5.7 | 18.6 | | 46.5 | | 64.4 | 64.4 | |
| Actuated g/C Ratio | | 0.07 | | | 0.07 | 0.23 | | 0.57 | | 0.79 | 0.79 | |
| Clearance Time (s) | | 5.0 | | | 5.0 | 5.0 | | 6.0 | | 5.0 | 6.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | 2.0 | | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | | 92 | | | 88 | 211 | | 1733 | | 194 | 2375 | |
| v/s Ratio Prot | | | | | | 0.03 | | c0.43 | | c0.08 | 0.20 | |
| v/s Ratio Perm | | c0.03 | | | 0.01 | 0.02 | | | | 0.33 | | |
| v/c Ratio | | 0.37 | | | 0.19 | 0.18 | | 0.74 | | 0.53 | 0.25 | |
| Uniform Delay, d1 | | 36.0 | | | 35.5 | 25.1 | | 12.9 | | 7.7 | 2.2 | |
| Progression Factor | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 0.9 | | | 0.4 | 0.2 | | 1.5 | | 1.2 | 0.3 | |
| Delay (s) | | 36.9 | | | 35.9 | 25.3 | | 14.4 | | 8.9 | 2.4 | |
| Level of Service | | D | | | D | C | | B | | A | A | |
| Approach Delay (s) | | 36.9 | | | 27.6 | | | 14.4 | | | 3.4 | |
| Approach LOS | | D | | | C | | | B | | | A | |

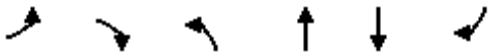
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 11.6 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.67 | | |
| Actuated Cycle Length (s) | 81.1 | Sum of lost time (s) | 16.0 |
| Intersection Capacity Utilization | 64.2% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 16 | 10 | 31 | 1092 | 551 | 47 |
| Future Volume (vph) | 16 | 10 | 31 | 1092 | 551 | 47 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 14 | 12 | 10 | 10 | 10 | 10 |
| Lane Util. Factor | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 0.95 |
| Ped Bike Factor | | | | | | |
| Frt | 0.947 | | | | 0.988 | |
| Flt Protected | 0.970 | | | 0.999 | | |
| Satd. Flow (prot) | 1437 | 0 | 0 | 2998 | 2915 | 0 |
| Flt Permitted | 0.970 | | | 0.999 | | |
| Satd. Flow (perm) | 1437 | 0 | 0 | 2998 | 2915 | 0 |
| Link Speed (mph) | 30 | | | 30 | 30 | |
| Link Distance (ft) | 362 | | | 355 | 675 | |
| Travel Time (s) | 8.2 | | | 8.1 | 15.3 | |
| Confl. Peds. (#/hr) | | | 126 | | | 126 |
| Confl. Bikes (#/hr) | | | | | | 4 |
| Peak Hour Factor | 0.64 | 0.64 | 0.97 | 0.97 | 0.89 | 0.89 |
| Heavy Vehicles (%) | 8% | 30% | 3% | 1% | 3% | 0% |
| Parking (#/hr) | | | 1 | | | 1 |
| Adj. Flow (vph) | 25 | 16 | 32 | 1126 | 619 | 53 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 41 | 0 | 0 | 1158 | 672 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(ft) | 14 | | | 10 | 10 | |
| Link Offset(ft) | 0 | | | 0 | 0 | |
| Crosswalk Width(ft) | 16 | | | 16 | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.05 | 1.14 | 1.25 | 1.25 | 1.25 | 1.25 |
| Turning Speed (mph) | 15 | 9 | 15 | | | 9 |
| Sign Control | Stop | | | Free | Free | |

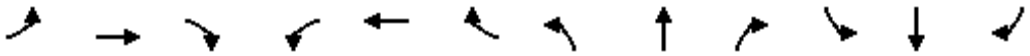
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 67.0% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 16 | 10 | 31 | 1092 | 551 | 47 |
| Future Volume (Veh/h) | 16 | 10 | 31 | 1092 | 551 | 47 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.64 | 0.64 | 0.97 | 0.97 | 0.89 | 0.89 |
| Hourly flow rate (vph) | 25 | 16 | 32 | 1126 | 619 | 53 |
| Pedestrians | 126 | | | | | |
| Lane Width (ft) | 14.0 | | | | | |
| Walking Speed (ft/s) | 4.0 | | | | | |
| Percent Blockage | 12 | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | 355 | 675 | |
| pX, platoon unblocked | 0.82 | | | | | |
| vC, conflicting volume | 1398 | 462 | 798 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 1052 | 462 | 798 | | | |
| tC, single (s) | 7.0 | 7.5 | 4.2 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.6 | 3.6 | 2.2 | | | |
| p0 queue free % | 83 | 96 | 96 | | | |
| cM capacity (veh/h) | 146 | 419 | 714 | | | |

| Direction, Lane # | EB 1 | NB 1 | NB 2 | SB 1 | SB 2 |
|---|---|---|---|---|---|
| Volume Total | 41 | 407 | 751 | 413 | 259 |
| Volume Left | 25 | 32 | 0 | 0 | 0 |
| Volume Right | 16 | 0 | 0 | 0 | 53 |
| cSH | 196 | 714 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.21 | 0.04 | 0.44 | 0.24 | 0.15 |
| Queue Length 95th (ft) | 19 | 4 | 0 | 0 | 0 |
| Control Delay (s) | 28.2 | 1.4 | 0.0 | 0.0 | 0.0 |
| Lane LOS | D | A | | | |
| Approach Delay (s) | 28.2 | 0.5 | | 0.0 | |
| Approach LOS | D | | | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 0.9 | | | |
| Intersection Capacity Utilization | 67.0% | ICU Level of Service | | C |
| Analysis Period (min) | 15 | | | |



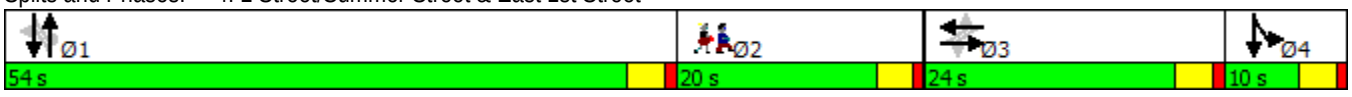
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 43 | 52 | 41 | 10 | 93 | 326 | 41 | 739 | 31 | 123 | 378 | 85 |
| Future Volume (vph) | 43 | 52 | 41 | 10 | 93 | 326 | 41 | 739 | 31 | 123 | 378 | 85 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 15 | 12 | 12 | 16 | 12 | 12 | 9 | 12 | 12 | 12 | 12 |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 100 | | 0 | 100 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Ped Bike Factor | | 0.98 | | | 0.97 | | | 0.99 | | | 0.98 | |
| Frt | | 0.959 | | | 0.897 | | | 0.994 | | | 0.978 | |
| Flt Protected | | 0.985 | | | 0.999 | | | 0.997 | | | 0.990 | |
| Satd. Flow (prot) | 0 | 1608 | 0 | 0 | 1661 | 0 | 0 | 2795 | 0 | 0 | 2910 | 0 |
| Flt Permitted | | 0.417 | | | 0.992 | | | 0.889 | | | 0.602 | |
| Satd. Flow (perm) | 0 | 679 | 0 | 0 | 1649 | 0 | 0 | 2487 | 0 | 0 | 1765 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 18 | | | 130 | | | 5 | | | 26 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 540 | | | 576 | | | 340 | | | 355 | |
| Travel Time (s) | | 12.3 | | | 13.1 | | | 7.7 | | | 8.1 | |
| Confl. Peds. (#/hr) | 16 | | 17 | 17 | | 16 | 104 | | 44 | 44 | | 104 |
| Confl. Bikes (#/hr) | | | 2 | | | 2 | | | 11 | | | 2 |
| Peak Hour Factor | 0.84 | 0.84 | 0.84 | 0.83 | 0.83 | 0.83 | 0.94 | 0.94 | 0.94 | 0.91 | 0.91 | 0.91 |
| Heavy Vehicles (%) | 12% | 6% | 7% | 17% | 1% | 1% | 2% | 2% | 38% | 15% | 3% | 8% |
| Adj. Flow (vph) | 51 | 62 | 49 | 12 | 112 | 393 | 44 | 786 | 33 | 135 | 415 | 93 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 162 | 0 | 0 | 517 | 0 | 0 | 863 | 0 | 0 | 643 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.01 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 1.30 | 1.14 | 1.14 | 1.14 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |

| Lane Group | Ø2 |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | |
| Future Volume (vph) | |
| Ideal Flow (vphpl) | |
| Lane Width (ft) | |
| Storage Length (ft) | |
| Storage Lanes | |
| Taper Length (ft) | |
| Lane Util. Factor | |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Right Turn on Red | |
| Satd. Flow (RTOR) | |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | |
| Heavy Vehicles (%) | |
| Adj. Flow (vph) | |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | |
| Enter Blocked Intersection | |
| Lane Alignment | |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | |
| Turning Speed (mph) | |
| Number of Detectors | |
| Detector Template | |
| Leading Detector (ft) | |
| Trailing Detector (ft) | |
| Detector 1 Position(ft) | |
| Detector 1 Size(ft) | |
| Detector 1 Type | |
| Detector 1 Channel | |
| Detector 1 Extend (s) | |
| Detector 1 Queue (s) | |
| Detector 1 Delay (s) | |
| Detector 2 Position(ft) | |
| Detector 2 Size(ft) | |
| Detector 2 Type | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | D.P+P | NA | |
| Protected Phases | | 3 | | | 3 | | | 1 | | 4 | 1 4 | |
| Permitted Phases | 3 | | | 3 | | | 1 | | | 1 | | |
| Detector Phase | 3 | 3 | | 3 | 3 | | 1 | 1 | | 4 | 1 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 10.0 | 10.0 | | 5.0 | | |
| Minimum Split (s) | 11.0 | 11.0 | | 11.0 | 11.0 | | 14.0 | 14.0 | | 9.0 | | |
| Total Split (s) | 24.0 | 24.0 | | 24.0 | 24.0 | | 54.0 | 54.0 | | 10.0 | | |
| Total Split (%) | 22.2% | 22.2% | | 22.2% | 22.2% | | 50.0% | 50.0% | | 9.3% | | |
| Maximum Green (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 50.0 | 50.0 | | 6.0 | | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | |
| Total Lost Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | | |
| Lead/Lag | Lead | Lead | | Lead | Lead | | Lead | Lead | | Lag | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 1.0 | | |
| Recall Mode | None | None | | None | None | | Max | Max | | None | | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 20.2 | | | 20.2 | | | 50.5 | | | 56.6 | |
| Actuated g/C Ratio | | 0.21 | | | 0.21 | | | 0.53 | | | 0.59 | |
| v/c Ratio | | 1.03 | | | 1.15 | | | 0.66 | | | 0.57 | |
| Control Delay | | 117.9 | | | 118.5 | | | 21.2 | | | 13.7 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 117.9 | | | 118.5 | | | 21.2 | | | 13.7 | |
| LOS | | F | | | F | | | C | | | B | |
| Approach Delay | | 117.9 | | | 118.5 | | | 21.2 | | | 13.7 | |
| Approach LOS | | F | | | F | | | C | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 108 | | | |
| Actuated Cycle Length: 96 | | | |
| Natural Cycle: 90 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 1.15 | | | |
| Intersection Signal Delay: 49.2 | | Intersection LOS: D | |
| Intersection Capacity Utilization 89.8% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 4: L Street/Summer Street & East 1st Street



| Lane Group | Ø2 |
|---|---|
| Detector 2 Channel | |
| Detector 2 Extend (s) | |
| Turn Type | |
| Protected Phases | 2 |
| Permitted Phases | |
| Detector Phase | |
| Switch Phase | |
| Minimum Initial (s) | 4.0 |
| Minimum Split (s) | 20.0 |
| Total Split (s) | 20.0 |
| Total Split (%) | 19% |
| Maximum Green (s) | 16.0 |
| Yellow Time (s) | 3.0 |
| All-Red Time (s) | 1.0 |
| Lost Time Adjust (s) | |
| Total Lost Time (s) | |
| Lead/Lag | Lag |
| Lead-Lag Optimize? | |
| Vehicle Extension (s) | 3.0 |
| Recall Mode | None |
| Walk Time (s) | 7.0 |
| Flash Dont Walk (s) | 9.0 |
| Pedestrian Calls (#/hr) | 22 |
| Act Effct Green (s) | |
| Actuated g/C Ratio | |
| v/c Ratio | |
| Control Delay | |
| Queue Delay | |
| Total Delay | |
| LOS | |
| Approach Delay | |
| Approach LOS | |

| Intersection Summary |
|---|

| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 162 | 517 | 863 | 643 |
| v/c Ratio | 1.03 | 1.15 | 0.66 | 0.57 |
| Control Delay | 117.9 | 118.5 | 21.2 | 13.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 117.9 | 118.5 | 21.2 | 13.7 |
| Queue Length 50th (ft) | 80 | ~266 | 153 | 63 |
| Queue Length 95th (ft) | #234 | #507 | 331 | 162 |
| Internal Link Dist (ft) | 460 | 496 | 260 | 275 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 157 | 449 | 1311 | 1122 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 1.03 | 1.15 | 0.66 | 0.57 |

Intersection Summary

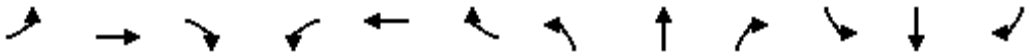
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 43 | 52 | 41 | 10 | 93 | 326 | 41 | 739 | 31 | 123 | 378 | 85 |
| Future Volume (vph) | 43 | 52 | 41 | 10 | 93 | 326 | 41 | 739 | 31 | 123 | 378 | 85 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 15 | 12 | 12 | 16 | 12 | 12 | 9 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | | | 0.95 | | | 0.95 | |
| Frpb, ped/bikes | | 0.98 | | | 0.97 | | | 1.00 | | | 0.98 | |
| Flpb, ped/bikes | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Frt | | 0.96 | | | 0.90 | | | 0.99 | | | 0.98 | |
| Flt Protected | | 0.98 | | | 1.00 | | | 1.00 | | | 0.99 | |
| Satd. Flow (prot) | | 1607 | | | 1664 | | | 2792 | | | 2910 | |
| Flt Permitted | | 0.42 | | | 0.99 | | | 0.89 | | | 0.60 | |
| Satd. Flow (perm) | | 681 | | | 1653 | | | 2487 | | | 1769 | |
| Peak-hour factor, PHF | 0.84 | 0.84 | 0.84 | 0.83 | 0.83 | 0.83 | 0.94 | 0.94 | 0.94 | 0.91 | 0.91 | 0.91 |
| Adj. Flow (vph) | 51 | 62 | 49 | 12 | 112 | 393 | 44 | 786 | 33 | 135 | 415 | 93 |
| RTOR Reduction (vph) | 0 | 14 | 0 | 0 | 103 | 0 | 0 | 2 | 0 | 0 | 11 | 0 |
| Lane Group Flow (vph) | 0 | 148 | 0 | 0 | 414 | 0 | 0 | 861 | 0 | 0 | 632 | 0 |
| Confl. Peds. (#/hr) | 16 | | 17 | 17 | | 16 | 104 | | 44 | 44 | | 104 |
| Confl. Bikes (#/hr) | | | 2 | | | 2 | | | 11 | | | 2 |
| Heavy Vehicles (%) | 12% | 6% | 7% | 17% | 1% | 1% | 2% | 2% | 38% | 15% | 3% | 8% |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | D.P+P | NA | |
| Protected Phases | | 3 | | | 3 | | | 1 | | 4 | 1 4 | |
| Permitted Phases | 3 | | | 3 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 20.2 | | | 20.2 | | | 50.5 | | | 56.6 | |
| Effective Green, g (s) | | 20.2 | | | 20.2 | | | 50.5 | | | 56.6 | |
| Actuated g/C Ratio | | 0.21 | | | 0.21 | | | 0.51 | | | 0.57 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | | | 3.0 | | | | |
| Lane Grp Cap (vph) | | 139 | | | 338 | | | 1275 | | | 1087 | |
| v/s Ratio Prot | | | | | | | | | | | c0.04 | |
| v/s Ratio Perm | | 0.22 | | | c0.25 | | | c0.35 | | | 0.30 | |
| v/c Ratio | | 1.06 | | | 1.22 | | | 0.67 | | | 0.58 | |
| Uniform Delay, d1 | | 39.1 | | | 39.1 | | | 17.9 | | | 13.4 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 94.0 | | | 124.3 | | | 2.9 | | | 0.5 | |
| Delay (s) | | 133.2 | | | 163.5 | | | 20.8 | | | 13.9 | |
| Level of Service | | F | | | F | | | C | | | B | |
| Approach Delay (s) | | 133.2 | | | 163.5 | | | 20.8 | | | 13.9 | |
| Approach LOS | | F | | | F | | | C | | | B | |

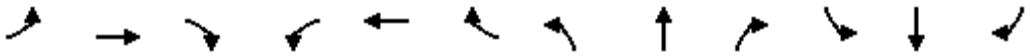
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 60.8 | HCM 2000 Level of Service | E |
| HCM 2000 Volume to Capacity ratio | 0.75 | | |
| Actuated Cycle Length (s) | 98.5 | Sum of lost time (s) | 16.0 |
| Intersection Capacity Utilization | 89.8% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 16 | 5 | 21 | 10 | 16 | 60 | 41 | 715 | 31 | 10 | 410 | 21 |
| Future Volume (vph) | 16 | 5 | 21 | 10 | 16 | 60 | 41 | 715 | 31 | 10 | 410 | 21 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 16 | 12 | 12 | 16 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.932 | | | 0.905 | | | 0.995 | | | 0.994 | |
| Flt Protected | | 0.981 | | | 0.994 | | | 0.997 | | | 0.999 | |
| Satd. Flow (prot) | 0 | 1459 | 0 | 0 | 1402 | 0 | 0 | 1835 | 0 | 0 | 1851 | 0 |
| Flt Permitted | | 0.981 | | | 0.994 | | | 0.997 | | | 0.999 | |
| Satd. Flow (perm) | 0 | 1459 | 0 | 0 | 1402 | 0 | 0 | 1835 | 0 | 0 | 1851 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 429 | | | 453 | | | 298 | | | 340 | |
| Travel Time (s) | | 9.8 | | | 10.3 | | | 6.8 | | | 7.7 | |
| Confl. Peds. (#/hr) | 15 | | 20 | 20 | | 15 | 90 | | 41 | 41 | | 90 |
| Confl. Bikes (#/hr) | | | | | | 1 | | | 9 | | | |
| Peak Hour Factor | 0.57 | 0.57 | 0.57 | 0.88 | 0.88 | 0.88 | 0.94 | 0.94 | 0.94 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 10% | 7% | 0% | 3% | 4% | 25% | 0% | 4% | 5% |
| Adj. Flow (vph) | 28 | 9 | 37 | 11 | 18 | 68 | 44 | 761 | 33 | 10 | 427 | 22 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 74 | 0 | 0 | 97 | 0 | 0 | 838 | 0 | 0 | 459 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.25 | 1.14 | 1.14 | 1.25 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 0.97 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 83.8% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 16 | 5 | 21 | 10 | 16 | 60 | 41 | 715 | 31 | 10 | 410 | 21 |
| Future Volume (Veh/h) | 16 | 5 | 21 | 10 | 16 | 60 | 41 | 715 | 31 | 10 | 410 | 21 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.57 | 0.57 | 0.57 | 0.88 | 0.88 | 0.88 | 0.94 | 0.94 | 0.94 | 0.96 | 0.96 | 0.96 |
| Hourly flow rate (vph) | 28 | 9 | 37 | 11 | 18 | 68 | 44 | 761 | 33 | 10 | 427 | 22 |
| Pedestrians | | 90 | | | 41 | | | 20 | | | 15 | |
| Lane Width (ft) | | 10.0 | | | 10.0 | | | 16.0 | | | 16.0 | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Percent Blockage | | 6 | | | 3 | | | 2 | | | 2 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | 602 | | | 340 | |
| pX, platoon unblocked | 0.84 | 0.84 | 0.88 | 0.84 | 0.84 | 0.78 | 0.88 | | | 0.78 | | |
| vC, conflicting volume | 1506 | 1471 | 548 | 1426 | 1466 | 834 | 539 | | | 835 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1182 | 1141 | 416 | 1087 | 1134 | 647 | 406 | | | 649 | | |
| tC, single (s) | *4.0 | *4.0 | *5.0 | *4.0 | *4.0 | *4.0 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.6 | 4.1 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 90 | 97 | 94 | 97 | 94 | 87 | 95 | | | 99 | | |
| cM capacity (veh/h) | 268 | 323 | 593 | 321 | 321 | 526 | 945 | | | 719 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 74 | 97 | 838 | 459 |
| Volume Left | 28 | 11 | 44 | 10 |
| Volume Right | 37 | 68 | 33 | 22 |
| cSH | 380 | 442 | 945 | 719 |
| Volume to Capacity | 0.19 | 0.22 | 0.05 | 0.01 |
| Queue Length 95th (ft) | 18 | 21 | 4 | 1 |
| Control Delay (s) | 16.7 | 15.4 | 1.2 | 0.4 |
| Lane LOS | C | C | A | A |
| Approach Delay (s) | 16.7 | 15.4 | 1.2 | 0.4 |
| Approach LOS | C | C | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.7 | | |
| Intersection Capacity Utilization | 83.8% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

* User Entered Value



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBU | NBL | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 17 | 0 | 21 | 5 | 16 | 31 | 5 | 21 | 714 | 31 | 16 | 398 |
| Future Volume (vph) | 17 | 0 | 21 | 5 | 16 | 31 | 5 | 21 | 714 | 31 | 16 | 398 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 12 | 16 | 12 | 12 | 16 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.925 | | | 0.919 | | | | 0.995 | | | 0.993 |
| Flt Protected | | 0.978 | | | 0.995 | | | | 0.998 | | | 0.998 |
| Satd. Flow (prot) | 0 | 1258 | 0 | 0 | 1313 | 0 | 0 | 0 | 1853 | 0 | 0 | 1833 |
| Flt Permitted | | 0.978 | | | 0.995 | | | | 0.998 | | | 0.998 |
| Satd. Flow (perm) | 0 | 1258 | 0 | 0 | 1313 | 0 | 0 | 0 | 1853 | 0 | 0 | 1833 |
| Link Speed (mph) | | 30 | | | 30 | | | | 30 | | | 30 |
| Link Distance (ft) | | 638 | | | 716 | | | | 304 | | | 298 |
| Travel Time (s) | | 14.5 | | | 16.3 | | | | 6.9 | | | 6.8 |
| Confl. Peds. (#/hr) | 22 | | 31 | 31 | | 22 | | 75 | | 46 | 46 | |
| Confl. Bikes (#/hr) | | | | | | | | | | 9 | | |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.67 | 0.67 | 0.67 | 0.92 | 0.94 | 0.94 | 0.94 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 0% | 0% | 6% | 0% | 0% | 0% | 0% | 5% | 4% | 0% | 6% | 5% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | | | | | |
| Adj. Flow (vph) | 20 | 0 | 25 | 7 | 24 | 46 | 5 | 22 | 760 | 33 | 17 | 428 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 45 | 0 | 0 | 77 | 0 | 0 | 0 | 820 | 0 | 0 | 469 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | R NA | Left | Left | Right | Left | Left |
| Median Width(ft) | | 0 | | | 0 | | | | 0 | | | 0 |
| Link Offset(ft) | | 0 | | | 0 | | | | 0 | | | 0 |
| Crosswalk Width(ft) | | 16 | | | 16 | | | | 16 | | | 16 |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 0.97 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 9 | 15 | | 9 | 15 | |
| Sign Control | | Stop | | | Stop | | | | Free | | | Free |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 73.9% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |



| Lane Group | SBR |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | 22 |
| Future Volume (vph) | 22 |
| Ideal Flow (vphpl) | 1900 |
| Lane Width (ft) | 12 |
| Lane Util. Factor | 1.00 |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | 0 |
| Flt Permitted | |
| Satd. Flow (perm) | 0 |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | 75 |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | 0.93 |
| Heavy Vehicles (%) | 0% |
| Parking (#/hr) | |
| Adj. Flow (vph) | 24 |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | 0 |
| Enter Blocked Intersection | No |
| Lane Alignment | Right |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | 1.14 |
| Turning Speed (mph) | 9 |
| Sign Control | |

| Intersection Summary |
|---|

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBU | NBL | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 17 | 0 | 21 | 5 | 16 | 31 | 5 | 21 | 714 | 31 | 16 | 398 |
| Future Volume (Veh/h) | 17 | 0 | 21 | 5 | 16 | 31 | 5 | 21 | 714 | 31 | 16 | 398 |
| Sign Control | | Stop | | | Stop | | | | Free | | | Free |
| Grade | | 0% | | | 0% | | | | 0% | | | 0% |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.67 | 0.67 | 0.67 | 0.92 | 0.94 | 0.94 | 0.94 | 0.93 | 0.93 |
| Hourly flow rate (vph) | 20 | 0 | 25 | 7 | 24 | 46 | 0 | 22 | 760 | 33 | 17 | 428 |
| Pedestrians | | 75 | | | 46 | | | | 31 | | | 22 |
| Lane Width (ft) | | 10.0 | | | 10.0 | | | | 16.0 | | | 16.0 |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | | 4.0 | | | 4.0 |
| Percent Blockage | | 5 | | | 3 | | | | 3 | | | 2 |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | | None | | | None |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | 304 | | | 638 |
| pX, platoon unblocked | 0.84 | 0.84 | 0.89 | 0.84 | 0.84 | 0.79 | 0.00 | 0.89 | | | 0.79 | |
| vC, conflicting volume | 1450 | 1432 | 546 | 1396 | 1428 | 844 | 0 | 527 | | | 839 | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1156 | 1135 | 433 | 1093 | 1130 | 670 | 0 | 411 | | | 663 | |
| tC, single (s) | *4.0 | 6.5 | *5.0 | *4.0 | *4.0 | *4.0 | 0.0 | 4.1 | | | 4.2 | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.4 | 3.5 | 4.0 | 3.3 | 0.0 | 2.2 | | | 2.3 | |
| p0 queue free % | 93 | 100 | 96 | 98 | 93 | 91 | 0 | 98 | | | 98 | |
| cM capacity (veh/h) | 288 | 150 | 585 | 338 | 332 | 517 | 0 | 959 | | | 693 | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 45 | 77 | 815 | 469 |
| Volume Left | 20 | 7 | 22 | 17 |
| Volume Right | 25 | 46 | 33 | 24 |
| cSH | 401 | 423 | 959 | 693 |
| Volume to Capacity | 0.11 | 0.18 | 0.02 | 0.02 |
| Queue Length 95th (ft) | 9 | 16 | 2 | 2 |
| Control Delay (s) | 15.1 | 15.4 | 0.6 | 0.7 |
| Lane LOS | C | C | A | A |
| Approach Delay (s) | 15.1 | 15.4 | 0.6 | 0.7 |
| Approach LOS | C | C | | |

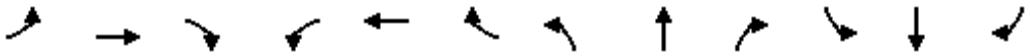
| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 1.9 | | | |
| Intersection Capacity Utilization | 73.9% | ICU Level of Service | D | |
| Analysis Period (min) | 15 | | | |

* User Entered Value



| Movement | SBR |
|---|---|
| Lane Configurations | |
| Traffic Volume (veh/h) | 22 |
| Future Volume (Veh/h) | 22 |
| Sign Control | |
| Grade | |
| Peak Hour Factor | 0.93 |
| Hourly flow rate (vph) | 24 |
| Pedestrians | |
| Lane Width (ft) | |
| Walking Speed (ft/s) | |
| Percent Blockage | |
| Right turn flare (veh) | |
| Median type | |
| Median storage veh) | |
| Upstream signal (ft) | |
| pX, platoon unblocked | |
| vC, conflicting volume | |
| vC1, stage 1 conf vol | |
| vC2, stage 2 conf vol | |
| vCu, unblocked vol | |
| tC, single (s) | |
| tC, 2 stage (s) | |
| tF (s) | |
| p0 queue free % | |
| cM capacity (veh/h) | |

| Direction, Lane # |
|---|



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 88 | 98 | 47 | 31 | 150 | 70 | 67 | 619 | 10 | 53 | 272 | 94 |
| Future Volume (vph) | 88 | 98 | 47 | 31 | 150 | 70 | 67 | 619 | 10 | 53 | 272 | 94 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 11 | 12 | 12 | 16 | 12 | 10 | 10 | 10 | 10 | 10 | 10 |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 0 | | 250 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 0 | | 1 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 0.95 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Ped Bike Factor | | 0.92 | | | 0.91 | | | 1.00 | | | 0.97 | |
| Frt | | 0.970 | | | 0.962 | | | 0.998 | | | 0.966 | |
| Flt Protected | | 0.981 | | | 0.994 | | | 0.995 | | | 0.994 | |
| Satd. Flow (prot) | 0 | 2509 | 0 | 0 | 1359 | 0 | 0 | 2823 | 0 | 0 | 2583 | 0 |
| Flt Permitted | | 0.582 | | | 0.929 | | | 0.799 | | | 0.686 | |
| Satd. Flow (perm) | 0 | 1429 | 0 | 0 | 1248 | 0 | 0 | 2260 | 0 | 0 | 1776 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 642 | | | 138 | | | 618 | | | 304 | |
| Travel Time (s) | | 14.6 | | | 3.1 | | | 14.0 | | | 6.9 | |
| Confl. Peds. (#/hr) | 104 | | 84 | 84 | | 104 | 117 | | 118 | 118 | | 117 |
| Confl. Bikes (#/hr) | | | | | | 3 | | | 9 | | | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.97 | 0.97 | 0.97 | 0.95 | 0.95 | 0.95 | 0.85 | 0.85 | 0.85 |
| Heavy Vehicles (%) | 16% | 7% | 0% | 6% | 10% | 25% | 3% | 1% | 0% | 2% | 3% | 10% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Adj. Flow (vph) | 98 | 109 | 52 | 32 | 155 | 72 | 71 | 652 | 11 | 62 | 320 | 111 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 259 | 0 | 0 | 259 | 0 | 0 | 734 | 0 | 0 | 493 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.27 | 1.14 | 1.14 | 1.12 | 1.14 | 1.25 | 1.33 | 1.25 | 1.25 | 1.33 | 1.25 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |

| Lane Group | Ø2 |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | |
| Future Volume (vph) | |
| Ideal Flow (vphpl) | |
| Lane Width (ft) | |
| Storage Length (ft) | |
| Storage Lanes | |
| Taper Length (ft) | |
| Lane Util. Factor | |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Right Turn on Red | |
| Satd. Flow (RTOR) | |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | |
| Heavy Vehicles (%) | |
| Parking (#/hr) | |
| Adj. Flow (vph) | |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | |
| Enter Blocked Intersection | |
| Lane Alignment | |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | |
| Turning Speed (mph) | |
| Number of Detectors | |
| Detector Template | |
| Leading Detector (ft) | |
| Trailing Detector (ft) | |
| Detector 1 Position(ft) | |
| Detector 1 Size(ft) | |
| Detector 1 Type | |
| Detector 1 Channel | |
| Detector 1 Extend (s) | |
| Detector 1 Queue (s) | |
| Detector 1 Delay (s) | |
| Detector 2 Position(ft) | |
| Detector 2 Size(ft) | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | D.P+P | NA | | Perm | NA | | D.P+P | NA | | Perm | NA | |
| Protected Phases | 3 | 3 4 | | | 4 | | 5 | 1 5 | | | 1 | |
| Permitted Phases | 4 | | | 4 | | | 1 | | | 1 | | |
| Detector Phase | 3 | 3 4 | | 4 | 4 | | 5 | 1 5 | | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | | | 10.0 | 10.0 | | 6.0 | | | 30.0 | 30.0 | |
| Minimum Split (s) | 10.0 | | | 14.0 | 14.0 | | 10.0 | | | 34.0 | 34.0 | |
| Total Split (s) | 11.0 | | | 34.0 | 34.0 | | 19.0 | | | 54.0 | 54.0 | |
| Total Split (%) | 7.7% | | | 23.9% | 23.9% | | 13.4% | | | 38.0% | 38.0% | |
| Maximum Green (s) | 6.0 | | | 30.0 | 30.0 | | 15.0 | | | 50.0 | 50.0 | |
| Yellow Time (s) | 3.0 | | | 3.0 | 3.0 | | 3.0 | | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | | | 1.0 | 1.0 | | 1.0 | | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | | | | | 0.0 | | | | | | 0.0 | |
| Total Lost Time (s) | | | | | 4.0 | | | | | | 4.0 | |
| Lead/Lag | Lead | | | Lag | Lag | | | | | Lead | Lead | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | | | 2.0 | 2.0 | | 2.0 | | | 2.0 | 2.0 | |
| Recall Mode | Max | | | Max | Max | | Max | | | Max | Max | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 35.0 | | | 30.0 | | | 65.0 | | | 50.0 | |
| Actuated g/C Ratio | | 0.25 | | | 0.21 | | | 0.46 | | | 0.35 | |
| v/c Ratio | | 0.65 | | | 0.98 | | | 0.67 | | | 0.79 | |
| Control Delay | | 53.0 | | | 107.0 | | | 30.9 | | | 51.8 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 53.0 | | | 107.0 | | | 30.9 | | | 51.8 | |
| LOS | | D | | | F | | | C | | | D | |
| Approach Delay | | 53.0 | | | 107.0 | | | 30.9 | | | 51.8 | |
| Approach LOS | | D | | | F | | | C | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 142 | | | |
| Actuated Cycle Length: 142 | | | |
| Natural Cycle: 95 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 0.98 | | | |
| Intersection Signal Delay: 51.4 | | Intersection LOS: D | |
| Intersection Capacity Utilization 89.9% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |

Description: L Street is very wide and during peak hours vehicles form two lanes.

Splits and Phases: 7: L Street & E Broadway



| Lane Group | Ø2 |
|---|---|
| Detector 2 Type | |
| Detector 2 Channel | |
| Detector 2 Extend (s) | |
| Turn Type | |
| Protected Phases | 2 |
| Permitted Phases | |
| Detector Phase | |
| Switch Phase | |
| Minimum Initial (s) | 4.0 |
| Minimum Split (s) | 24.0 |
| Total Split (s) | 24.0 |
| Total Split (%) | 17% |
| Maximum Green (s) | 20.0 |
| Yellow Time (s) | 3.0 |
| All-Red Time (s) | 1.0 |
| Lost Time Adjust (s) | |
| Total Lost Time (s) | |
| Lead/Lag | Lag |
| Lead-Lag Optimize? | |
| Vehicle Extension (s) | 2.0 |
| Recall Mode | None |
| Walk Time (s) | 8.0 |
| Flash Dont Walk (s) | 12.0 |
| Pedestrian Calls (#/hr) | 121 |
| Act Effct Green (s) | |
| Actuated g/C Ratio | |
| v/c Ratio | |
| Control Delay | |
| Queue Delay | |
| Total Delay | |
| LOS | |
| Approach Delay | |
| Approach LOS | |

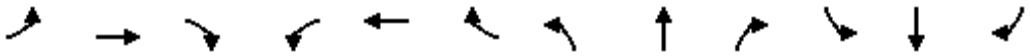
| Intersection Summary |
|---|

| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 259 | 259 | 734 | 493 |
| v/c Ratio | 0.65 | 0.98 | 0.67 | 0.79 |
| Control Delay | 53.0 | 107.0 | 30.9 | 51.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 53.0 | 107.0 | 30.9 | 51.8 |
| Queue Length 50th (ft) | 101 | 241 | 243 | 214 |
| Queue Length 95th (ft) | 144 | #424 | 303 | 267 |
| Internal Link Dist (ft) | 562 | 58 | 538 | 224 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 397 | 263 | 1093 | 625 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.65 | 0.98 | 0.67 | 0.79 |

Intersection Summary

Description: L Street is very wide and during peak hours vehicles form two lanes.

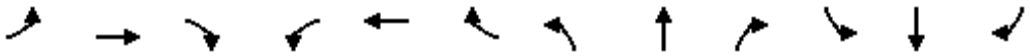
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 88 | 98 | 47 | 31 | 150 | 70 | 67 | 619 | 10 | 53 | 272 | 94 |
| Future Volume (vph) | 88 | 98 | 47 | 31 | 150 | 70 | 67 | 619 | 10 | 53 | 272 | 94 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 11 | 12 | 12 | 16 | 12 | 10 | 10 | 10 | 10 | 10 | 10 |
| Total Lost time (s) | | 5.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 0.95 | | | 1.00 | | | 0.95 | | | 0.95 | |
| Frpb, ped/bikes | | 0.96 | | | 0.93 | | | 1.00 | | | 0.98 | |
| Flpb, ped/bikes | | 0.98 | | | 0.98 | | | 1.00 | | | 1.00 | |
| Frt | | 0.97 | | | 0.96 | | | 1.00 | | | 0.97 | |
| Flt Protected | | 0.98 | | | 0.99 | | | 1.00 | | | 0.99 | |
| Satd. Flow (prot) | | 2454 | | | 1336 | | | 2816 | | | 2573 | |
| Flt Permitted | | 0.58 | | | 0.93 | | | 0.80 | | | 0.69 | |
| Satd. Flow (perm) | | 1456 | | | 1249 | | | 2259 | | | 1775 | |
| Peak-hour factor, PHF | 0.90 | 0.90 | 0.90 | 0.97 | 0.97 | 0.97 | 0.95 | 0.95 | 0.95 | 0.85 | 0.85 | 0.85 |
| Adj. Flow (vph) | 98 | 109 | 52 | 32 | 155 | 72 | 71 | 652 | 11 | 62 | 320 | 111 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 259 | 0 | 0 | 259 | 0 | 0 | 734 | 0 | 0 | 493 | 0 |
| Confl. Peds. (#/hr) | 104 | | 84 | 84 | | 104 | 117 | | 118 | 118 | | 117 |
| Confl. Bikes (#/hr) | | | | | | 3 | | | 9 | | | |
| Heavy Vehicles (%) | 16% | 7% | 0% | 6% | 10% | 25% | 3% | 1% | 0% | 2% | 3% | 10% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Turn Type | D.P+P | NA | | Perm | NA | | D.P+P | NA | | Perm | NA | |
| Protected Phases | 3 | 3 4 | | | 4 | | 5 | 1 5 | | | 1 | |
| Permitted Phases | 4 | | | 4 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 36.0 | | | 30.0 | | | 65.0 | | | 50.0 | |
| Effective Green, g (s) | | 36.0 | | | 30.0 | | | 65.0 | | | 50.0 | |
| Actuated g/C Ratio | | 0.25 | | | 0.21 | | | 0.46 | | | 0.35 | |
| Clearance Time (s) | | | | | 4.0 | | | | | | 4.0 | |
| Vehicle Extension (s) | | | | | 2.0 | | | | | | 2.0 | |
| Lane Grp Cap (vph) | | 411 | | | 263 | | | 1092 | | | 625 | |
| v/s Ratio Prot | | c0.03 | | | | | | c0.07 | | | | |
| v/s Ratio Perm | | 0.13 | | | c0.21 | | | 0.24 | | | c0.28 | |
| v/c Ratio | | 0.63 | | | 0.98 | | | 0.67 | | | 0.79 | |
| Uniform Delay, d1 | | 47.1 | | | 55.8 | | | 30.2 | | | 41.3 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 7.2 | | | 51.8 | | | 3.3 | | | 9.8 | |
| Delay (s) | | 54.2 | | | 107.5 | | | 33.5 | | | 51.0 | |
| Level of Service | | D | | | F | | | C | | | D | |
| Approach Delay (s) | | 54.2 | | | 107.5 | | | 33.5 | | | 51.0 | |
| Approach LOS | | D | | | F | | | C | | | D | |

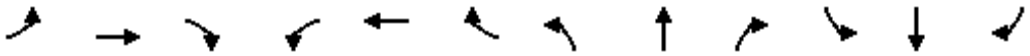
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 52.5 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.68 | | |
| Actuated Cycle Length (s) | 142.0 | Sum of lost time (s) | 21.0 |
| Intersection Capacity Utilization | 89.9% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |
| Description: L Street is very wide and during peak hours vehicles form two lanes. | | | |

c Critical Lane Group



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 26 | 106 | 0 | 0 | 208 | 5 | 124 | 10 | 26 | 5 | 0 | 57 |
| Future Volume (vph) | 26 | 106 | 0 | 0 | 208 | 5 | 124 | 10 | 26 | 5 | 0 | 57 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 13 | 12 | 10 | 10 | 12 | 12 | 16 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | | | 0.997 | | | 0.891 | | | 0.876 | |
| Flt Protected | | 0.990 | | | | | 0.950 | | | | 0.996 | |
| Satd. Flow (prot) | 0 | 1378 | 0 | 0 | 1547 | 0 | 1325 | 1242 | 0 | 0 | 1215 | 0 |
| Flt Permitted | | 0.990 | | | | | 0.950 | | | | 0.996 | |
| Satd. Flow (perm) | 0 | 1378 | 0 | 0 | 1547 | 0 | 1325 | 1242 | 0 | 0 | 1215 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 1822 | | | 540 | | | 382 | | | 350 | |
| Travel Time (s) | | 41.4 | | | 12.3 | | | 8.7 | | | 8.0 | |
| Confl. Peds. (#/hr) | 8 | | 18 | 18 | | 8 | 13 | | 28 | 28 | | 13 |
| Confl. Bikes (#/hr) | | | 1 | | | 3 | | | 1 | | | |
| Peak Hour Factor | 0.70 | 0.70 | 0.70 | 0.68 | 0.68 | 0.68 | 0.71 | 0.71 | 0.71 | 0.50 | 0.50 | 0.50 |
| Heavy Vehicles (%) | 9% | 11% | 2% | 0% | 2% | 25% | 3% | 11% | 0% | 17% | 0% | 26% |
| Parking (#/hr) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Adj. Flow (vph) | 37 | 151 | 0 | 0 | 306 | 7 | 175 | 14 | 37 | 10 | 0 | 114 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 188 | 0 | 0 | 313 | 0 | 175 | 51 | 0 | 0 | 124 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 10 | | | 10 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.30 | 1.14 | 1.14 | 1.25 | 1.14 | 1.42 | 1.42 | 1.14 | 1.14 | 1.12 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 47.3% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 26 | 106 | 0 | 0 | 208 | 5 | 124 | 10 | 26 | 5 | 0 | 57 |
| Future Volume (Veh/h) | 26 | 106 | 0 | 0 | 208 | 5 | 124 | 10 | 26 | 5 | 0 | 57 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.70 | 0.70 | 0.70 | 0.68 | 0.68 | 0.68 | 0.71 | 0.71 | 0.71 | 0.50 | 0.50 | 0.50 |
| Hourly flow rate (vph) | 37 | 151 | 0 | 0 | 306 | 7 | 175 | 14 | 37 | 10 | 0 | 114 |
| Pedestrians | | 13 | | | 28 | | | 18 | | | 8 | |
| Lane Width (ft) | | 12.0 | | | 13.0 | | | 10.0 | | | 16.0 | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Percent Blockage | | 1 | | | 3 | | | 1 | | | 1 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 540 | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 321 | | | 169 | | | 680 | 564 | 197 | 614 | 560 | 330 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 321 | | | 169 | | | 680 | 564 | 197 | 614 | 560 | 330 |
| tC, single (s) | 4.2 | | | 4.1 | | | *6.5 | 6.6 | 6.2 | 7.3 | 6.5 | 6.5 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.3 | | | 2.2 | | | 3.5 | 4.1 | 3.3 | 3.7 | 4.0 | 3.5 |
| p0 queue free % | 97 | | | 100 | | | 45 | 97 | 95 | 97 | 100 | 82 |
| cM capacity (veh/h) | 1190 | | | 1403 | | | 317 | 401 | 817 | 330 | 417 | 646 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | SB 1 |
|---|---|---|---|---|---|
| Volume Total | 188 | 313 | 175 | 51 | 124 |
| Volume Left | 37 | 0 | 175 | 0 | 10 |
| Volume Right | 0 | 7 | 0 | 37 | 114 |
| cSH | 1190 | 1700 | 317 | 636 | 600 |
| Volume to Capacity | 0.03 | 0.18 | 0.55 | 0.08 | 0.21 |
| Queue Length 95th (ft) | 2 | 0 | 79 | 7 | 19 |
| Control Delay (s) | 1.8 | 0.0 | 29.5 | 11.2 | 12.6 |
| Lane LOS | A | | D | B | B |
| Approach Delay (s) | 1.8 | 0.0 | 25.4 | | 12.6 |
| Approach LOS | | | D | | B |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 9.0 | | | |
| Intersection Capacity Utilization | 47.3% | ICU Level of Service | | A |
| Analysis Period (min) | 15 | | | |

* User Entered Value



| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 191 | 0 | 0 | 334 | 95 | 10 |
| Future Volume (vph) | 191 | 0 | 0 | 334 | 95 | 10 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 13 | 12 | 12 | 13 | 10 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | | | | | 0.987 | |
| Flt Protected | | | | | 0.957 | |
| Satd. Flow (prot) | 1537 | 0 | 0 | 1750 | 1481 | 0 |
| Flt Permitted | | | | | 0.957 | |
| Satd. Flow (perm) | 1537 | 0 | 0 | 1750 | 1481 | 0 |
| Link Speed (mph) | 30 | | | 30 | 30 | |
| Link Distance (ft) | 576 | | | 561 | 457 | |
| Travel Time (s) | 13.1 | | | 12.8 | 10.4 | |
| Confl. Peds. (#/hr) | | 13 | 13 | | 4 | |
| Confl. Bikes (#/hr) | | 1 | | | | 3 |
| Peak Hour Factor | 0.84 | 0.84 | 0.77 | 0.77 | 0.70 | 0.70 |
| Heavy Vehicles (%) | 15% | 0% | 0% | 1% | 2% | 0% |
| Adj. Flow (vph) | 227 | 0 | 0 | 434 | 136 | 14 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 227 | 0 | 0 | 434 | 150 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(ft) | 0 | | | 0 | 10 | |
| Link Offset(ft) | 0 | | | 0 | 0 | |
| Crosswalk Width(ft) | 16 | | | 16 | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.10 | 1.14 | 1.14 | 1.10 | 1.25 | 1.14 |
| Turning Speed (mph) | | 9 | 15 | | 15 | 9 |
| Sign Control | Free | | | Free | Stop | |

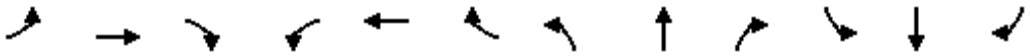
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 32.7% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 191 | 0 | 0 | 334 | 95 | 10 |
| Future Volume (Veh/h) | 191 | 0 | 0 | 334 | 95 | 10 |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.84 | 0.84 | 0.77 | 0.77 | 0.70 | 0.70 |
| Hourly flow rate (vph) | 227 | 0 | 0 | 434 | 136 | 14 |
| Pedestrians | 4 | | | | 13 | |
| Lane Width (ft) | 13.0 | | | | 10.0 | |
| Walking Speed (ft/s) | 4.0 | | | | 4.0 | |
| Percent Blockage | 0 | | | | 1 | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | None | | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | 576 | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | | | 240 | | 678 | 240 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 240 | | 678 | 240 |
| tC, single (s) | | | 4.1 | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.2 | | 3.5 | 3.3 |
| p0 queue free % | | | 100 | | 67 | 98 |
| cM capacity (veh/h) | | | 1326 | | 412 | 797 |

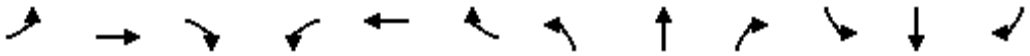
| Direction, Lane # | EB 1 | WB 1 | NB 1 |
|---|---|---|---|
| Volume Total | 227 | 434 | 150 |
| Volume Left | 0 | 0 | 136 |
| Volume Right | 0 | 0 | 14 |
| cSH | 1700 | 1700 | 432 |
| Volume to Capacity | 0.13 | 0.26 | 0.35 |
| Queue Length 95th (ft) | 0 | 0 | 38 |
| Control Delay (s) | 0.0 | 0.0 | 17.7 |
| Lane LOS | | | C |
| Approach Delay (s) | 0.0 | 0.0 | 17.7 |
| Approach LOS | | | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 3.3 | | |
| Intersection Capacity Utilization | 32.7% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 29 | 198 | 0 | 0 | 385 | 217 | 78 | 57 | 5 | 126 | 0 | 71 |
| Future Volume (vph) | 29 | 198 | 0 | 0 | 385 | 217 | 78 | 57 | 5 | 126 | 0 | 71 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 15 | 12 | 12 | 16 | 12 | 12 | 16 | 12 | 12 | 14 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | | | 0.951 | | | 0.995 | | | 0.951 | |
| Flt Protected | | 0.994 | | | | | | 0.973 | | | 0.969 | |
| Satd. Flow (prot) | 0 | 1388 | 0 | 0 | 1752 | 0 | 0 | 1829 | 0 | 0 | 1439 | 0 |
| Flt Permitted | | 0.994 | | | | | | 0.973 | | | 0.969 | |
| Satd. Flow (perm) | 0 | 1388 | 0 | 0 | 1752 | 0 | 0 | 1829 | 0 | 0 | 1439 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 848 | | | 1822 | | | 402 | | | 2052 | |
| Travel Time (s) | | 19.3 | | | 41.4 | | | 9.1 | | | 46.6 | |
| Confl. Peds. (#/hr) | 4 | | | 5 | | 4 | 1 | | 24 | 24 | | 1 |
| Confl. Bikes (#/hr) | | | 2 | | | 6 | | | 9 | | | |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.70 | 0.70 | 0.70 | 0.74 | 0.74 | 0.74 | 0.88 | 0.88 | 0.88 |
| Heavy Vehicles (%) | 9% | 23% | 0% | 0% | 7% | 2% | 1% | 2% | 33% | 11% | 0% | 27% |
| Parking (#/hr) | | 0 | 0 | | | | | | | | | |
| Adj. Flow (vph) | 33 | 225 | 0 | 0 | 550 | 310 | 105 | 77 | 7 | 143 | 0 | 81 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 258 | 0 | 0 | 860 | 0 | 0 | 189 | 0 | 0 | 224 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.16 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 1.05 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |

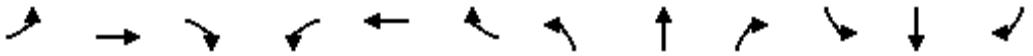
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 61.7% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 29 | 198 | 0 | 0 | 385 | 217 | 78 | 57 | 5 | 126 | 0 | 71 |
| Future Volume (Veh/h) | 29 | 198 | 0 | 0 | 385 | 217 | 78 | 57 | 5 | 126 | 0 | 71 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.70 | 0.70 | 0.70 | 0.74 | 0.74 | 0.74 | 0.88 | 0.88 | 0.88 |
| Hourly flow rate (vph) | 33 | 225 | 0 | 0 | 550 | 310 | 105 | 77 | 7 | 143 | 0 | 81 |
| Pedestrians | | 1 | | | 24 | | | 5 | | | 4 | |
| Lane Width (ft) | | 15.0 | | | 16.0 | | | 16.0 | | | 14.0 | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Percent Blockage | | 0 | | | 3 | | | 1 | | | 0 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 864 | | | 230 | | | 1083 | 1160 | 254 | 1070 | 1005 | 710 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 864 | | | 230 | | | 1083 | 1160 | 254 | 1070 | 1005 | 710 |
| tC, single (s) | 4.2 | | | 4.1 | | | 7.1 | 6.5 | 6.5 | 7.2 | 6.5 | 6.5 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.3 | | | 2.2 | | | 3.5 | 4.0 | 3.6 | 3.6 | 4.0 | 3.5 |
| p0 queue free % | 96 | | | 100 | | | 29 | 58 | 99 | 0 | 100 | 79 |
| cM capacity (veh/h) | 747 | | | 1342 | | | 148 | 185 | 692 | 119 | 230 | 392 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 258 | 860 | 189 | 224 |
| Volume Left | 33 | 0 | 105 | 143 |
| Volume Right | 0 | 310 | 7 | 81 |
| cSH | 747 | 1342 | 166 | 159 |
| Volume to Capacity | 0.04 | 0.00 | 1.14 | 1.41 |
| Queue Length 95th (ft) | 3 | 0 | 249 | 351 |
| Control Delay (s) | 1.7 | 0.0 | 166.7 | 269.1 |
| Lane LOS | A | | F | F |
| Approach Delay (s) | 1.7 | 0.0 | 166.7 | 269.1 |
| Approach LOS | | | F | F |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 60.3 | | | |
| Intersection Capacity Utilization | 61.7% | ICU Level of Service | B | |
| Analysis Period (min) | 15 | | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 31 | 21 | 5 | 5 | 31 | 10 | 21 | 582 | 10 | 21 | 261 | 37 |
| Future Volume (vph) | 31 | 21 | 5 | 5 | 31 | 10 | 21 | 582 | 10 | 21 | 261 | 37 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | 0.95 | | | 0.97 | | | 1.00 | | | 0.98 | |
| Frt | | 0.988 | | | 0.972 | | | 0.998 | | | 0.984 | |
| Flt Protected | | 0.973 | | | 0.994 | | | 0.998 | | | 0.997 | |
| Satd. Flow (prot) | 0 | 1109 | 0 | 0 | 1353 | 0 | 0 | 1410 | 0 | 0 | 1340 | 0 |
| Flt Permitted | | 0.824 | | | 0.973 | | | 0.982 | | | 0.947 | |
| Satd. Flow (perm) | 0 | 894 | 0 | 0 | 1320 | 0 | 0 | 1384 | 0 | 0 | 1271 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 4 | | | 11 | | | 1 | | | 9 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 659 | | | 649 | | | 380 | | | 618 | |
| Travel Time (s) | | 15.0 | | | 14.8 | | | 8.6 | | | 14.0 | |
| Confl. Peds. (#/hr) | 28 | | 11 | 11 | | 28 | 108 | | 63 | 63 | | 108 |
| Confl. Bikes (#/hr) | | | | | | | | | 5 | | | |
| Peak Hour Factor | 0.74 | 0.74 | 0.74 | 0.87 | 0.87 | 0.87 | 0.97 | 0.97 | 0.97 | 0.87 | 0.87 | 0.87 |
| Heavy Vehicles (%) | 31% | 18% | 4% | 0% | 0% | 0% | 6% | 1% | 11% | 0% | 4% | 3% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Adj. Flow (vph) | 42 | 28 | 7 | 6 | 36 | 11 | 22 | 600 | 10 | 24 | 300 | 43 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 77 | 0 | 0 | 53 | 0 | 0 | 632 | 0 | 0 | 367 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |

| Lane Group | Ø2 |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | |
| Future Volume (vph) | |
| Ideal Flow (vphpl) | |
| Lane Width (ft) | |
| Lane Util. Factor | |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Right Turn on Red | |
| Satd. Flow (RTOR) | |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | |
| Heavy Vehicles (%) | |
| Parking (#/hr) | |
| Adj. Flow (vph) | |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | |
| Enter Blocked Intersection | |
| Lane Alignment | |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | |
| Turning Speed (mph) | |
| Number of Detectors | |
| Detector Template | |
| Leading Detector (ft) | |
| Trailing Detector (ft) | |
| Detector 1 Position(ft) | |
| Detector 1 Size(ft) | |
| Detector 1 Type | |
| Detector 1 Channel | |
| Detector 1 Extend (s) | |
| Detector 1 Queue (s) | |
| Detector 1 Delay (s) | |
| Detector 2 Position(ft) | |
| Detector 2 Size(ft) | |
| Detector 2 Type | |
| Detector 2 Channel | |
| Detector 2 Extend (s) | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Detector Phase | 5 | 5 | | 5 | 5 | | 1 | 1 | | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | |
| Minimum Split (s) | 12.0 | 12.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Total Split (s) | 18.0 | 18.0 | | 18.0 | 18.0 | | 54.0 | 54.0 | | 54.0 | 54.0 | |
| Total Split (%) | 17.6% | 17.6% | | 17.6% | 17.6% | | 52.9% | 52.9% | | 52.9% | 52.9% | |
| Maximum Green (s) | 14.0 | 14.0 | | 14.0 | 14.0 | | 50.0 | 50.0 | | 50.0 | 50.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Lost Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lead/Lag | | | | | | | Lead | Lead | | Lead | Lead | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | Max | Max | | Max | Max | | Max | Max | | Max | Max | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 14.3 | | | 14.3 | | | 51.0 | | | 51.0 | |
| Actuated g/C Ratio | | 0.15 | | | 0.15 | | | 0.53 | | | 0.53 | |
| v/c Ratio | | 0.57 | | | 0.26 | | | 0.86 | | | 0.54 | |
| Control Delay | | 57.4 | | | 36.5 | | | 36.7 | | | 20.7 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 57.4 | | | 36.5 | | | 36.7 | | | 20.7 | |
| LOS | | E | | | D | | | D | | | C | |
| Approach Delay | | 57.4 | | | 36.5 | | | 36.7 | | | 20.7 | |
| Approach LOS | | E | | | D | | | D | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 102 | | | |
| Actuated Cycle Length: 96 | | | |
| Natural Cycle: 90 | | | |
| Control Type: Semi Act-Uncoord | | | |
| Maximum v/c Ratio: 0.86 | | | |
| Intersection Signal Delay: 32.9 | | Intersection LOS: C | |
| Intersection Capacity Utilization 58.2% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 11: L Street & E 5th Street



| Lane Group | Ø2 |
|---|---|
| Turn Type | |
| Protected Phases | 2 |
| Permitted Phases | |
| Detector Phase | |
| Switch Phase | |
| Minimum Initial (s) | 4.0 |
| Minimum Split (s) | 30.0 |
| Total Split (s) | 30.0 |
| Total Split (%) | 29% |
| Maximum Green (s) | 26.0 |
| Yellow Time (s) | 3.0 |
| All-Red Time (s) | 1.0 |
| Lost Time Adjust (s) | |
| Total Lost Time (s) | |
| Lead/Lag | Lag |
| Lead-Lag Optimize? | |
| Vehicle Extension (s) | 2.0 |
| Recall Mode | None |
| Walk Time (s) | 14.0 |
| Flash Dont Walk (s) | 12.0 |
| Pedestrian Calls (#/hr) | 53 |
| Act Effct Green (s) | |
| Actuated g/C Ratio | |
| v/c Ratio | |
| Control Delay | |
| Queue Delay | |
| Total Delay | |
| LOS | |
| Approach Delay | |
| Approach LOS | |

| Intersection Summary |
|---|

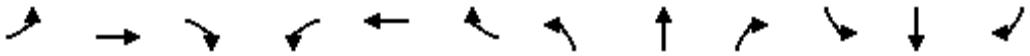
| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 77 | 53 | 632 | 367 |
| v/c Ratio | 0.57 | 0.26 | 0.86 | 0.54 |
| Control Delay | 57.4 | 36.5 | 36.7 | 20.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 57.4 | 36.5 | 36.7 | 20.7 |
| Queue Length 50th (ft) | 45 | 25 | 371 | 160 |
| Queue Length 95th (ft) | 77 | 60 | #616 | 243 |
| Internal Link Dist (ft) | 579 | 569 | 300 | 538 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 136 | 205 | 735 | 679 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.57 | 0.26 | 0.86 | 0.54 |

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 31 | 21 | 5 | 5 | 31 | 10 | 21 | 582 | 10 | 21 | 261 | 37 |
| Future Volume (vph) | 31 | 21 | 5 | 5 | 31 | 10 | 21 | 582 | 10 | 21 | 261 | 37 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Total Lost time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Frpb, ped/bikes | | 0.99 | | | 0.98 | | | 1.00 | | | 0.99 | |
| Flpb, ped/bikes | | 0.95 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Frt | | 0.99 | | | 0.97 | | | 1.00 | | | 0.98 | |
| Flt Protected | | 0.97 | | | 0.99 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | | 1059 | | | 1351 | | | 1407 | | | 1339 | |
| Flt Permitted | | 0.82 | | | 0.97 | | | 0.98 | | | 0.95 | |
| Satd. Flow (perm) | | 896 | | | 1322 | | | 1384 | | | 1271 | |
| Peak-hour factor, PHF | 0.74 | 0.74 | 0.74 | 0.87 | 0.87 | 0.87 | 0.97 | 0.97 | 0.97 | 0.87 | 0.87 | 0.87 |
| Adj. Flow (vph) | 42 | 28 | 7 | 6 | 36 | 11 | 22 | 600 | 10 | 24 | 300 | 43 |
| RTOR Reduction (vph) | 0 | 3 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 4 | 0 |
| Lane Group Flow (vph) | 0 | 74 | 0 | 0 | 44 | 0 | 0 | 632 | 0 | 0 | 363 | 0 |
| Confl. Peds. (#/hr) | 28 | | 11 | 11 | | 28 | 108 | | 63 | 63 | | 108 |
| Confl. Bikes (#/hr) | | | | | | | | | 5 | | | |
| Heavy Vehicles (%) | 31% | 18% | 4% | 0% | 0% | 0% | 6% | 1% | 11% | 0% | 4% | 3% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 14.3 | | | 14.3 | | | 51.0 | | | 51.0 | |
| Effective Green, g (s) | | 14.3 | | | 14.3 | | | 51.0 | | | 51.0 | |
| Actuated g/C Ratio | | 0.15 | | | 0.15 | | | 0.53 | | | 0.53 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | | | 2.0 | | | 2.0 | |
| Lane Grp Cap (vph) | | 132 | | | 195 | | | 728 | | | 668 | |
| v/s Ratio Prot | | | | | | | | | | | | |
| v/s Ratio Perm | | c0.08 | | | 0.03 | | | c0.46 | | | 0.29 | |
| v/c Ratio | | 0.56 | | | 0.22 | | | 0.87 | | | 0.54 | |
| Uniform Delay, d1 | | 38.4 | | | 36.4 | | | 20.0 | | | 15.2 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 15.9 | | | 2.6 | | | 13.2 | | | 3.2 | |
| Delay (s) | | 54.3 | | | 39.0 | | | 33.2 | | | 18.4 | |
| Level of Service | | D | | | D | | | C | | | B | |
| Approach Delay (s) | | 54.3 | | | 39.0 | | | 33.2 | | | 18.4 | |
| Approach LOS | | D | | | D | | | C | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 30.1 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.61 | | |
| Actuated Cycle Length (s) | 96.9 | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 58.2% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 26 | 16 | 5 | 5 | 26 | 10 | 16 | 525 | 5 | 10 | 198 | 16 |
| Future Volume (vph) | 26 | 16 | 5 | 5 | 26 | 10 | 16 | 525 | 5 | 10 | 198 | 16 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 16 | 12 | 12 | 15 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | 0.98 | | | 0.99 | | | 1.00 | | | 0.99 | |
| Frt | | 0.986 | | | 0.966 | | | 0.999 | | | 0.990 | |
| Flt Protected | | 0.973 | | | 0.994 | | | 0.999 | | | 0.998 | |
| Satd. Flow (prot) | 0 | 1485 | 0 | 0 | 1328 | 0 | 0 | 1577 | 0 | 0 | 1498 | 0 |
| Flt Permitted | | 0.854 | | | 0.977 | | | 0.990 | | | 0.977 | |
| Satd. Flow (perm) | 0 | 1287 | 0 | 0 | 1305 | 0 | 0 | 1560 | 0 | 0 | 1466 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 6 | | | 17 | | | 1 | | | 10 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 602 | | | 677 | | | 676 | | | 535 | |
| Travel Time (s) | | 13.7 | | | 15.4 | | | 15.4 | | | 12.2 | |
| Confl. Peds. (#/hr) | 11 | | 3 | 3 | | 11 | 32 | | 19 | 19 | | 32 |
| Confl. Bikes (#/hr) | | | | | | 2 | | | 1 | | | |
| Peak Hour Factor | 0.78 | 0.78 | 0.78 | 0.60 | 0.60 | 0.60 | 0.94 | 0.94 | 0.94 | 0.89 | 0.89 | 0.89 |
| Heavy Vehicles (%) | 4% | 29% | 0% | 0% | 33% | 0% | 0% | 1% | 0% | 9% | 4% | 8% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | | | | | |
| Adj. Flow (vph) | 33 | 21 | 6 | 8 | 43 | 17 | 17 | 559 | 5 | 11 | 222 | 18 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 60 | 0 | 0 | 68 | 0 | 0 | 581 | 0 | 0 | 251 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.12 | 1.14 | 1.14 | 1.16 | 1.14 | 1.14 | 1.25 | 1.14 | 1.14 | 1.25 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Detector Phase | 5 | 5 | | 5 | 5 | | 1 | 1 | | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 6.0 | 6.0 | | 6.0 | 6.0 | | 20.0 | 20.0 | | 20.0 | 20.0 | |
| Minimum Split (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 24.0 | 24.0 | | 24.0 | 24.0 | |
| Total Split (s) | 24.0 | 24.0 | | 24.0 | 24.0 | | 54.0 | 54.0 | | 54.0 | 54.0 | |
| Total Split (%) | 30.8% | 30.8% | | 30.8% | 30.8% | | 69.2% | 69.2% | | 69.2% | 69.2% | |
| Maximum Green (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 50.0 | 50.0 | | 50.0 | 50.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Lost Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | Max | Max | | Max | Max | | Max | Max | | Max | Max | |
| Walk Time (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | |
| Flash Dont Walk (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | |
| Pedestrian Calls (#/hr) | 4 | 4 | | 4 | 4 | | 13 | 13 | | 13 | 13 | |
| Act Effct Green (s) | | 20.0 | | | 20.0 | | | 50.0 | | | 50.0 | |
| Actuated g/C Ratio | | 0.26 | | | 0.26 | | | 0.64 | | | 0.64 | |
| v/c Ratio | | 0.18 | | | 0.20 | | | 0.58 | | | 0.27 | |
| Control Delay | | 22.5 | | | 19.9 | | | 10.9 | | | 6.7 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 22.5 | | | 19.9 | | | 10.9 | | | 6.7 | |
| LOS | | C | | | B | | | B | | | A | |
| Approach Delay | | 22.5 | | | 19.9 | | | 10.9 | | | 6.7 | |
| Approach LOS | | C | | | B | | | B | | | A | |

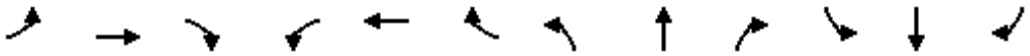
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 78 | | | |
| Actuated Cycle Length: 78 | | | |
| Natural Cycle: 50 | | | |
| Control Type: Semi Act-Uncoord | | | |
| Maximum v/c Ratio: 0.58 | | | |
| Intersection Signal Delay: 11.2 | | Intersection LOS: B | |
| Intersection Capacity Utilization 57.3% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 12: L Street & E 8th Street



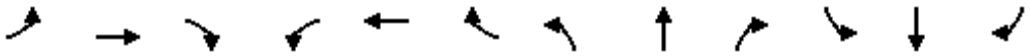
| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 60 | 68 | 581 | 251 |
| v/c Ratio | 0.18 | 0.20 | 0.58 | 0.27 |
| Control Delay | 22.5 | 19.9 | 10.9 | 6.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 22.5 | 19.9 | 10.9 | 6.7 |
| Queue Length 50th (ft) | 20 | 19 | 141 | 44 |
| Queue Length 95th (ft) | 43 | 30 | 230 | 76 |
| Internal Link Dist (ft) | 522 | 597 | 596 | 455 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 334 | 347 | 1000 | 943 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.18 | 0.20 | 0.58 | 0.27 |

Intersection Summary



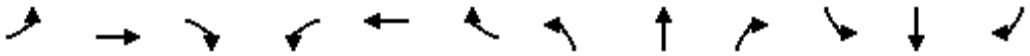
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 26 | 16 | 5 | 5 | 26 | 10 | 16 | 525 | 5 | 10 | 198 | 16 |
| Future Volume (vph) | 26 | 16 | 5 | 5 | 26 | 10 | 16 | 525 | 5 | 10 | 198 | 16 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 16 | 12 | 12 | 15 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Total Lost time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Frpb, ped/bikes | | 1.00 | | | 0.99 | | | 1.00 | | | 0.99 | |
| Flpb, ped/bikes | | 0.99 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Frt | | 0.99 | | | 0.97 | | | 1.00 | | | 0.99 | |
| Flt Protected | | 0.97 | | | 0.99 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | | 1467 | | | 1328 | | | 1573 | | | 1498 | |
| Flt Permitted | | 0.85 | | | 0.98 | | | 0.99 | | | 0.98 | |
| Satd. Flow (perm) | | 1287 | | | 1305 | | | 1560 | | | 1466 | |
| Peak-hour factor, PHF | 0.78 | 0.78 | 0.78 | 0.60 | 0.60 | 0.60 | 0.94 | 0.94 | 0.94 | 0.89 | 0.89 | 0.89 |
| Adj. Flow (vph) | 33 | 21 | 6 | 8 | 43 | 17 | 17 | 559 | 5 | 11 | 222 | 18 |
| RTOR Reduction (vph) | 0 | 4 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 4 | 0 |
| Lane Group Flow (vph) | 0 | 56 | 0 | 0 | 55 | 0 | 0 | 581 | 0 | 0 | 247 | 0 |
| Confl. Peds. (#/hr) | 11 | | 3 | 3 | | 11 | 32 | | 19 | 19 | | 32 |
| Confl. Bikes (#/hr) | | | | | | 2 | | | 1 | | | |
| Heavy Vehicles (%) | 4% | 29% | 0% | 0% | 33% | 0% | 0% | 1% | 0% | 9% | 4% | 8% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 20.0 | | | 20.0 | | | 50.0 | | | 50.0 | |
| Effective Green, g (s) | | 20.0 | | | 20.0 | | | 50.0 | | | 50.0 | |
| Actuated g/C Ratio | | 0.26 | | | 0.26 | | | 0.64 | | | 0.64 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | | | 2.0 | | | 2.0 | |
| Lane Grp Cap (vph) | | 330 | | | 334 | | | 1000 | | | 939 | |
| v/s Ratio Prot | | | | | | | | | | | | |
| v/s Ratio Perm | | c0.04 | | | 0.04 | | | c0.37 | | | 0.17 | |
| v/c Ratio | | 0.17 | | | 0.17 | | | 0.58 | | | 0.26 | |
| Uniform Delay, d1 | | 22.5 | | | 22.5 | | | 8.0 | | | 6.0 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 1.1 | | | 1.1 | | | 2.5 | | | 0.7 | |
| Delay (s) | | 23.6 | | | 23.6 | | | 10.5 | | | 6.7 | |
| Level of Service | | C | | | C | | | B | | | A | |
| Approach Delay (s) | | 23.6 | | | 23.6 | | | 10.5 | | | 6.7 | |
| Approach LOS | | C | | | C | | | B | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 11.2 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.46 | | |
| Actuated Cycle Length (s) | 78.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 57.3% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 5 | 5 | 5 | 16 | 5 | 26 | 478 | 5 | 0 | 152 | 16 |
| Future Volume (vph) | 0 | 5 | 5 | 5 | 16 | 5 | 26 | 478 | 5 | 0 | 152 | 16 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | 0.932 | | | 0.975 | | | 0.999 | | | 0.987 | |
| Flt Protected | | | | | 0.991 | | | 0.997 | | | | |
| Satd. Flow (prot) | 0 | 1771 | 0 | 0 | 1836 | 0 | 0 | 1892 | 0 | 0 | 1875 | 0 |
| Flt Permitted | | | | | 0.991 | | | 0.997 | | | | |
| Satd. Flow (perm) | 0 | 1771 | 0 | 0 | 1836 | 0 | 0 | 1892 | 0 | 0 | 1875 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 487 | | | 392 | | | 93 | | | 676 | |
| Travel Time (s) | | 11.1 | | | 8.9 | | | 2.1 | | | 15.4 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 0 | 5 | 5 | 5 | 17 | 5 | 28 | 520 | 5 | 0 | 165 | 17 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 10 | 0 | 0 | 27 | 0 | 0 | 553 | 0 | 0 | 182 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |

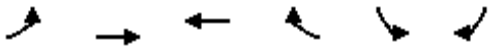
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 51.4% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |



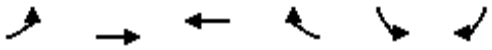
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 5 | 5 | 5 | 16 | 5 | 26 | 478 | 5 | 0 | 152 | 16 |
| Future Volume (Veh/h) | 0 | 5 | 5 | 5 | 16 | 5 | 26 | 478 | 5 | 0 | 152 | 16 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 0 | 5 | 5 | 5 | 17 | 5 | 28 | 520 | 5 | 0 | 165 | 17 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | 676 | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 766 | 754 | 174 | 760 | 760 | 522 | 182 | | | 525 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 766 | 754 | 174 | 760 | 760 | 522 | 182 | | | 525 | | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 100 | 99 | 99 | 98 | 95 | 99 | 98 | | | 100 | | |
| cM capacity (veh/h) | 302 | 334 | 875 | 315 | 331 | 558 | 1405 | | | 1052 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 10 | 27 | 553 | 182 |
| Volume Left | 0 | 5 | 28 | 0 |
| Volume Right | 5 | 5 | 5 | 17 |
| cSH | 483 | 354 | 1405 | 1052 |
| Volume to Capacity | 0.02 | 0.08 | 0.02 | 0.00 |
| Queue Length 95th (ft) | 2 | 6 | 2 | 0 |
| Control Delay (s) | 12.6 | 16.0 | 0.6 | 0.0 |
| Lane LOS | B | C | A | |
| Approach Delay (s) | 12.6 | 16.0 | 0.6 | 0.0 |
| Approach LOS | B | C | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 1.1 | | | |
| Intersection Capacity Utilization | 51.4% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR | Ø2 |
|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | |
| Traffic Volume (vph) | 502 | 347 | 295 | 7 | 0 | 0 | |
| Future Volume (vph) | 502 | 347 | 295 | 7 | 0 | 0 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Lane Util. Factor | 0.95 | 0.95 | 0.95 | 0.95 | 1.00 | 1.00 | |
| Frt | | | 0.996 | | | | |
| Flt Protected | | 0.971 | | | | | |
| Satd. Flow (prot) | 0 | 3505 | 3596 | 0 | 0 | 0 | |
| Flt Permitted | | 0.621 | | | | | |
| Satd. Flow (perm) | 0 | 2242 | 3596 | 0 | 0 | 0 | |
| Right Turn on Red | | | | Yes | | Yes | |
| Satd. Flow (RTOR) | | | 5 | | | | |
| Link Speed (mph) | | 30 | 30 | | 30 | | |
| Link Distance (ft) | | 289 | 295 | | 140 | | |
| Travel Time (s) | | 6.6 | 6.7 | | 3.2 | | |
| Peak Hour Factor | 0.85 | 0.85 | 0.73 | 0.73 | 0.92 | 0.92 | |
| Adj. Flow (vph) | 591 | 408 | 404 | 10 | 0 | 0 | |
| Shared Lane Traffic (%) | | | | | | | |
| Lane Group Flow (vph) | 0 | 999 | 414 | 0 | 0 | 0 | |
| Enter Blocked Intersection | No | No | No | No | No | No | |
| Lane Alignment | Left | Left | Left | Right | Left | Right | |
| Median Width(ft) | | 0 | 0 | | 0 | | |
| Link Offset(ft) | | 0 | 0 | | 0 | | |
| Crosswalk Width(ft) | | 16 | 16 | | 16 | | |
| Two way Left Turn Lane | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Turning Speed (mph) | 15 | | | 9 | 15 | 9 | |
| Number of Detectors | 1 | 2 | 2 | | | | |
| Detector Template | Left | Thru | Thru | | | | |
| Leading Detector (ft) | 20 | 100 | 100 | | | | |
| Trailing Detector (ft) | 0 | 0 | 0 | | | | |
| Detector 1 Position(ft) | 0 | 0 | 0 | | | | |
| Detector 1 Size(ft) | 20 | 6 | 6 | | | | |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | | | | |
| Detector 1 Channel | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | | | | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | | | | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | | | | |
| Detector 2 Position(ft) | | 94 | 94 | | | | |
| Detector 2 Size(ft) | | 6 | 6 | | | | |
| Detector 2 Type | | Cl+Ex | Cl+Ex | | | | |
| Detector 2 Channel | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | 0.0 | | | | |
| Turn Type | Perm | NA | NA | | | | |
| Protected Phases | | 1 | 1 | | | | 2 |
| Permitted Phases | 1 | | | | | | |
| Detector Phase | 1 | 1 | 1 | | | | |
| Switch Phase | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | 8.0 | | | | 10.0 |



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR | Ø2 |
|---|---|---|---|---|---|---|---|
| Minimum Split (s) | 22.0 | 22.0 | 22.0 | | | | 25.0 |
| Total Split (s) | 70.0 | 70.0 | 70.0 | | | | 25.0 |
| Total Split (%) | 73.7% | 73.7% | 73.7% | | | | 26% |
| Maximum Green (s) | 62.6 | 62.6 | 62.6 | | | | 20.5 |
| Yellow Time (s) | 5.4 | 5.4 | 5.4 | | | | 3.5 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | | | 1.0 |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | | | |
| Total Lost Time (s) | | 7.4 | 7.4 | | | | |
| Lead/Lag | Lead | Lead | Lead | | | | Lag |
| Lead-Lag Optimize? | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | | | | 2.0 |
| Recall Mode | Max | Max | Max | | | | None |
| Walk Time (s) | | | | | | | 18.0 |
| Flash Dont Walk (s) | | | | | | | 1.0 |
| Pedestrian Calls (#/hr) | | | | | | | 24 |
| Act Effct Green (s) | | 83.6 | 83.6 | | | | |
| Actuated g/C Ratio | | 0.89 | 0.89 | | | | |
| v/c Ratio | | 0.50 | 0.13 | | | | |
| Control Delay | | 5.2 | 2.7 | | | | |
| Queue Delay | | 0.0 | 0.0 | | | | |
| Total Delay | | 5.2 | 2.7 | | | | |
| LOS | | A | A | | | | |
| Approach Delay | | 5.2 | 2.7 | | | | |
| Approach LOS | | A | A | | | | |

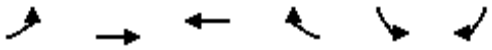
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 95 | | | |
| Actuated Cycle Length: 94.4 | | | |
| Natural Cycle: 60 | | | |
| Control Type: Semi Act-Uncoord | | | |
| Maximum v/c Ratio: 0.50 | | | |
| Intersection Signal Delay: 4.5 | | Intersection LOS: A | |
| Intersection Capacity Utilization 48.5% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 14: Day Blvd Ped



| Lane Group | EBT | WBT |
|---|---|---|
| Lane Group Flow (vph) | 999 | 414 |
| v/c Ratio | 0.50 | 0.13 |
| Control Delay | 5.2 | 2.7 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 5.2 | 2.7 |
| Queue Length 50th (ft) | 0 | 0 |
| Queue Length 95th (ft) | 198 | 45 |
| Internal Link Dist (ft) | 209 | 215 |
| Turn Bay Length (ft) | | |
| Base Capacity (vph) | 1986 | 3187 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.50 | 0.13 |

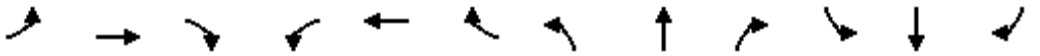
Intersection Summary



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 502 | 347 | 295 | 7 | 0 | 0 |
| Future Volume (vph) | 502 | 347 | 295 | 7 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 7.4 | 7.4 | | | |
| Lane Util. Factor | | 0.95 | 0.95 | | | |
| Frt | | 1.00 | 1.00 | | | |
| Flt Protected | | 0.97 | 1.00 | | | |
| Satd. Flow (prot) | | 3506 | 3597 | | | |
| Flt Permitted | | 0.62 | 1.00 | | | |
| Satd. Flow (perm) | | 2243 | 3597 | | | |
| Peak-hour factor, PHF | 0.85 | 0.85 | 0.73 | 0.73 | 0.92 | 0.92 |
| Adj. Flow (vph) | 591 | 408 | 404 | 10 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 1 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 999 | 413 | 0 | 0 | 0 |
| Turn Type | Perm | NA | NA | | | |
| Protected Phases | | 1 | 1 | | | |
| Permitted Phases | 1 | | | | | |
| Actuated Green, G (s) | | 78.7 | 78.7 | | | |
| Effective Green, g (s) | | 78.7 | 78.7 | | | |
| Actuated g/C Ratio | | 0.81 | 0.81 | | | |
| Clearance Time (s) | | 7.4 | 7.4 | | | |
| Vehicle Extension (s) | | 2.0 | 2.0 | | | |
| Lane Grp Cap (vph) | | 1816 | 2912 | | | |
| v/s Ratio Prot | | | 0.11 | | | |
| v/s Ratio Perm | | c0.45 | | | | |
| v/c Ratio | | 0.55 | 0.14 | | | |
| Uniform Delay, d1 | | 3.2 | 2.0 | | | |
| Progression Factor | | 1.00 | 1.00 | | | |
| Incremental Delay, d2 | | 1.2 | 0.1 | | | |
| Delay (s) | | 4.4 | 2.1 | | | |
| Level of Service | | A | A | | | |
| Approach Delay (s) | | 4.4 | 2.1 | | 0.0 | |
| Approach LOS | | A | A | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 3.7 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.51 | | |
| Actuated Cycle Length (s) | 97.2 | Sum of lost time (s) | 11.9 |
| Intersection Capacity Utilization | 48.5% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



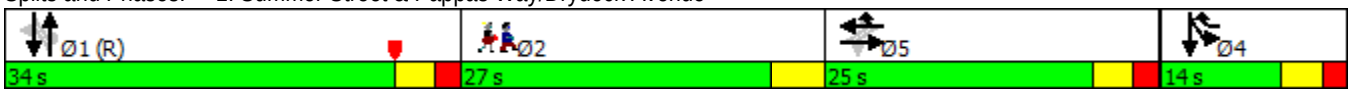
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 67 | 39 | 16 | 272 | 122 | 321 | 10 | 627 | 141 | 91 | 939 | 228 |
| Future Volume (vph) | 67 | 39 | 16 | 272 | 122 | 321 | 10 | 627 | 141 | 91 | 939 | 228 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 14 | 12 | 12 | 13 | 16 | 10 | 11 | 12 | 13 | 12 | 12 |
| Storage Length (ft) | 0 | | 0 | 350 | | 0 | 70 | | 0 | 350 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor | | 0.99 | | | 0.98 | | 0.98 | 0.99 | | 0.99 | 0.96 | |
| Frt | | 0.982 | | | | 0.850 | | 0.972 | | | 0.971 | |
| Flt Protected | | 0.973 | | | 0.967 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1642 | 0 | 0 | 1703 | 1569 | 1516 | 2943 | 0 | 1569 | 2941 | 0 |
| Flt Permitted | | 0.358 | | | 0.710 | | 0.146 | | | 0.146 | | |
| Satd. Flow (perm) | 0 | 601 | 0 | 0 | 1221 | 1569 | 228 | 2943 | 0 | 240 | 2941 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 7 | | | | 353 | | 27 | | | 37 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 745 | | | 950 | | | 1510 | | | 501 | |
| Travel Time (s) | | 16.9 | | | 21.6 | | | 34.3 | | | 11.4 | |
| Confl. Peds. (#/hr) | 21 | | 33 | 33 | | 21 | 138 | | 34 | 34 | | 138 |
| Confl. Bikes (#/hr) | | | 1 | | | 1 | | | 2 | | | 25 |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.91 | 0.91 | 0.91 | 0.90 | 0.90 | 0.90 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 6% | 3% | 8% | 0% | 1% | 5% | 0% | 3% | 2% | 7% | 3% | 4% |
| Adj. Flow (vph) | 79 | 46 | 19 | 299 | 134 | 353 | 11 | 697 | 157 | 98 | 1010 | 245 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 144 | 0 | 0 | 433 | 353 | 11 | 854 | 0 | 98 | 1255 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 6 | | | 13 | | | 17 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.05 | 1.14 | 1.14 | 1.10 | 0.97 | 1.25 | 1.19 | 1.14 | 1.10 | 1.14 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | 20 | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | 20 | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |

| Lane Group | Ø2 |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | |
| Future Volume (vph) | |
| Ideal Flow (vphpl) | |
| Lane Width (ft) | |
| Storage Length (ft) | |
| Storage Lanes | |
| Taper Length (ft) | |
| Lane Util. Factor | |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Right Turn on Red | |
| Satd. Flow (RTOR) | |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | |
| Heavy Vehicles (%) | |
| Adj. Flow (vph) | |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | |
| Enter Blocked Intersection | |
| Lane Alignment | |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | |
| Turning Speed (mph) | |
| Number of Detectors | |
| Detector Template | |
| Leading Detector (ft) | |
| Trailing Detector (ft) | |
| Detector 1 Position(ft) | |
| Detector 1 Size(ft) | |
| Detector 1 Type | |
| Detector 1 Channel | |
| Detector 1 Extend (s) | |
| Detector 1 Queue (s) | |
| Detector 1 Delay (s) | |
| Detector 2 Position(ft) | |
| Detector 2 Size(ft) | |
| Detector 2 Type | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | pt+ov | Perm | NA | | D.P+P | NA | |
| Protected Phases | | 5 | | | 5 | 5 4 | | 1 | | 4 | 1 4 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Detector Phase | 5 | 5 | | 5 | 5 | 5 4 | 1 | 1 | | 4 | 1 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | | |
| Minimum Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | | 13.0 | 13.0 | | 13.0 | | |
| Total Split (s) | 25.0 | 25.0 | | 25.0 | 25.0 | | 34.0 | 34.0 | | 14.0 | | |
| Total Split (%) | 25.0% | 25.0% | | 25.0% | 25.0% | | 34.0% | 34.0% | | 14.0% | | |
| Maximum Green (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 29.0 | 29.0 | | 9.0 | | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | 0.0 | 0.0 | | 0.0 | | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | 5.0 | 5.0 | | 5.0 | | |
| Lead/Lag | | | | | | | Lead | Lead | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | | |
| Recall Mode | None | None | | None | None | | C-Max | C-Max | | None | | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 30.8 | | | 30.8 | 44.8 | 29.0 | 29.0 | | 38.0 | 43.0 | |
| Actuated g/C Ratio | | 0.31 | | | 0.31 | 0.45 | 0.29 | 0.29 | | 0.38 | 0.43 | |
| v/c Ratio | | 0.76 | | | 1.15 | 0.39 | 0.17 | 0.98 | | 0.47 | 0.98 | |
| Control Delay | | 63.0 | | | 130.7 | 4.1 | 34.1 | 60.9 | | 25.2 | 48.2 | |
| Queue Delay | | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | | 63.0 | | | 130.7 | 4.1 | 34.1 | 60.9 | | 25.2 | 48.2 | |
| LOS | | E | | | F | A | C | E | | C | D | |
| Approach Delay | | 63.0 | | | 73.8 | | | 60.6 | | | 46.5 | |
| Approach LOS | | E | | | E | | | E | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 100 | | | |
| Actuated Cycle Length: 100 | | | |
| Offset: 0 (0%), Referenced to phase 1:NBSB, Start of Yellow | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 1.15 | | | |
| Intersection Signal Delay: 58.0 | | Intersection LOS: E | |
| Intersection Capacity Utilization 93.3% | | ICU Level of Service F | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 1: Summer Street & Pappas Way/Drydock Avenue



| Lane Group | Ø2 |
|---|---|
| Detector 2 Channel | |
| Detector 2 Extend (s) | |
| Turn Type | |
| Protected Phases | 2 |
| Permitted Phases | |
| Detector Phase | |
| Switch Phase | |
| Minimum Initial (s) | 4.0 |
| Minimum Split (s) | 27.0 |
| Total Split (s) | 27.0 |
| Total Split (%) | 27% |
| Maximum Green (s) | 23.0 |
| Yellow Time (s) | 4.0 |
| All-Red Time (s) | 0.0 |
| Lost Time Adjust (s) | |
| Total Lost Time (s) | |
| Lead/Lag | Lag |
| Lead-Lag Optimize? | |
| Vehicle Extension (s) | 2.0 |
| Recall Mode | None |
| Walk Time (s) | 7.0 |
| Flash Dont Walk (s) | 16.0 |
| Pedestrian Calls (#/hr) | 28 |
| Act Effct Green (s) | |
| Actuated g/C Ratio | |
| v/c Ratio | |
| Control Delay | |
| Queue Delay | |
| Total Delay | |
| LOS | |
| Approach Delay | |
| Approach LOS | |

| Intersection Summary |
|---|



| Lane Group | EBT | WBT | WBR | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 144 | 433 | 353 | 11 | 854 | 98 | 1255 |
| v/c Ratio | 0.76 | 1.15 | 0.39 | 0.17 | 0.98 | 0.47 | 0.98 |
| Control Delay | 63.0 | 130.7 | 4.1 | 34.1 | 60.9 | 25.2 | 48.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 63.0 | 130.7 | 4.1 | 34.1 | 60.9 | 25.2 | 48.2 |
| Queue Length 50th (ft) | ~105 | ~415 | 0 | 5 | 276 | 37 | 394 |
| Queue Length 95th (ft) | #212 | #603 | 60 | 22 | #410 | 70 | #557 |
| Internal Link Dist (ft) | 665 | 870 | | | 1430 | | 421 |
| Turn Bay Length (ft) | | | | 70 | | 350 | |
| Base Capacity (vph) | 189 | 376 | 897 | 66 | 872 | 210 | 1285 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.76 | 1.15 | 0.39 | 0.17 | 0.98 | 0.47 | 0.98 |

Intersection Summary

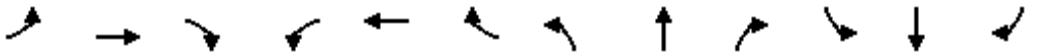
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 67 | 39 | 16 | 272 | 122 | 321 | 10 | 627 | 141 | 91 | 939 | 228 |
| Future Volume (vph) | 67 | 39 | 16 | 272 | 122 | 321 | 10 | 627 | 141 | 91 | 939 | 228 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 14 | 12 | 12 | 13 | 16 | 10 | 11 | 12 | 13 | 12 | 12 |
| Total Lost time (s) | | 5.0 | | | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | 1.00 | 1.00 | 0.95 | | 1.00 | 0.95 | |
| Frpb, ped/bikes | | 0.99 | | | 1.00 | 1.00 | 1.00 | 0.99 | | 1.00 | 0.96 | |
| Flpb, ped/bikes | | 1.00 | | | 0.98 | 1.00 | 0.98 | 1.00 | | 1.00 | 1.00 | |
| Frt | | 0.98 | | | 1.00 | 0.85 | 1.00 | 0.97 | | 1.00 | 0.97 | |
| Flt Protected | | 0.97 | | | 0.97 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 1639 | | | 1674 | 1569 | 1483 | 2943 | | 1568 | 2936 | |
| Flt Permitted | | 0.36 | | | 0.71 | 1.00 | 0.15 | 1.00 | | 0.15 | 1.00 | |
| Satd. Flow (perm) | | 603 | | | 1230 | 1569 | 228 | 2943 | | 241 | 2936 | |
| Peak-hour factor, PHF | 0.85 | 0.85 | 0.85 | 0.91 | 0.91 | 0.91 | 0.90 | 0.90 | 0.90 | 0.93 | 0.93 | 0.93 |
| Adj. Flow (vph) | 79 | 46 | 19 | 299 | 134 | 353 | 11 | 697 | 157 | 98 | 1010 | 245 |
| RTOR Reduction (vph) | 0 | 5 | 0 | 0 | 0 | 195 | 0 | 20 | 0 | 0 | 22 | 0 |
| Lane Group Flow (vph) | 0 | 139 | 0 | 0 | 433 | 158 | 11 | 834 | 0 | 98 | 1233 | 0 |
| Confl. Peds. (#/hr) | 21 | | 33 | 33 | | 21 | 138 | | 34 | 34 | | 138 |
| Confl. Bikes (#/hr) | | | 1 | | | 1 | | | 2 | | | 25 |
| Heavy Vehicles (%) | 6% | 3% | 8% | 0% | 1% | 5% | 0% | 3% | 2% | 7% | 3% | 4% |
| Turn Type | Perm | NA | | Perm | NA | pt+ov | Perm | NA | | D.P+P | NA | |
| Protected Phases | | 5 | | | 5 | 5 4 | | 1 | | 4 | 1 4 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 30.8 | | | 30.8 | 44.8 | 27.4 | 27.4 | | 36.4 | 41.4 | |
| Effective Green, g (s) | | 30.8 | | | 30.8 | 44.8 | 27.4 | 27.4 | | 36.4 | 41.4 | |
| Actuated g/C Ratio | | 0.31 | | | 0.31 | 0.45 | 0.27 | 0.27 | | 0.36 | 0.41 | |
| Clearance Time (s) | | 5.0 | | | 5.0 | | 5.0 | 5.0 | | 5.0 | | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | | 2.0 | 2.0 | | 2.0 | | |
| Lane Grp Cap (vph) | | 185 | | | 378 | 702 | 62 | 806 | | 207 | 1215 | |
| v/s Ratio Prot | | | | | | 0.10 | | 0.28 | | 0.04 | c0.42 | |
| v/s Ratio Perm | | 0.23 | | | c0.35 | | 0.05 | | | 0.13 | | |
| v/c Ratio | | 0.75 | | | 1.15 | 0.23 | 0.18 | 1.04 | | 0.47 | 1.02 | |
| Uniform Delay, d1 | | 31.2 | | | 34.6 | 16.9 | 27.7 | 36.3 | | 23.7 | 29.3 | |
| Progression Factor | | 1.00 | | | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 14.2 | | | 92.1 | 0.1 | 6.2 | 41.1 | | 0.6 | 29.6 | |
| Delay (s) | | 45.3 | | | 126.7 | 17.0 | 33.9 | 77.4 | | 24.3 | 58.9 | |
| Level of Service | | D | | | F | B | C | E | | C | E | |
| Approach Delay (s) | | 45.3 | | | 77.4 | | | 76.9 | | | 56.4 | |
| Approach LOS | | D | | | E | | | E | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 66.8 | HCM 2000 Level of Service | E |
| HCM 2000 Volume to Capacity ratio | 0.95 | | |
| Actuated Cycle Length (s) | 100.0 | Sum of lost time (s) | 19.0 |
| Intersection Capacity Utilization | 93.3% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

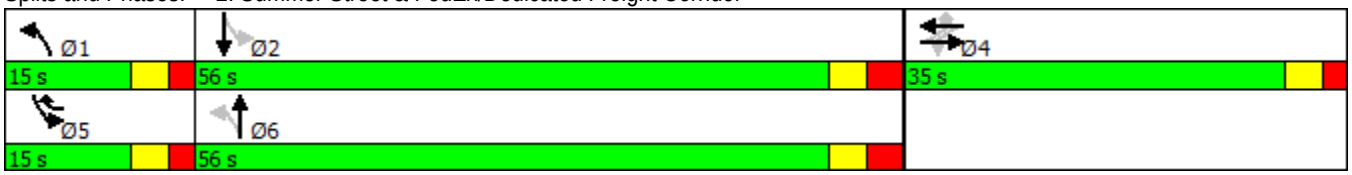


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 21 | 0 | 5 | 16 | 0 | 10 | 5 | 748 | 5 | 0 | 1211 | 16 |
| Future Volume (vph) | 21 | 0 | 5 | 16 | 0 | 10 | 5 | 748 | 5 | 0 | 1211 | 16 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 13 | 13 | 13 | 12 | 12 | 12 | 10 | 10 | 10 | 11 | 11 | 11 |
| Storage Length (ft) | 0 | | 0 | 0 | | 60 | 60 | | 0 | 120 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 50 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Frt | | 0.976 | | | | 0.850 | | 0.999 | | | 0.998 | |
| Flt Protected | | 0.961 | | | 0.950 | | 0.950 | | | | | |
| Satd. Flow (prot) | 0 | 1657 | 0 | 0 | 1624 | 727 | 1516 | 3029 | 0 | 826 | 3044 | 0 |
| Flt Permitted | | 0.752 | | | 0.739 | | 0.174 | | | | | |
| Satd. Flow (perm) | 0 | 1297 | 0 | 0 | 1264 | 727 | 278 | 3029 | 0 | 826 | 3044 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 82 | | | | 31 | | 1 | | | 2 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 228 | | | 352 | | | 665 | | | 1510 | |
| Travel Time (s) | | 5.2 | | | 8.0 | | | 15.1 | | | 34.3 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 100% | 0% | 0% | 0% | 100% | 3% | 0% |
| Adj. Flow (vph) | 23 | 0 | 5 | 17 | 0 | 11 | 5 | 813 | 5 | 0 | 1316 | 17 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 28 | 0 | 0 | 17 | 11 | 5 | 818 | 0 | 0 | 1333 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 12 | | | 11 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.10 | 1.10 | 1.10 | 1.14 | 1.14 | 1.14 | 1.25 | 1.25 | 1.25 | 1.19 | 1.19 | 1.19 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | 20 | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | 20 | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | pm+ov | pm+pt | NA | | pm+pt | NA | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Protected Phases | | 4 | | | 4 | 5 | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 4 | | | 4 | | 4 | 6 | 6 | | 2 | | |
| Detector Phase | 4 | 4 | | 4 | 4 | 5 | 1 | 6 | | 5 | 2 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 6.0 | 6.0 | | 6.0 | 6.0 | 6.0 | 6.0 | 10.0 | | 6.0 | 10.0 | |
| Minimum Split (s) | 26.0 | 26.0 | | 26.0 | 26.0 | 11.0 | 11.0 | 24.0 | | 11.0 | 24.0 | |
| Total Split (s) | 35.0 | 35.0 | | 35.0 | 35.0 | 15.0 | 15.0 | 56.0 | | 15.0 | 56.0 | |
| Total Split (%) | 33.0% | 33.0% | | 33.0% | 33.0% | 14.2% | 14.2% | 52.8% | | 14.2% | 52.8% | |
| Maximum Green (s) | 30.0 | 30.0 | | 30.0 | 30.0 | 10.0 | 10.0 | 50.0 | | 10.0 | 50.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 3.0 | | 2.0 | 3.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | 5.0 | 5.0 | 6.0 | | 5.0 | 6.0 | |
| Lead/Lag | | | | | | Lead | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | None | None | | None | None | None | None | Ped | | None | Max | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | | 7.0 | | | | |
| Flash Dont Walk (s) | 14.0 | 14.0 | | 14.0 | 14.0 | | | 9.0 | | | | |
| Pedestrian Calls (#/hr) | 10 | 10 | | 10 | 10 | | | 10 | | | | |
| Act Effct Green (s) | | 8.5 | | | 8.5 | 15.1 | 59.0 | 59.5 | | | 59.5 | |
| Actuated g/C Ratio | | 0.12 | | | 0.12 | 0.20 | 0.80 | 0.81 | | | 0.81 | |
| v/c Ratio | | 0.13 | | | 0.12 | 0.06 | 0.02 | 0.34 | | | 0.54 | |
| Control Delay | | 1.2 | | | 30.4 | 2.4 | 4.0 | 5.6 | | | 7.8 | |
| Queue Delay | | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | | | 0.0 | |
| Total Delay | | 1.2 | | | 30.4 | 2.4 | 4.0 | 5.6 | | | 7.8 | |
| LOS | | A | | | C | A | A | A | | | A | |
| Approach Delay | | 1.2 | | | 19.4 | | | 5.6 | | | 7.8 | |
| Approach LOS | | A | | | B | | | A | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 106 | | | |
| Actuated Cycle Length: 73.8 | | | |
| Natural Cycle: 80 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 0.54 | | | |
| Intersection Signal Delay: 7.0 | | Intersection LOS: A | |
| Intersection Capacity Utilization 55.2% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

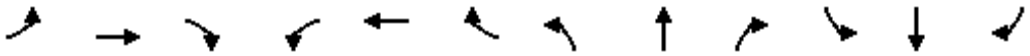
Splits and Phases: 2: Summer Street & FedEx/Dedicated Freight Corridor





| Lane Group | EBT | WBT | WBR | NBL | NBT | SBT |
|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 28 | 17 | 11 | 5 | 818 | 1333 |
| v/c Ratio | 0.13 | 0.12 | 0.06 | 0.02 | 0.34 | 0.54 |
| Control Delay | 1.2 | 30.4 | 2.4 | 4.0 | 5.6 | 7.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 1.2 | 30.4 | 2.4 | 4.0 | 5.6 | 7.8 |
| Queue Length 50th (ft) | 0 | 7 | 0 | 1 | 44 | 95 |
| Queue Length 95th (ft) | 0 | 25 | 4 | 4 | 201 | 419 |
| Internal Link Dist (ft) | 148 | 272 | | | 585 | 1430 |
| Turn Bay Length (ft) | | | 60 | 60 | | |
| Base Capacity (vph) | 583 | 521 | 211 | 394 | 2441 | 2454 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.05 | 0.03 | 0.05 | 0.01 | 0.34 | 0.54 |

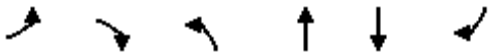
Intersection Summary



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 21 | 0 | 5 | 16 | 0 | 10 | 5 | 748 | 5 | 0 | 1211 | 16 |
| Future Volume (vph) | 21 | 0 | 5 | 16 | 0 | 10 | 5 | 748 | 5 | 0 | 1211 | 16 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 13 | 13 | 13 | 12 | 12 | 12 | 10 | 10 | 10 | 11 | 11 | 11 |
| Total Lost time (s) | | 5.0 | | | 5.0 | 5.0 | 5.0 | 6.0 | | | 6.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | 1.00 | 1.00 | 0.95 | | | 0.95 | |
| Frt | | 0.98 | | | 1.00 | 0.85 | 1.00 | 1.00 | | | 1.00 | |
| Flt Protected | | 0.96 | | | 0.95 | 1.00 | 0.95 | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | | 1656 | | | 1624 | 727 | 1516 | 3030 | | | 3045 | |
| Flt Permitted | | 0.75 | | | 0.74 | 1.00 | 0.17 | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | | 1298 | | | 1264 | 727 | 278 | 3030 | | | 3045 | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 23 | 0 | 5 | 17 | 0 | 11 | 5 | 813 | 5 | 0 | 1316 | 17 |
| RTOR Reduction (vph) | 0 | 26 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 1 | 0 |
| Lane Group Flow (vph) | 0 | 2 | 0 | 0 | 17 | 1 | 5 | 818 | 0 | 0 | 1332 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 100% | 0% | 0% | 0% | 100% | 3% | 0% |
| Turn Type | Perm | NA | | Perm | NA | pm+ov | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | | 4 | | | 4 | 5 | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 4 | | | 4 | | 4 | 6 | 6 | | 2 | | |
| Actuated Green, G (s) | | 6.0 | | | 6.0 | 7.0 | 58.0 | 57.0 | | | 57.0 | |
| Effective Green, g (s) | | 6.0 | | | 6.0 | 7.0 | 58.0 | 57.0 | | | 57.0 | |
| Actuated g/C Ratio | | 0.08 | | | 0.08 | 0.09 | 0.72 | 0.71 | | | 0.71 | |
| Clearance Time (s) | | 5.0 | | | 5.0 | 5.0 | 5.0 | 6.0 | | | 6.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | 2.0 | 2.0 | 2.0 | | | 2.0 | |
| Lane Grp Cap (vph) | | 97 | | | 94 | 109 | 217 | 2158 | | | 2169 | |
| v/s Ratio Prot | | | | | | c0.00 | 0.00 | 0.27 | | | c0.44 | |
| v/s Ratio Perm | | 0.00 | | | c0.01 | 0.00 | 0.02 | | | | | |
| v/c Ratio | | 0.02 | | | 0.18 | 0.01 | 0.02 | 0.38 | | | 0.61 | |
| Uniform Delay, d1 | | 34.3 | | | 34.7 | 33.3 | 3.5 | 4.5 | | | 5.9 | |
| Progression Factor | | 1.00 | | | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 0.0 | | | 0.3 | 0.0 | 0.0 | 0.0 | | | 1.3 | |
| Delay (s) | | 34.3 | | | 35.0 | 33.3 | 3.5 | 4.6 | | | 7.2 | |
| Level of Service | | C | | | D | C | A | A | | | A | |
| Approach Delay (s) | | 34.3 | | | 34.4 | | | 4.6 | | | 7.2 | |
| Approach LOS | | C | | | C | | | A | | | A | |

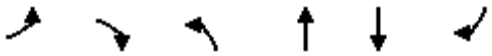
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 6.9 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.56 | | |
| Actuated Cycle Length (s) | 80.0 | Sum of lost time (s) | 16.0 |
| Intersection Capacity Utilization | 55.2% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 16 | 10 | 0 | 733 | 1190 | 10 |
| Future Volume (vph) | 16 | 10 | 0 | 733 | 1190 | 10 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 14 | 12 | 10 | 10 | 10 | 10 |
| Lane Util. Factor | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 0.95 |
| Ped Bike Factor | | | | | | |
| Frt | 0.949 | | | | 0.999 | |
| Flt Protected | 0.970 | | | | | |
| Satd. Flow (prot) | 1618 | 0 | 0 | 2973 | 2970 | 0 |
| Flt Permitted | 0.970 | | | | | |
| Satd. Flow (perm) | 1618 | 0 | 0 | 2973 | 2970 | 0 |
| Link Speed (mph) | 30 | | | 30 | 30 | |
| Link Distance (ft) | 384 | | | 365 | 665 | |
| Travel Time (s) | 8.7 | | | 8.3 | 15.1 | |
| Confl. Peds. (#/hr) | | | 153 | | | 153 |
| Confl. Bikes (#/hr) | | | | | | 34 |
| Peak Hour Factor | 0.65 | 0.65 | 0.85 | 0.85 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 6% | 0% | 0% | 2% | 2% | 0% |
| Parking (#/hr) | | | 1 | | | 1 |
| Adj. Flow (vph) | 25 | 15 | 0 | 862 | 1240 | 10 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 40 | 0 | 0 | 862 | 1250 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(ft) | 14 | | | 10 | 10 | |
| Link Offset(ft) | 0 | | | 0 | 0 | |
| Crosswalk Width(ft) | 16 | | | 16 | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.05 | 1.14 | 1.25 | 1.25 | 1.25 | 1.25 |
| Turning Speed (mph) | 15 | 9 | 15 | | | 9 |
| Sign Control | Stop | | | Free | Free | |

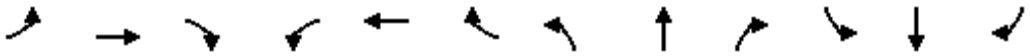
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 47.0% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 16 | 10 | 0 | 733 | 1190 | 10 |
| Future Volume (Veh/h) | 16 | 10 | 0 | 733 | 1190 | 10 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.65 | 0.65 | 0.85 | 0.85 | 0.96 | 0.96 |
| Hourly flow rate (vph) | 25 | 15 | 0 | 862 | 1240 | 10 |
| Pedestrians | 153 | | | | | |
| Lane Width (ft) | 14.0 | | | | | |
| Walking Speed (ft/s) | 4.0 | | | | | |
| Percent Blockage | 15 | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | 365 | 665 | |
| pX, platoon unblocked | 0.87 | 0.81 | 0.81 | | | |
| vC, conflicting volume | 1829 | 778 | 1403 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 1019 | 246 | 1020 | | | |
| tC, single (s) | 6.9 | 6.9 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.6 | 3.3 | 2.2 | | | |
| p0 queue free % | 85 | 97 | 100 | | | |
| cM capacity (veh/h) | 167 | 522 | 472 | | | |

| Direction, Lane # | EB 1 | NB 1 | NB 2 | SB 1 | SB 2 |
|---|---|---|---|---|---|
| Volume Total | 40 | 287 | 575 | 827 | 423 |
| Volume Left | 25 | 0 | 0 | 0 | 0 |
| Volume Right | 15 | 0 | 0 | 0 | 10 |
| cSH | 224 | 472 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.18 | 0.00 | 0.34 | 0.49 | 0.25 |
| Queue Length 95th (ft) | 16 | 0 | 0 | 0 | 0 |
| Control Delay (s) | 24.5 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane LOS | C | | | | |
| Approach Delay (s) | 24.5 | 0.0 | | 0.0 | |
| Approach LOS | C | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.5 | | |
| Intersection Capacity Utilization | 47.0% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



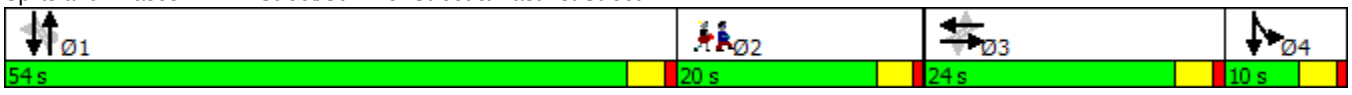
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 33 | 104 | 62 | 21 | 41 | 158 | 26 | 536 | 21 | 285 | 778 | 137 |
| Future Volume (vph) | 33 | 104 | 62 | 21 | 41 | 158 | 26 | 536 | 21 | 285 | 778 | 137 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 15 | 12 | 12 | 16 | 12 | 12 | 9 | 12 | 12 | 12 | 12 |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 100 | | 0 | 100 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Ped Bike Factor | | 0.95 | | | 0.95 | | | 1.00 | | | 0.98 | |
| Frt | | 0.958 | | | 0.903 | | | 0.995 | | | 0.983 | |
| Flt Protected | | 0.992 | | | 0.995 | | | 0.998 | | | 0.988 | |
| Satd. Flow (prot) | 0 | 1657 | 0 | 0 | 1584 | 0 | 0 | 2891 | 0 | 0 | 3038 | 0 |
| Flt Permitted | | 0.792 | | | 0.926 | | | 0.812 | | | 0.621 | |
| Satd. Flow (perm) | 0 | 1318 | 0 | 0 | 1468 | 0 | 0 | 2350 | 0 | 0 | 1901 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 19 | | | 104 | | | 5 | | | 19 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 540 | | | 576 | | | 340 | | | 365 | |
| Travel Time (s) | | 12.3 | | | 13.1 | | | 7.7 | | | 8.3 | |
| Confl. Peds. (#/hr) | 29 | | 36 | 36 | | 29 | 134 | | 51 | 51 | | 134 |
| Confl. Bikes (#/hr) | | | 12 | | | 1 | | | | | | 19 |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.85 | 0.85 | 0.85 | 0.88 | 0.88 | 0.88 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 13% | 1% | 2% | 0% | 5% | 6% | 0% | 0% | 5% | 1% | 2% | 4% |
| Adj. Flow (vph) | 38 | 121 | 72 | 25 | 48 | 186 | 30 | 609 | 24 | 317 | 864 | 152 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 231 | 0 | 0 | 259 | 0 | 0 | 663 | 0 | 0 | 1333 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.01 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 1.30 | 1.14 | 1.14 | 1.14 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |

| Lane Group | Ø2 |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | |
| Future Volume (vph) | |
| Ideal Flow (vphpl) | |
| Lane Width (ft) | |
| Storage Length (ft) | |
| Storage Lanes | |
| Taper Length (ft) | |
| Lane Util. Factor | |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Right Turn on Red | |
| Satd. Flow (RTOR) | |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | |
| Heavy Vehicles (%) | |
| Adj. Flow (vph) | |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | |
| Enter Blocked Intersection | |
| Lane Alignment | |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | |
| Turning Speed (mph) | |
| Number of Detectors | |
| Detector Template | |
| Leading Detector (ft) | |
| Trailing Detector (ft) | |
| Detector 1 Position(ft) | |
| Detector 1 Size(ft) | |
| Detector 1 Type | |
| Detector 1 Channel | |
| Detector 1 Extend (s) | |
| Detector 1 Queue (s) | |
| Detector 1 Delay (s) | |
| Detector 2 Position(ft) | |
| Detector 2 Size(ft) | |
| Detector 2 Type | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | D.P+P | NA | |
| Protected Phases | | 3 | | | 3 | | | 1 | | 4 | 1 4 | |
| Permitted Phases | 3 | | | 3 | | | 1 | | | 1 | | |
| Detector Phase | 3 | 3 | | 3 | 3 | | 1 | 1 | | 4 | 1 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 10.0 | 10.0 | | 5.0 | | |
| Minimum Split (s) | 11.0 | 11.0 | | 11.0 | 11.0 | | 14.0 | 14.0 | | 9.0 | | |
| Total Split (s) | 24.0 | 24.0 | | 24.0 | 24.0 | | 54.0 | 54.0 | | 10.0 | | |
| Total Split (%) | 22.2% | 22.2% | | 22.2% | 22.2% | | 50.0% | 50.0% | | 9.3% | | |
| Maximum Green (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 50.0 | 50.0 | | 6.0 | | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | |
| Total Lost Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | | |
| Lead/Lag | Lead | Lead | | Lead | Lead | | Lead | Lead | | Lag | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 1.0 | | |
| Recall Mode | None | None | | None | None | | Max | Max | | None | | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 19.3 | | | 19.3 | | | 50.7 | | | 56.7 | |
| Actuated g/C Ratio | | 0.19 | | | 0.19 | | | 0.51 | | | 0.57 | |
| v/c Ratio | | 0.85 | | | 0.70 | | | 0.55 | | | 1.14 | |
| Control Delay | | 65.6 | | | 34.7 | | | 20.6 | | | 97.7 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 65.6 | | | 34.7 | | | 20.6 | | | 97.7 | |
| LOS | | E | | | C | | | C | | | F | |
| Approach Delay | | 65.6 | | | 34.7 | | | 20.6 | | | 97.7 | |
| Approach LOS | | E | | | C | | | C | | | F | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 108 | | | |
| Actuated Cycle Length: 99.2 | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 1.14 | | | |
| Intersection Signal Delay: 67.6 | | Intersection LOS: E | |
| Intersection Capacity Utilization 87.6% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 4: L Street/Summer Street & East 1st Street



| Lane Group | Ø2 |
|---|---|
| Detector 2 Channel | |
| Detector 2 Extend (s) | |
| Turn Type | |
| Protected Phases | 2 |
| Permitted Phases | |
| Detector Phase | |
| Switch Phase | |
| Minimum Initial (s) | 4.0 |
| Minimum Split (s) | 20.0 |
| Total Split (s) | 20.0 |
| Total Split (%) | 19% |
| Maximum Green (s) | 16.0 |
| Yellow Time (s) | 3.0 |
| All-Red Time (s) | 1.0 |
| Lost Time Adjust (s) | |
| Total Lost Time (s) | |
| Lead/Lag | Lag |
| Lead-Lag Optimize? | |
| Vehicle Extension (s) | 3.0 |
| Recall Mode | None |
| Walk Time (s) | 7.0 |
| Flash Dont Walk (s) | 9.0 |
| Pedestrian Calls (#/hr) | 31 |
| Act Effct Green (s) | |
| Actuated g/C Ratio | |
| v/c Ratio | |
| Control Delay | |
| Queue Delay | |
| Total Delay | |
| LOS | |
| Approach Delay | |
| Approach LOS | |

| Intersection Summary |
|---|

| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 231 | 259 | 663 | 1333 |
| v/c Ratio | 0.85 | 0.70 | 0.55 | 1.14 |
| Control Delay | 65.6 | 34.7 | 20.6 | 97.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 65.6 | 34.7 | 20.6 | 97.7 |
| Queue Length 50th (ft) | 145 | 102 | 174 | ~552 |
| Queue Length 95th (ft) | #269 | 178 | 228 | #751 |
| Internal Link Dist (ft) | 460 | 496 | 260 | 285 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 284 | 382 | 1202 | 1165 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.81 | 0.68 | 0.55 | 1.14 |

Intersection Summary

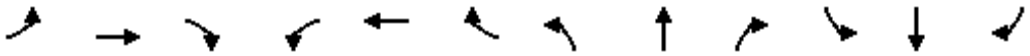
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 33 | 104 | 62 | 21 | 41 | 158 | 26 | 536 | 21 | 285 | 778 | 137 |
| Future Volume (vph) | 33 | 104 | 62 | 21 | 41 | 158 | 26 | 536 | 21 | 285 | 778 | 137 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 15 | 12 | 12 | 16 | 12 | 12 | 9 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | | | 0.95 | | | 0.95 | |
| Frpb, ped/bikes | | 0.96 | | | 0.96 | | | 1.00 | | | 0.98 | |
| Flpb, ped/bikes | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Frt | | 0.96 | | | 0.90 | | | 0.99 | | | 0.98 | |
| Flt Protected | | 0.99 | | | 1.00 | | | 1.00 | | | 0.99 | |
| Satd. Flow (prot) | | 1653 | | | 1579 | | | 2887 | | | 3035 | |
| Flt Permitted | | 0.79 | | | 0.93 | | | 0.81 | | | 0.62 | |
| Satd. Flow (perm) | | 1320 | | | 1470 | | | 2350 | | | 1907 | |
| Peak-hour factor, PHF | 0.86 | 0.86 | 0.86 | 0.85 | 0.85 | 0.85 | 0.88 | 0.88 | 0.88 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 38 | 121 | 72 | 25 | 48 | 186 | 30 | 609 | 24 | 317 | 864 | 152 |
| RTOR Reduction (vph) | 0 | 15 | 0 | 0 | 84 | 0 | 0 | 2 | 0 | 0 | 8 | 0 |
| Lane Group Flow (vph) | 0 | 216 | 0 | 0 | 175 | 0 | 0 | 661 | 0 | 0 | 1325 | 0 |
| Confl. Peds. (#/hr) | 29 | | 36 | 36 | | 29 | 134 | | 51 | 51 | | 134 |
| Confl. Bikes (#/hr) | | | 12 | | | 1 | | | | | | 19 |
| Heavy Vehicles (%) | 13% | 1% | 2% | 0% | 5% | 6% | 0% | 0% | 5% | 1% | 2% | 4% |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | D.P+P | NA | |
| Protected Phases | | 3 | | | 3 | | | 1 | | 4 | 1 4 | |
| Permitted Phases | 3 | | | 3 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 19.3 | | | 19.3 | | | 50.6 | | | 56.7 | |
| Effective Green, g (s) | | 19.3 | | | 19.3 | | | 50.6 | | | 56.7 | |
| Actuated g/C Ratio | | 0.19 | | | 0.19 | | | 0.50 | | | 0.56 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | | | 3.0 | | | | |
| Lane Grp Cap (vph) | | 252 | | | 281 | | | 1179 | | | 1140 | |
| v/s Ratio Prot | | | | | | | | | | | c0.07 | |
| v/s Ratio Perm | | c0.16 | | | 0.12 | | | 0.28 | | | c0.58 | |
| v/c Ratio | | 0.86 | | | 0.62 | | | 0.56 | | | 1.16 | |
| Uniform Delay, d1 | | 39.4 | | | 37.4 | | | 17.4 | | | 22.0 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 23.6 | | | 4.2 | | | 1.9 | | | 82.9 | |
| Delay (s) | | 63.0 | | | 41.7 | | | 19.3 | | | 104.9 | |
| Level of Service | | E | | | D | | | B | | | F | |
| Approach Delay (s) | | 63.0 | | | 41.7 | | | 19.3 | | | 104.9 | |
| Approach LOS | | E | | | D | | | B | | | F | |

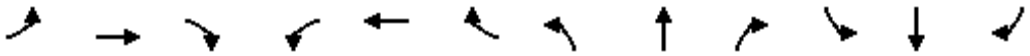
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 71.6 | HCM 2000 Level of Service | E |
| HCM 2000 Volume to Capacity ratio | 0.97 | | |
| Actuated Cycle Length (s) | 100.8 | Sum of lost time (s) | 16.0 |
| Intersection Capacity Utilization | 87.6% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 10 | 0 | 10 | 16 | 0 | 5 | 21 | 572 | 10 | 21 | 814 | 26 |
| Future Volume (vph) | 10 | 0 | 10 | 16 | 0 | 5 | 21 | 572 | 10 | 21 | 814 | 26 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 16 | 12 | 12 | 16 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.932 | | | 0.968 | | | 0.998 | | | 0.996 | |
| Flt Protected | | 0.976 | | | 0.963 | | | 0.998 | | | 0.999 | |
| Satd. Flow (prot) | 0 | 1452 | 0 | 0 | 1488 | 0 | 0 | 1912 | 0 | 0 | 1890 | 0 |
| Flt Permitted | | 0.976 | | | 0.963 | | | 0.998 | | | 0.999 | |
| Satd. Flow (perm) | 0 | 1452 | 0 | 0 | 1488 | 0 | 0 | 1912 | 0 | 0 | 1890 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 429 | | | 453 | | | 298 | | | 340 | |
| Travel Time (s) | | 9.8 | | | 10.3 | | | 6.8 | | | 7.7 | |
| Confl. Peds. (#/hr) | 33 | | 15 | 15 | | 33 | 131 | | 44 | 44 | | 131 |
| Confl. Bikes (#/hr) | | | 1 | | | | | | 1 | | | 18 |
| Peak Hour Factor | 0.50 | 0.50 | 0.50 | 0.86 | 0.86 | 0.86 | 0.89 | 0.89 | 0.89 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% | 0% | 0% | 2% | 4% |
| Adj. Flow (vph) | 20 | 0 | 20 | 19 | 0 | 6 | 24 | 643 | 11 | 23 | 885 | 28 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 40 | 0 | 0 | 25 | 0 | 0 | 678 | 0 | 0 | 936 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.25 | 1.14 | 1.14 | 1.25 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 0.97 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 75.6% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |

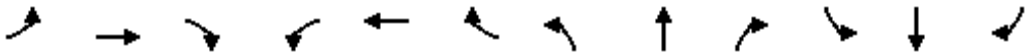


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 10 | 0 | 10 | 16 | 0 | 5 | 21 | 572 | 10 | 21 | 814 | 26 |
| Future Volume (Veh/h) | 10 | 0 | 10 | 16 | 0 | 5 | 21 | 572 | 10 | 21 | 814 | 26 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.50 | 0.50 | 0.50 | 0.86 | 0.86 | 0.86 | 0.89 | 0.89 | 0.89 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 20 | 0 | 20 | 19 | 0 | 6 | 24 | 643 | 11 | 23 | 885 | 28 |
| Pedestrians | | 131 | | | 44 | | | 15 | | | 33 | |
| Lane Width (ft) | | 10.0 | | | 10.0 | | | 16.0 | | | 16.0 | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Percent Blockage | | 9 | | | 3 | | | 2 | | | 4 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | 602 | | | 340 | |
| pX, platoon unblocked | 0.72 | 0.72 | 0.63 | 0.72 | 0.72 | 0.82 | 0.63 | | | 0.82 | | |
| vC, conflicting volume | 1812 | 1822 | 1045 | 1720 | 1830 | 726 | 1044 | | | 698 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1358 | 1373 | 774 | 1231 | 1385 | 551 | 772 | | | 517 | | |
| tC, single (s) | *4.0 | 6.5 | *4.0 | *4.0 | 6.5 | *4.0 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 91 | 100 | 94 | 92 | 100 | 99 | 95 | | | 97 | | |
| cM capacity (veh/h) | 219 | 86 | 361 | 249 | 85 | 574 | 485 | | | 838 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 40 | 25 | 678 | 936 |
| Volume Left | 20 | 19 | 24 | 23 |
| Volume Right | 20 | 6 | 11 | 28 |
| cSH | 272 | 288 | 485 | 838 |
| Volume to Capacity | 0.15 | 0.09 | 0.05 | 0.03 |
| Queue Length 95th (ft) | 13 | 7 | 4 | 2 |
| Control Delay (s) | 20.5 | 18.7 | 1.4 | 0.8 |
| Lane LOS | C | C | A | A |
| Approach Delay (s) | 20.5 | 18.7 | 1.4 | 0.8 |
| Approach LOS | C | C | | |

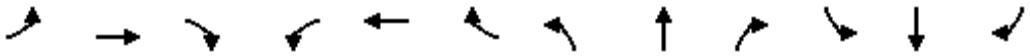
| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 1.8 | | | |
| Intersection Capacity Utilization | 75.6% | ICU Level of Service | D | |
| Analysis Period (min) | 15 | | | |

* User Entered Value



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 21 | 10 | 16 | 0 | 10 | 16 | 10 | 562 | 10 | 16 | 803 | 21 |
| Future Volume (vph) | 21 | 10 | 16 | 0 | 10 | 16 | 10 | 562 | 10 | 16 | 803 | 21 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 16 | 12 | 12 | 16 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.954 | | | 0.918 | | | 0.998 | | | 0.997 | |
| Flt Protected | | 0.978 | | | | | | 0.999 | | | 0.999 | |
| Satd. Flow (prot) | 0 | 1340 | 0 | 0 | 1319 | 0 | 0 | 1909 | 0 | 0 | 1894 | 0 |
| Flt Permitted | | 0.978 | | | | | | 0.999 | | | 0.999 | |
| Satd. Flow (perm) | 0 | 1340 | 0 | 0 | 1319 | 0 | 0 | 1909 | 0 | 0 | 1894 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 638 | | | 716 | | | 304 | | | 298 | |
| Travel Time (s) | | 14.5 | | | 16.3 | | | 6.9 | | | 6.8 | |
| Confl. Peds. (#/hr) | 23 | | 27 | 27 | | 23 | 117 | | 70 | 70 | | 117 |
| Confl. Bikes (#/hr) | | | | | | | | | 1 | | | 15 |
| Peak Hour Factor | 0.67 | 0.67 | 0.67 | 0.63 | 0.63 | 0.63 | 0.86 | 0.86 | 0.86 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% | 13% | 0% | 2% | 0% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | | | | | |
| Adj. Flow (vph) | 31 | 15 | 24 | 0 | 16 | 25 | 12 | 653 | 12 | 17 | 845 | 22 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 70 | 0 | 0 | 41 | 0 | 0 | 677 | 0 | 0 | 884 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 0.97 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 76.9% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |

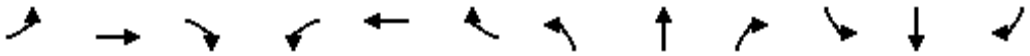


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 21 | 10 | 16 | 0 | 10 | 16 | 10 | 562 | 10 | 16 | 803 | 21 |
| Future Volume (Veh/h) | 21 | 10 | 16 | 0 | 10 | 16 | 10 | 562 | 10 | 16 | 803 | 21 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.67 | 0.67 | 0.67 | 0.63 | 0.63 | 0.63 | 0.86 | 0.86 | 0.86 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 31 | 15 | 24 | 0 | 16 | 25 | 12 | 653 | 12 | 17 | 845 | 22 |
| Pedestrians | | 117 | | | 70 | | | 27 | | | 23 | |
| Lane Width (ft) | | 10.0 | | | 10.0 | | | 16.0 | | | 16.0 | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Percent Blockage | | 8 | | | 5 | | | 3 | | | 3 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | 304 | | | 638 | |
| pX, platoon unblocked | 0.72 | 0.72 | 0.63 | 0.72 | 0.72 | 0.82 | 0.63 | | | 0.82 | | |
| vC, conflicting volume | 1746 | 1766 | 1000 | 1702 | 1771 | 752 | 984 | | | 735 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1280 | 1308 | 710 | 1219 | 1315 | 588 | 685 | | | 567 | | |
| tC, single (s) | *4.0 | *4.0 | *4.0 | 7.1 | *4.0 | *4.0 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 86 | 94 | 94 | 100 | 93 | 96 | 98 | | | 98 | | |
| cM capacity (veh/h) | 223 | 241 | 380 | 83 | 240 | 558 | 534 | | | 792 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 70 | 41 | 677 | 884 |
| Volume Left | 31 | 0 | 12 | 17 |
| Volume Right | 24 | 25 | 12 | 22 |
| cSH | 265 | 368 | 534 | 792 |
| Volume to Capacity | 0.26 | 0.11 | 0.02 | 0.02 |
| Queue Length 95th (ft) | 26 | 9 | 2 | 2 |
| Control Delay (s) | 23.4 | 16.0 | 0.6 | 0.6 |
| Lane LOS | C | C | A | A |
| Approach Delay (s) | 23.4 | 16.0 | 0.6 | 0.6 |
| Approach LOS | C | C | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 2.0 | | | |
| Intersection Capacity Utilization | 76.9% | ICU Level of Service | D | |
| Analysis Period (min) | 15 | | | |

* User Entered Value



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 52 | 140 | 52 | 10 | 150 | 42 | 78 | 478 | 26 | 69 | 545 | 200 |
| Future Volume (vph) | 52 | 140 | 52 | 10 | 150 | 42 | 78 | 478 | 26 | 69 | 545 | 200 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 11 | 12 | 12 | 16 | 12 | 10 | 10 | 10 | 10 | 10 | 10 |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 0 | | 250 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 0 | | 1 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 0.95 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Ped Bike Factor | | 0.94 | | | 0.96 | | | 0.99 | | | 0.96 | |
| Frt | | 0.968 | | | 0.972 | | | 0.993 | | | 0.963 | |
| Flt Protected | | 0.989 | | | 0.998 | | | 0.993 | | | 0.996 | |
| Satd. Flow (prot) | 0 | 2590 | 0 | 0 | 1564 | 0 | 0 | 2830 | 0 | 0 | 2630 | 0 |
| Flt Permitted | | 0.711 | | | 0.979 | | | 0.588 | | | 0.729 | |
| Satd. Flow (perm) | 0 | 1835 | 0 | 0 | 1524 | 0 | 0 | 1671 | 0 | 0 | 1922 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 642 | | | 187 | | | 618 | | | 304 | |
| Travel Time (s) | | 14.6 | | | 4.3 | | | 14.0 | | | 6.9 | |
| Confl. Peds. (#/hr) | 61 | | 89 | 89 | | 61 | 154 | | 61 | 61 | | 154 |
| Confl. Bikes (#/hr) | | | 7 | | | 1 | | | 1 | | | 6 |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.88 | 0.88 | 0.88 | 0.86 | 0.86 | 0.86 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 2% | 9% | 0% | 0% | 6% | 0% | 0% | 0% | 3% | 13% | 0% | 1% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Adj. Flow (vph) | 58 | 157 | 58 | 11 | 170 | 48 | 91 | 556 | 30 | 74 | 586 | 215 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 273 | 0 | 0 | 229 | 0 | 0 | 677 | 0 | 0 | 875 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.27 | 1.14 | 1.14 | 1.12 | 1.14 | 1.25 | 1.33 | 1.25 | 1.25 | 1.33 | 1.25 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |

| Lane Group | Ø2 |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | |
| Future Volume (vph) | |
| Ideal Flow (vphpl) | |
| Lane Width (ft) | |
| Storage Length (ft) | |
| Storage Lanes | |
| Taper Length (ft) | |
| Lane Util. Factor | |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Right Turn on Red | |
| Satd. Flow (RTOR) | |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | |
| Heavy Vehicles (%) | |
| Parking (#/hr) | |
| Adj. Flow (vph) | |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | |
| Enter Blocked Intersection | |
| Lane Alignment | |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | |
| Turning Speed (mph) | |
| Number of Detectors | |
| Detector Template | |
| Leading Detector (ft) | |
| Trailing Detector (ft) | |
| Detector 1 Position(ft) | |
| Detector 1 Size(ft) | |
| Detector 1 Type | |
| Detector 1 Channel | |
| Detector 1 Extend (s) | |
| Detector 1 Queue (s) | |
| Detector 1 Delay (s) | |
| Detector 2 Position(ft) | |
| Detector 2 Size(ft) | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | D.P+P | NA | | Perm | NA | | D.P+P | NA | | Perm | NA | |
| Protected Phases | 3 | 3 4 | | | 4 | | 5 | 1 5 | | | 1 | |
| Permitted Phases | 4 | | | 4 | | | 1 | | | 1 | | |
| Detector Phase | 3 | 3 4 | | 4 | 4 | | 5 | 1 5 | | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | | | 10.0 | 10.0 | | 6.0 | | | 30.0 | 30.0 | |
| Minimum Split (s) | 10.0 | | | 14.0 | 14.0 | | 10.0 | | | 34.0 | 34.0 | |
| Total Split (s) | 11.0 | | | 34.0 | 34.0 | | 19.0 | | | 54.0 | 54.0 | |
| Total Split (%) | 7.7% | | | 23.9% | 23.9% | | 13.4% | | | 38.0% | 38.0% | |
| Maximum Green (s) | 6.0 | | | 30.0 | 30.0 | | 15.0 | | | 50.0 | 50.0 | |
| Yellow Time (s) | 3.0 | | | 3.0 | 3.0 | | 3.0 | | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | | | 1.0 | 1.0 | | 1.0 | | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | | | | | 0.0 | | | | | | 0.0 | |
| Total Lost Time (s) | | | | | 4.0 | | | | | | 4.0 | |
| Lead/Lag | Lead | | | Lag | Lag | | | | | Lead | Lead | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | | | 2.0 | 2.0 | | 2.0 | | | 2.0 | 2.0 | |
| Recall Mode | Max | | | Max | Max | | Max | | | Max | Max | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 35.2 | | | 30.2 | | | 65.4 | | | 50.3 | |
| Actuated g/C Ratio | | 0.26 | | | 0.22 | | | 0.48 | | | 0.37 | |
| v/c Ratio | | 0.54 | | | 0.69 | | | 0.73 | | | 1.24 | |
| Control Delay | | 47.1 | | | 62.4 | | | 31.3 | | | 159.0 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 47.1 | | | 62.4 | | | 31.3 | | | 159.0 | |
| LOS | | D | | | E | | | C | | | F | |
| Approach Delay | | 47.1 | | | 62.4 | | | 31.3 | | | 159.0 | |
| Approach LOS | | D | | | E | | | C | | | F | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 142 | | | |
| Actuated Cycle Length: 137.2 | | | |
| Natural Cycle: 115 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 1.24 | | | |
| Intersection Signal Delay: 91.2 | | Intersection LOS: F | |
| Intersection Capacity Utilization 89.2% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 7: L Street & E Broadway



| Lane Group | Ø2 |
|---|---|
| Detector 2 Type | |
| Detector 2 Channel | |
| Detector 2 Extend (s) | |
| Turn Type | |
| Protected Phases | 2 |
| Permitted Phases | |
| Detector Phase | |
| Switch Phase | |
| Minimum Initial (s) | 4.0 |
| Minimum Split (s) | 24.0 |
| Total Split (s) | 24.0 |
| Total Split (%) | 17% |
| Maximum Green (s) | 20.0 |
| Yellow Time (s) | 3.0 |
| All-Red Time (s) | 1.0 |
| Lost Time Adjust (s) | |
| Total Lost Time (s) | |
| Lead/Lag | Lag |
| Lead-Lag Optimize? | |
| Vehicle Extension (s) | 2.0 |
| Recall Mode | None |
| Walk Time (s) | 8.0 |
| Flash Dont Walk (s) | 12.0 |
| Pedestrian Calls (#/hr) | 46 |
| Act Effct Green (s) | |
| Actuated g/C Ratio | |
| v/c Ratio | |
| Control Delay | |
| Queue Delay | |
| Total Delay | |
| LOS | |
| Approach Delay | |
| Approach LOS | |

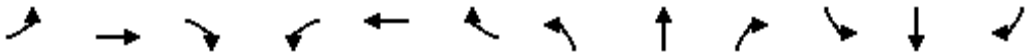
| Intersection Summary |
|---|

| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 273 | 229 | 677 | 875 |
| v/c Ratio | 0.54 | 0.69 | 0.73 | 1.24 |
| Control Delay | 47.1 | 62.4 | 31.3 | 159.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 47.1 | 62.4 | 31.3 | 159.0 |
| Queue Length 50th (ft) | 107 | 199 | 217 | ~541 |
| Queue Length 95th (ft) | 148 | 289 | 257 | #675 |
| Internal Link Dist (ft) | 562 | 107 | 538 | 224 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 504 | 334 | 923 | 704 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.54 | 0.69 | 0.73 | 1.24 |

Intersection Summary

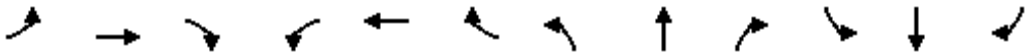
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



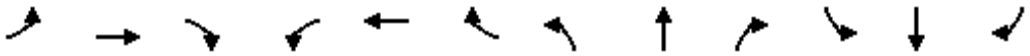
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 52 | 140 | 52 | 10 | 150 | 42 | 78 | 478 | 26 | 69 | 545 | 200 |
| Future Volume (vph) | 52 | 140 | 52 | 10 | 150 | 42 | 78 | 478 | 26 | 69 | 545 | 200 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 11 | 12 | 12 | 16 | 12 | 10 | 10 | 10 | 10 | 10 | 10 |
| Total Lost time (s) | | 5.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 0.95 | | | 1.00 | | | 0.95 | | | 0.95 | |
| Frpb, ped/bikes | | 0.96 | | | 0.97 | | | 1.00 | | | 0.97 | |
| Flpb, ped/bikes | | 0.99 | | | 0.99 | | | 1.00 | | | 1.00 | |
| Frt | | 0.97 | | | 0.97 | | | 0.99 | | | 0.96 | |
| Flt Protected | | 0.99 | | | 1.00 | | | 0.99 | | | 1.00 | |
| Satd. Flow (prot) | | 2569 | | | 1555 | | | 2827 | | | 2629 | |
| Flt Permitted | | 0.71 | | | 0.98 | | | 0.59 | | | 0.73 | |
| Satd. Flow (perm) | | 1847 | | | 1526 | | | 1672 | | | 1926 | |
| Peak-hour factor, PHF | 0.89 | 0.89 | 0.89 | 0.88 | 0.88 | 0.88 | 0.86 | 0.86 | 0.86 | 0.93 | 0.93 | 0.93 |
| Adj. Flow (vph) | 58 | 157 | 58 | 11 | 170 | 48 | 91 | 556 | 30 | 74 | 586 | 215 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 273 | 0 | 0 | 229 | 0 | 0 | 677 | 0 | 0 | 875 | 0 |
| Confl. Peds. (#/hr) | 61 | | 89 | 89 | | 61 | 154 | | 61 | 61 | | 154 |
| Confl. Bikes (#/hr) | | | 7 | | | 1 | | | 1 | | | 6 |
| Heavy Vehicles (%) | 2% | 9% | 0% | 0% | 6% | 0% | 0% | 0% | 3% | 13% | 0% | 1% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Turn Type | D.P+P | NA | | Perm | NA | | D.P+P | NA | | Perm | NA | |
| Protected Phases | 3 | 3 4 | | | 4 | | 5 | 1 5 | | | 1 | |
| Permitted Phases | 4 | | | 4 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 36.2 | | | 30.2 | | | 65.4 | | | 50.3 | |
| Effective Green, g (s) | | 36.2 | | | 30.2 | | | 65.4 | | | 50.3 | |
| Actuated g/C Ratio | | 0.26 | | | 0.22 | | | 0.47 | | | 0.36 | |
| Clearance Time (s) | | | | | 4.0 | | | | | | 4.0 | |
| Vehicle Extension (s) | | | | | 2.0 | | | | | | 2.0 | |
| Lane Grp Cap (vph) | | 515 | | | 333 | | | 918 | | | 701 | |
| v/s Ratio Prot | | c0.02 | | | | | | c0.08 | | | | |
| v/s Ratio Perm | | 0.12 | | | c0.15 | | | 0.27 | | | c0.45 | |
| v/c Ratio | | 0.53 | | | 0.69 | | | 0.74 | | | 1.25 | |
| Uniform Delay, d1 | | 43.7 | | | 49.6 | | | 29.4 | | | 43.9 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 3.9 | | | 11.0 | | | 5.3 | | | 123.4 | |
| Delay (s) | | 47.5 | | | 60.6 | | | 34.7 | | | 167.3 | |
| Level of Service | | D | | | E | | | C | | | F | |
| Approach Delay (s) | | 47.5 | | | 60.6 | | | 34.7 | | | 167.3 | |
| Approach LOS | | D | | | E | | | C | | | F | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 95.8 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 0.83 | | |
| Actuated Cycle Length (s) | 138.1 | Sum of lost time (s) | 21.0 |
| Intersection Capacity Utilization | 89.2% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 21 | 194 | 0 | 0 | 200 | 5 | 47 | 10 | 16 | 5 | 0 | 52 |
| Future Volume (vph) | 21 | 194 | 0 | 0 | 200 | 5 | 47 | 10 | 16 | 5 | 0 | 52 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 13 | 12 | 10 | 10 | 12 | 12 | 16 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | | | 0.997 | | | 0.906 | | | 0.877 | |
| Flt Protected | | 0.995 | | | | | 0.950 | | | | 0.996 | |
| Satd. Flow (prot) | 0 | 1459 | 0 | 0 | 1555 | 0 | 1338 | 1241 | 0 | 0 | 1496 | 0 |
| Flt Permitted | | 0.995 | | | | | 0.950 | | | | 0.996 | |
| Satd. Flow (perm) | 0 | 1459 | 0 | 0 | 1555 | 0 | 1338 | 1241 | 0 | 0 | 1496 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 1822 | | | 540 | | | 382 | | | 354 | |
| Travel Time (s) | | 41.4 | | | 12.3 | | | 8.7 | | | 8.0 | |
| Confl. Peds. (#/hr) | 8 | | 18 | 18 | | 8 | 13 | | 28 | 28 | | 13 |
| Confl. Bikes (#/hr) | | | 5 | | | 2 | | | 1 | | | |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.88 | 0.88 | 0.88 | 0.81 | 0.81 | 0.81 | 0.70 | 0.70 | 0.70 |
| Heavy Vehicles (%) | 32% | 2% | 0% | 0% | 2% | 0% | 2% | 13% | 0% | 0% | 0% | 2% |
| Parking (#/hr) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Adj. Flow (vph) | 25 | 228 | 0 | 0 | 227 | 6 | 58 | 12 | 20 | 7 | 0 | 74 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 253 | 0 | 0 | 233 | 0 | 58 | 32 | 0 | 0 | 81 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 10 | | | 10 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.30 | 1.14 | 1.14 | 1.25 | 1.14 | 1.42 | 1.42 | 1.14 | 1.14 | 1.12 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 47.2% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 21 | 194 | 0 | 0 | 200 | 5 | 47 | 10 | 16 | 5 | 0 | 52 |
| Future Volume (Veh/h) | 21 | 194 | 0 | 0 | 200 | 5 | 47 | 10 | 16 | 5 | 0 | 52 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.88 | 0.88 | 0.88 | 0.81 | 0.81 | 0.81 | 0.70 | 0.70 | 0.70 |
| Hourly flow rate (vph) | 25 | 228 | 0 | 0 | 227 | 6 | 58 | 12 | 20 | 7 | 0 | 74 |
| Pedestrians | | 13 | | | 28 | | | 18 | | | 8 | |
| Lane Width (ft) | | 12.0 | | | 13.0 | | | 10.0 | | | 16.0 | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Percent Blockage | | 1 | | | 3 | | | 1 | | | 1 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 540 | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 241 | | | 246 | | | 613 | 537 | 274 | 570 | 534 | 251 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 241 | | | 246 | | | 613 | 537 | 274 | 570 | 534 | 251 |
| tC, single (s) | 4.4 | | | 4.1 | | | *6.5 | 6.6 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.5 | | | 2.2 | | | 3.5 | 4.1 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 100 | | | 85 | 97 | 97 | 98 | 100 | 90 |
| cM capacity (veh/h) | 1158 | | | 1315 | | | 384 | 417 | 741 | 387 | 436 | 772 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | SB 1 |
|---|---|---|---|---|---|
| Volume Total | 253 | 233 | 58 | 32 | 81 |
| Volume Left | 25 | 0 | 58 | 0 | 7 |
| Volume Right | 0 | 6 | 0 | 20 | 74 |
| cSH | 1158 | 1700 | 384 | 574 | 711 |
| Volume to Capacity | 0.02 | 0.14 | 0.15 | 0.06 | 0.11 |
| Queue Length 95th (ft) | 2 | 0 | 13 | 4 | 10 |
| Control Delay (s) | 1.0 | 0.0 | 16.0 | 11.6 | 10.7 |
| Lane LOS | A | | C | B | B |
| Approach Delay (s) | 1.0 | 0.0 | 14.5 | | 10.7 |
| Approach LOS | | | B | | B |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 3.7 | | | |
| Intersection Capacity Utilization | 47.2% | ICU Level of Service | | A |
| Analysis Period (min) | 15 | | | |

* User Entered Value



| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 410 | 0 | 0 | 189 | 36 | 21 |
| Future Volume (vph) | 410 | 0 | 0 | 189 | 36 | 21 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 13 | 12 | 12 | 13 | 10 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | | | | | 0.950 | |
| Flt Protected | | | | | 0.970 | |
| Satd. Flow (prot) | 1750 | 0 | 0 | 1667 | 1443 | 0 |
| Flt Permitted | | | | | 0.970 | |
| Satd. Flow (perm) | 1750 | 0 | 0 | 1667 | 1443 | 0 |
| Link Speed (mph) | 30 | | | 30 | 30 | |
| Link Distance (ft) | 576 | | | 561 | 457 | |
| Travel Time (s) | 13.1 | | | 12.8 | 10.4 | |
| Confl. Peds. (#/hr) | | 13 | 13 | | 134 | 51 |
| Confl. Bikes (#/hr) | | 17 | | | | 2 |
| Peak Hour Factor | 0.85 | 0.85 | 0.88 | 0.88 | 0.81 | 0.81 |
| Heavy Vehicles (%) | 1% | 0% | 0% | 6% | 3% | 0% |
| Adj. Flow (vph) | 482 | 0 | 0 | 215 | 44 | 26 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 482 | 0 | 0 | 215 | 70 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(ft) | 0 | | | 0 | 10 | |
| Link Offset(ft) | 0 | | | 0 | 0 | |
| Crosswalk Width(ft) | 16 | | | 16 | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.10 | 1.14 | 1.14 | 1.10 | 1.25 | 1.14 |
| Turning Speed (mph) | | 9 | 15 | | 15 | 9 |
| Sign Control | Free | | | Free | Stop | |

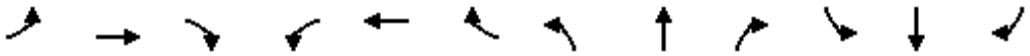
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 42.5% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 410 | 0 | 0 | 189 | 36 | 21 |
| Future Volume (Veh/h) | 410 | 0 | 0 | 189 | 36 | 21 |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.85 | 0.85 | 0.88 | 0.88 | 0.81 | 0.81 |
| Hourly flow rate (vph) | 482 | 0 | 0 | 215 | 44 | 26 |
| Pedestrians | 134 | | | 51 | 13 | |
| Lane Width (ft) | 13.0 | | | 13.0 | 10.0 | |
| Walking Speed (ft/s) | 4.0 | | | 4.0 | 4.0 | |
| Percent Blockage | 12 | | | 5 | 1 | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | None | | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | 576 | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | | | 495 | | 844 | 546 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 495 | | 844 | 546 |
| tC, single (s) | | | 4.1 | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.2 | | 3.5 | 3.3 |
| p0 queue free % | | | 100 | | 85 | 95 |
| cM capacity (veh/h) | | | 1069 | | 289 | 512 |

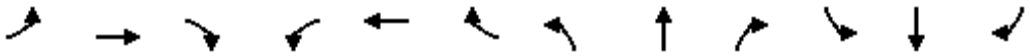
| Direction, Lane # | EB 1 | WB 1 | NB 1 |
|---|---|---|---|
| Volume Total | 482 | 215 | 70 |
| Volume Left | 0 | 0 | 44 |
| Volume Right | 0 | 0 | 26 |
| cSH | 1700 | 1700 | 345 |
| Volume to Capacity | 0.28 | 0.13 | 0.20 |
| Queue Length 95th (ft) | 0 | 0 | 19 |
| Control Delay (s) | 0.0 | 0.0 | 18.1 |
| Lane LOS | | | C |
| Approach Delay (s) | 0.0 | 0.0 | 18.1 |
| Approach LOS | | | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.6 | | |
| Intersection Capacity Utilization | 42.5% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 26 | 384 | 0 | 0 | 163 | 85 | 36 | 37 | 10 | 367 | 0 | 66 |
| Future Volume (vph) | 26 | 384 | 0 | 0 | 163 | 85 | 36 | 37 | 10 | 367 | 0 | 66 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 15 | 12 | 12 | 16 | 12 | 12 | 16 | 12 | 12 | 14 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | | | 0.954 | | | 0.984 | | | 0.979 | |
| Flt Protected | | 0.997 | | | | | | 0.979 | | | 0.959 | |
| Satd. Flow (prot) | 0 | 1629 | 0 | 0 | 1795 | 0 | 0 | 1772 | 0 | 0 | 1705 | 0 |
| Flt Permitted | | 0.997 | | | | | | 0.979 | | | 0.959 | |
| Satd. Flow (perm) | 0 | 1629 | 0 | 0 | 1795 | 0 | 0 | 1772 | 0 | 0 | 1705 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 848 | | | 1822 | | | 402 | | | 2052 | |
| Travel Time (s) | | 19.3 | | | 41.4 | | | 9.1 | | | 46.6 | |
| Confl. Peds. (#/hr) | 4 | | | 5 | | 4 | 1 | | 24 | 24 | | 1 |
| Confl. Bikes (#/hr) | | | 5 | | | 1 | | | 1 | | | 5 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.93 | 0.93 | 0.93 | 0.87 | 0.87 | 0.87 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 12% | 3% | 0% | 0% | 3% | 3% | 3% | 9% | 0% | 0% | 0% | 3% |
| Parking (#/hr) | | 0 | 0 | | | | | | | | | |
| Adj. Flow (vph) | 30 | 436 | 0 | 0 | 175 | 91 | 41 | 43 | 11 | 395 | 0 | 71 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 466 | 0 | 0 | 266 | 0 | 0 | 95 | 0 | 0 | 466 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.16 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 1.05 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |

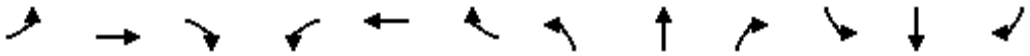
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 83.2% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 26 | 384 | 0 | 0 | 163 | 85 | 36 | 37 | 10 | 367 | 0 | 66 |
| Future Volume (Veh/h) | 26 | 384 | 0 | 0 | 163 | 85 | 36 | 37 | 10 | 367 | 0 | 66 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.93 | 0.93 | 0.93 | 0.87 | 0.87 | 0.87 | 0.93 | 0.93 | 0.93 |
| Hourly flow rate (vph) | 30 | 436 | 0 | 0 | 175 | 91 | 41 | 43 | 11 | 395 | 0 | 71 |
| Pedestrians | | 1 | | | 24 | | | 5 | | | 4 | |
| Lane Width (ft) | | 15.0 | | | 16.0 | | | 16.0 | | | 14.0 | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Percent Blockage | | 0 | | | 3 | | | 1 | | | 0 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 270 | | | 441 | | | 794 | 771 | 465 | 777 | 726 | 226 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 270 | | | 441 | | | 794 | 771 | 465 | 777 | 726 | 226 |
| tC, single (s) | 4.2 | | | 4.1 | | | 7.1 | 6.6 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.3 | | | 2.2 | | | 3.5 | 4.1 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 100 | | | 85 | 86 | 98 | 0 | 100 | 91 |
| cM capacity (veh/h) | 1233 | | | 1123 | | | 269 | 312 | 582 | 263 | 342 | 807 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 466 | 266 | 95 | 466 |
| Volume Left | 30 | 0 | 41 | 395 |
| Volume Right | 0 | 91 | 11 | 71 |
| cSH | 1233 | 1123 | 307 | 293 |
| Volume to Capacity | 0.02 | 0.00 | 0.31 | 1.59 |
| Queue Length 95th (ft) | 2 | 0 | 32 | 698 |
| Control Delay (s) | 0.8 | 0.0 | 21.9 | 313.6 |
| Lane LOS | A | | C | F |
| Approach Delay (s) | 0.8 | 0.0 | 21.9 | 313.6 |
| Approach LOS | | | C | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 114.9 | | |
| Intersection Capacity Utilization | 83.2% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 16 | 21 | 0 | 5 | 21 | 42 | 21 | 524 | 16 | 21 | 529 | 16 |
| Future Volume (vph) | 16 | 21 | 0 | 5 | 21 | 42 | 21 | 524 | 16 | 21 | 529 | 16 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | 0.97 | | | 0.91 | | | 1.00 | | | 0.99 | |
| Frt | | | | | 0.917 | | | 0.996 | | | 0.996 | |
| Flt Protected | | 0.979 | | | 0.996 | | | 0.998 | | | 0.998 | |
| Satd. Flow (prot) | 0 | 1406 | 0 | 0 | 1200 | 0 | 0 | 1408 | 0 | 0 | 1408 | 0 |
| Flt Permitted | | 0.864 | | | 0.981 | | | 0.972 | | | 0.972 | |
| Satd. Flow (perm) | 0 | 1201 | 0 | 0 | 1173 | 0 | 0 | 1369 | 0 | 0 | 1370 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | 66 | | | 2 | | | 2 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 659 | | | 649 | | | 380 | | | 618 | |
| Travel Time (s) | | 15.0 | | | 14.8 | | | 8.6 | | | 14.0 | |
| Confl. Peds. (#/hr) | 33 | | 29 | 29 | | 33 | 143 | | 60 | 60 | | 143 |
| Confl. Bikes (#/hr) | | | | | | | | | 1 | | | 7 |
| Peak Hour Factor | 0.80 | 0.80 | 0.80 | 0.52 | 0.52 | 0.52 | 0.95 | 0.95 | 0.95 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% | 8% | 0% | 1% | 0% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Adj. Flow (vph) | 20 | 26 | 0 | 10 | 40 | 81 | 22 | 552 | 17 | 21 | 540 | 16 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 46 | 0 | 0 | 131 | 0 | 0 | 591 | 0 | 0 | 577 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |

| Lane Group | Ø2 |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | |
| Future Volume (vph) | |
| Ideal Flow (vphpl) | |
| Lane Width (ft) | |
| Lane Util. Factor | |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Right Turn on Red | |
| Satd. Flow (RTOR) | |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | |
| Heavy Vehicles (%) | |
| Parking (#/hr) | |
| Adj. Flow (vph) | |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | |
| Enter Blocked Intersection | |
| Lane Alignment | |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | |
| Turning Speed (mph) | |
| Number of Detectors | |
| Detector Template | |
| Leading Detector (ft) | |
| Trailing Detector (ft) | |
| Detector 1 Position(ft) | |
| Detector 1 Size(ft) | |
| Detector 1 Type | |
| Detector 1 Channel | |
| Detector 1 Extend (s) | |
| Detector 1 Queue (s) | |
| Detector 1 Delay (s) | |
| Detector 2 Position(ft) | |
| Detector 2 Size(ft) | |
| Detector 2 Type | |
| Detector 2 Channel | |
| Detector 2 Extend (s) | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Detector Phase | 5 | 5 | | 5 | 5 | | 1 | 1 | | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | |
| Minimum Split (s) | 12.0 | 12.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Total Split (s) | 18.0 | 18.0 | | 18.0 | 18.0 | | 54.0 | 54.0 | | 54.0 | 54.0 | |
| Total Split (%) | 17.6% | 17.6% | | 17.6% | 17.6% | | 52.9% | 52.9% | | 52.9% | 52.9% | |
| Maximum Green (s) | 14.0 | 14.0 | | 14.0 | 14.0 | | 50.0 | 50.0 | | 50.0 | 50.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Lost Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lead/Lag | | | | | | | Lead | Lead | | Lead | Lead | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | Max | Max | | Max | Max | | Max | Max | | Max | Max | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 14.3 | | | 14.3 | | | 51.0 | | | 51.0 | |
| Actuated g/C Ratio | | 0.15 | | | 0.15 | | | 0.53 | | | 0.53 | |
| v/c Ratio | | 0.26 | | | 0.57 | | | 0.81 | | | 0.79 | |
| Control Delay | | 43.9 | | | 32.9 | | | 32.6 | | | 31.2 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 43.9 | | | 32.9 | | | 32.6 | | | 31.2 | |
| LOS | | D | | | C | | | C | | | C | |
| Approach Delay | | 43.9 | | | 32.9 | | | 32.6 | | | 31.2 | |
| Approach LOS | | D | | | C | | | C | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 102 | | | |
| Actuated Cycle Length: 96 | | | |
| Natural Cycle: 90 | | | |
| Control Type: Semi Act-Uncoord | | | |
| Maximum v/c Ratio: 0.81 | | | |
| Intersection Signal Delay: 32.4 | | Intersection LOS: C | |
| Intersection Capacity Utilization 55.5% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 11: L Street & E 5th Street



| Lane Group | Ø2 |
|---|---|
| Turn Type | |
| Protected Phases | 2 |
| Permitted Phases | |
| Detector Phase | |
| Switch Phase | |
| Minimum Initial (s) | 4.0 |
| Minimum Split (s) | 30.0 |
| Total Split (s) | 30.0 |
| Total Split (%) | 29% |
| Maximum Green (s) | 26.0 |
| Yellow Time (s) | 3.0 |
| All-Red Time (s) | 1.0 |
| Lost Time Adjust (s) | |
| Total Lost Time (s) | |
| Lead/Lag | Lag |
| Lead-Lag Optimize? | |
| Vehicle Extension (s) | 2.0 |
| Recall Mode | None |
| Walk Time (s) | 14.0 |
| Flash Dont Walk (s) | 12.0 |
| Pedestrian Calls (#/hr) | 66 |
| Act Effct Green (s) | |
| Actuated g/C Ratio | |
| v/c Ratio | |
| Control Delay | |
| Queue Delay | |
| Total Delay | |
| LOS | |
| Approach Delay | |
| Approach LOS | |

| Intersection Summary |
|---|

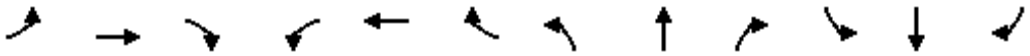
| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 46 | 131 | 591 | 577 |
| v/c Ratio | 0.26 | 0.57 | 0.81 | 0.79 |
| Control Delay | 43.9 | 32.9 | 32.6 | 31.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 43.9 | 32.9 | 32.6 | 31.2 |
| Queue Length 50th (ft) | 27 | 39 | 331 | 318 |
| Queue Length 95th (ft) | 55 | 36 | #560 | #538 |
| Internal Link Dist (ft) | 579 | 569 | 300 | 538 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 178 | 230 | 728 | 728 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.26 | 0.57 | 0.81 | 0.79 |

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 16 | 21 | 0 | 5 | 21 | 42 | 21 | 524 | 16 | 21 | 529 | 16 |
| Future Volume (vph) | 16 | 21 | 0 | 5 | 21 | 42 | 21 | 524 | 16 | 21 | 529 | 16 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Total Lost time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Frpb, ped/bikes | | 1.00 | | | 0.92 | | | 1.00 | | | 1.00 | |
| Flpb, ped/bikes | | 0.97 | | | 0.99 | | | 1.00 | | | 1.00 | |
| Frt | | 1.00 | | | 0.92 | | | 1.00 | | | 1.00 | |
| Flt Protected | | 0.98 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | | 1363 | | | 1198 | | | 1406 | | | 1408 | |
| Flt Permitted | | 0.86 | | | 0.98 | | | 0.97 | | | 0.97 | |
| Satd. Flow (perm) | | 1202 | | | 1179 | | | 1369 | | | 1371 | |
| Peak-hour factor, PHF | 0.80 | 0.80 | 0.80 | 0.52 | 0.52 | 0.52 | 0.95 | 0.95 | 0.95 | 0.98 | 0.98 | 0.98 |
| Adj. Flow (vph) | 20 | 26 | 0 | 10 | 40 | 81 | 22 | 552 | 17 | 21 | 540 | 16 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 56 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| Lane Group Flow (vph) | 0 | 46 | 0 | 0 | 75 | 0 | 0 | 590 | 0 | 0 | 576 | 0 |
| Confl. Peds. (#/hr) | 33 | | 29 | 29 | | 33 | 143 | | 60 | 60 | | 143 |
| Confl. Bikes (#/hr) | | | | | | | | | 1 | | | 7 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% | 8% | 0% | 1% | 0% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 14.3 | | | 14.3 | | | 51.0 | | | 51.0 | |
| Effective Green, g (s) | | 14.3 | | | 14.3 | | | 51.0 | | | 51.0 | |
| Actuated g/C Ratio | | 0.15 | | | 0.15 | | | 0.53 | | | 0.53 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | | | 2.0 | | | 2.0 | |
| Lane Grp Cap (vph) | | 177 | | | 173 | | | 720 | | | 721 | |
| v/s Ratio Prot | | | | | | | | | | | | |
| v/s Ratio Perm | | 0.04 | | | c0.06 | | | c0.43 | | | 0.42 | |
| v/c Ratio | | 0.26 | | | 0.43 | | | 0.82 | | | 0.80 | |
| Uniform Delay, d1 | | 36.6 | | | 37.6 | | | 19.1 | | | 18.8 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 3.5 | | | 7.7 | | | 10.1 | | | 9.0 | |
| Delay (s) | | 40.1 | | | 45.3 | | | 29.2 | | | 27.8 | |
| Level of Service | | D | | | D | | | C | | | C | |
| Approach Delay (s) | | 40.1 | | | 45.3 | | | 29.2 | | | 27.8 | |
| Approach LOS | | D | | | D | | | C | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 30.5 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.56 | | |
| Actuated Cycle Length (s) | 96.9 | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 55.5% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 21 | 26 | 16 | 5 | 16 | 10 | 16 | 472 | 16 | 21 | 430 | 27 |
| Future Volume (vph) | 21 | 26 | 16 | 5 | 16 | 10 | 16 | 472 | 16 | 21 | 430 | 27 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 16 | 12 | 12 | 15 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | 0.96 | | | 0.97 | | | 1.00 | | | 0.99 | |
| Frt | | 0.966 | | | 0.958 | | | 0.996 | | | 0.992 | |
| Flt Protected | | 0.984 | | | 0.992 | | | 0.998 | | | 0.998 | |
| Satd. Flow (prot) | 0 | 1488 | 0 | 0 | 1518 | 0 | 0 | 1582 | 0 | 0 | 1548 | 0 |
| Flt Permitted | | 0.921 | | | 0.968 | | | 0.981 | | | 0.969 | |
| Satd. Flow (perm) | 0 | 1377 | 0 | 0 | 1461 | 0 | 0 | 1552 | 0 | 0 | 1502 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 18 | | | 11 | | | 4 | | | 8 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 602 | | | 677 | | | 676 | | | 535 | |
| Travel Time (s) | | 13.7 | | | 15.4 | | | 15.4 | | | 12.2 | |
| Confl. Peds. (#/hr) | 15 | | 38 | 38 | | 15 | 58 | | 32 | 32 | | 58 |
| Confl. Bikes (#/hr) | | | | | | | | | 1 | | | 2 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.89 | 0.89 | 0.89 | 0.87 | 0.87 | 0.87 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 10% | 12% | 0% | 0% | 8% | 0% | 0% | 0% | 0% | 0% | 1% | 4% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | | | | | |
| Adj. Flow (vph) | 24 | 30 | 18 | 6 | 18 | 11 | 18 | 543 | 18 | 23 | 478 | 30 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 72 | 0 | 0 | 35 | 0 | 0 | 579 | 0 | 0 | 531 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.12 | 1.14 | 1.14 | 1.16 | 1.14 | 1.14 | 1.25 | 1.14 | 1.14 | 1.25 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Detector Phase | 5 | 5 | | 5 | 5 | | 1 | 1 | | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 6.0 | 6.0 | | 6.0 | 6.0 | | 20.0 | 20.0 | | 20.0 | 20.0 | |
| Minimum Split (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 24.0 | 24.0 | | 24.0 | 24.0 | |
| Total Split (s) | 24.0 | 24.0 | | 24.0 | 24.0 | | 54.0 | 54.0 | | 54.0 | 54.0 | |
| Total Split (%) | 30.8% | 30.8% | | 30.8% | 30.8% | | 69.2% | 69.2% | | 69.2% | 69.2% | |
| Maximum Green (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 50.0 | 50.0 | | 50.0 | 50.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Lost Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | Max | Max | | Max | Max | | Max | Max | | Max | Max | |
| Walk Time (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | |
| Flash Dont Walk (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | |
| Pedestrian Calls (#/hr) | 13 | 13 | | 13 | 13 | | 23 | 23 | | 23 | 23 | |
| Act Effct Green (s) | | 20.0 | | | 20.0 | | | 50.0 | | | 50.0 | |
| Actuated g/C Ratio | | 0.26 | | | 0.26 | | | 0.64 | | | 0.64 | |
| v/c Ratio | | 0.20 | | | 0.09 | | | 0.58 | | | 0.55 | |
| Control Delay | | 19.7 | | | 17.8 | | | 10.9 | | | 10.3 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 19.7 | | | 17.8 | | | 10.9 | | | 10.3 | |
| LOS | | B | | | B | | | B | | | B | |
| Approach Delay | | 19.7 | | | 17.8 | | | 10.9 | | | 10.3 | |
| Approach LOS | | B | | | B | | | B | | | B | |

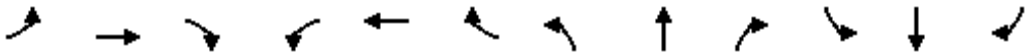
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 78 | | | |
| Actuated Cycle Length: 78 | | | |
| Natural Cycle: 50 | | | |
| Control Type: Semi Act-Uncoord | | | |
| Maximum v/c Ratio: 0.58 | | | |
| Intersection Signal Delay: 11.4 | | Intersection LOS: B | |
| Intersection Capacity Utilization 57.2% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 12: L Street & E 8th Street



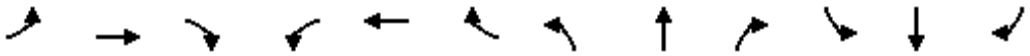
| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 72 | 35 | 579 | 531 |
| v/c Ratio | 0.20 | 0.09 | 0.58 | 0.55 |
| Control Delay | 19.7 | 17.8 | 10.9 | 10.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 19.7 | 17.8 | 10.9 | 10.3 |
| Queue Length 50th (ft) | 20 | 9 | 140 | 123 |
| Queue Length 95th (ft) | 51 | 30 | 214 | 203 |
| Internal Link Dist (ft) | 522 | 597 | 596 | 455 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 366 | 382 | 996 | 965 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.20 | 0.09 | 0.58 | 0.55 |

Intersection Summary



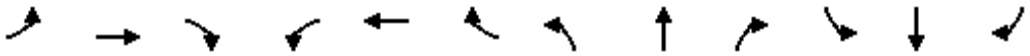
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 21 | 26 | 16 | 5 | 16 | 10 | 16 | 472 | 16 | 21 | 430 | 27 |
| Future Volume (vph) | 21 | 26 | 16 | 5 | 16 | 10 | 16 | 472 | 16 | 21 | 430 | 27 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 16 | 12 | 12 | 15 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Total Lost time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Frpb, ped/bikes | | 0.97 | | | 0.98 | | | 1.00 | | | 0.99 | |
| Flpb, ped/bikes | | 0.99 | | | 0.99 | | | 1.00 | | | 1.00 | |
| Frt | | 0.97 | | | 0.96 | | | 1.00 | | | 0.99 | |
| Flt Protected | | 0.98 | | | 0.99 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | | 1471 | | | 1496 | | | 1579 | | | 1547 | |
| Flt Permitted | | 0.92 | | | 0.97 | | | 0.98 | | | 0.97 | |
| Satd. Flow (perm) | | 1377 | | | 1461 | | | 1552 | | | 1503 | |
| Peak-hour factor, PHF | 0.88 | 0.88 | 0.88 | 0.89 | 0.89 | 0.89 | 0.87 | 0.87 | 0.87 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 24 | 30 | 18 | 6 | 18 | 11 | 18 | 543 | 18 | 23 | 478 | 30 |
| RTOR Reduction (vph) | 0 | 13 | 0 | 0 | 8 | 0 | 0 | 1 | 0 | 0 | 3 | 0 |
| Lane Group Flow (vph) | 0 | 59 | 0 | 0 | 27 | 0 | 0 | 578 | 0 | 0 | 528 | 0 |
| Confl. Peds. (#/hr) | 15 | | 38 | 38 | | 15 | 58 | | 32 | 32 | | 58 |
| Confl. Bikes (#/hr) | | | | | | | | | 1 | | | 2 |
| Heavy Vehicles (%) | 10% | 12% | 0% | 0% | 8% | 0% | 0% | 0% | 0% | 0% | 1% | 4% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 20.0 | | | 20.0 | | | 50.0 | | | 50.0 | |
| Effective Green, g (s) | | 20.0 | | | 20.0 | | | 50.0 | | | 50.0 | |
| Actuated g/C Ratio | | 0.26 | | | 0.26 | | | 0.64 | | | 0.64 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | | | 2.0 | | | 2.0 | |
| Lane Grp Cap (vph) | | 353 | | | 374 | | | 994 | | | 963 | |
| v/s Ratio Prot | | | | | | | | | | | | |
| v/s Ratio Perm | | c0.04 | | | 0.02 | | | c0.37 | | | 0.35 | |
| v/c Ratio | | 0.17 | | | 0.07 | | | 0.58 | | | 0.55 | |
| Uniform Delay, d1 | | 22.5 | | | 22.0 | | | 8.0 | | | 7.8 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 1.0 | | | 0.4 | | | 2.5 | | | 2.2 | |
| Delay (s) | | 23.5 | | | 22.3 | | | 10.5 | | | 10.0 | |
| Level of Service | | C | | | C | | | B | | | A | |
| Approach Delay (s) | | 23.5 | | | 22.3 | | | 10.5 | | | 10.0 | |
| Approach LOS | | C | | | C | | | B | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 11.4 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.46 | | |
| Actuated Cycle Length (s) | 78.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 57.2% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 5 | 5 | 0 | 0 | 16 | 16 | 5 | 467 | 5 | 5 | 404 | 21 |
| Future Volume (vph) | 5 | 5 | 0 | 0 | 16 | 16 | 5 | 467 | 5 | 5 | 404 | 21 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | 0.932 | | | 0.999 | | | 0.993 | |
| Flt Protected | | 0.976 | | | | | | | | | 0.999 | |
| Satd. Flow (prot) | 0 | 1854 | 0 | 0 | 1771 | 0 | 0 | 1898 | 0 | 0 | 1885 | 0 |
| Flt Permitted | | 0.976 | | | | | | | | | 0.999 | |
| Satd. Flow (perm) | 0 | 1854 | 0 | 0 | 1771 | 0 | 0 | 1898 | 0 | 0 | 1885 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 239 | | | 189 | | | 91 | | | 676 | |
| Travel Time (s) | | 5.4 | | | 4.3 | | | 2.1 | | | 15.4 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 5 | 5 | 0 | 0 | 17 | 17 | 5 | 508 | 5 | 5 | 439 | 23 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 10 | 0 | 0 | 34 | 0 | 0 | 518 | 0 | 0 | 467 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |

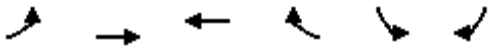
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 39.2% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |



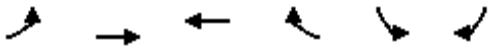
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 5 | 5 | 0 | 0 | 16 | 16 | 5 | 467 | 5 | 5 | 404 | 21 |
| Future Volume (Veh/h) | 5 | 5 | 0 | 0 | 16 | 16 | 5 | 467 | 5 | 5 | 404 | 21 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 5 | 5 | 0 | 0 | 17 | 17 | 5 | 508 | 5 | 5 | 439 | 23 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | 676 | |
| pX, platoon unblocked | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | | 0.88 | | | | | |
| vC, conflicting volume | 1006 | 984 | 450 | 984 | 992 | 510 | 462 | | | 513 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 941 | 915 | 312 | 915 | 925 | 510 | 325 | | | 513 | | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 97 | 98 | 100 | 100 | 93 | 97 | 100 | | | 100 | | |
| cM capacity (veh/h) | 197 | 240 | 648 | 220 | 237 | 567 | 1101 | | | 1063 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 10 | 34 | 518 | 467 |
| Volume Left | 5 | 0 | 5 | 5 |
| Volume Right | 0 | 17 | 5 | 23 |
| cSH | 217 | 334 | 1101 | 1063 |
| Volume to Capacity | 0.05 | 0.10 | 0.00 | 0.00 |
| Queue Length 95th (ft) | 4 | 8 | 0 | 0 |
| Control Delay (s) | 22.4 | 17.0 | 0.1 | 0.1 |
| Lane LOS | C | C | A | A |
| Approach Delay (s) | 22.4 | 17.0 | 0.1 | 0.1 |
| Approach LOS | C | C | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 0.9 | | | |
| Intersection Capacity Utilization | 39.2% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR | Ø2 |
|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | |
| Traffic Volume (vph) | 467 | 399 | 362 | 10 | 0 | 0 | |
| Future Volume (vph) | 467 | 399 | 362 | 10 | 0 | 0 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Lane Util. Factor | 0.95 | 0.95 | 0.95 | 0.95 | 1.00 | 1.00 | |
| Frt | | | 0.996 | | | | |
| Flt Protected | | 0.974 | | | | | |
| Satd. Flow (prot) | 0 | 3516 | 3596 | 0 | 0 | 0 | |
| Flt Permitted | | 0.635 | | | | | |
| Satd. Flow (perm) | 0 | 2292 | 3596 | 0 | 0 | 0 | |
| Right Turn on Red | | | | Yes | | Yes | |
| Satd. Flow (RTOR) | | | 6 | | | | |
| Link Speed (mph) | | 30 | 30 | | 30 | | |
| Link Distance (ft) | | 336 | 398 | | 184 | | |
| Travel Time (s) | | 7.6 | 9.0 | | 4.2 | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | |
| Adj. Flow (vph) | 508 | 434 | 393 | 11 | 0 | 0 | |
| Shared Lane Traffic (%) | | | | | | | |
| Lane Group Flow (vph) | 0 | 942 | 404 | 0 | 0 | 0 | |
| Enter Blocked Intersection | No | No | No | No | No | No | |
| Lane Alignment | Left | Left | Left | Right | Left | Right | |
| Median Width(ft) | | 0 | 0 | | 0 | | |
| Link Offset(ft) | | 0 | 0 | | 0 | | |
| Crosswalk Width(ft) | | 16 | 16 | | 16 | | |
| Two way Left Turn Lane | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Turning Speed (mph) | 15 | | | 9 | 15 | 9 | |
| Number of Detectors | 1 | 2 | 2 | | | | |
| Detector Template | Left | Thru | Thru | | | | |
| Leading Detector (ft) | 20 | 100 | 100 | | | | |
| Trailing Detector (ft) | 0 | 0 | 0 | | | | |
| Detector 1 Position(ft) | 0 | 0 | 0 | | | | |
| Detector 1 Size(ft) | 20 | 6 | 6 | | | | |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | | | | |
| Detector 1 Channel | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | | | | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | | | | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | | | | |
| Detector 2 Position(ft) | | 94 | 94 | | | | |
| Detector 2 Size(ft) | | 6 | 6 | | | | |
| Detector 2 Type | | Cl+Ex | Cl+Ex | | | | |
| Detector 2 Channel | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | 0.0 | | | | |
| Turn Type | Perm | NA | NA | | | | |
| Protected Phases | | 1 | 1 | | | | 2 |
| Permitted Phases | 1 | | | | | | |
| Detector Phase | 1 | 1 | 1 | | | | |
| Switch Phase | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | 8.0 | | | | 10.0 |



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR | Ø2 |
|---|---|---|---|---|---|---|---|
| Minimum Split (s) | 25.4 | 25.4 | 25.4 | | | | 25.0 |
| Total Split (s) | 70.0 | 70.0 | 70.0 | | | | 25.0 |
| Total Split (%) | 73.7% | 73.7% | 73.7% | | | | 26% |
| Maximum Green (s) | 62.6 | 62.6 | 62.6 | | | | 20.5 |
| Yellow Time (s) | 5.4 | 5.4 | 5.4 | | | | 3.5 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | | | 1.0 |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | | | |
| Total Lost Time (s) | | 7.4 | 7.4 | | | | |
| Lead/Lag | Lead | Lead | Lead | | | | Lag |
| Lead-Lag Optimize? | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | | | | 2.0 |
| Recall Mode | Max | Max | Max | | | | None |
| Walk Time (s) | | | | | | | 18.0 |
| Flash Dont Walk (s) | | | | | | | 1.0 |
| Pedestrian Calls (#/hr) | | | | | | | 28 |
| Act Effct Green (s) | | 83.6 | 83.6 | | | | |
| Actuated g/C Ratio | | 0.89 | 0.89 | | | | |
| v/c Ratio | | 0.46 | 0.13 | | | | |
| Control Delay | | 4.8 | 2.7 | | | | |
| Queue Delay | | 0.0 | 0.0 | | | | |
| Total Delay | | 4.8 | 2.7 | | | | |
| LOS | | A | A | | | | |
| Approach Delay | | 4.8 | 2.7 | | | | |
| Approach LOS | | A | A | | | | |

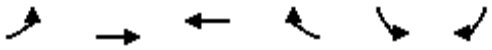
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 95 | | | |
| Actuated Cycle Length: 94.4 | | | |
| Natural Cycle: 60 | | | |
| Control Type: Semi Act-Uncoord | | | |
| Maximum v/c Ratio: 0.46 | | | |
| Intersection Signal Delay: 4.2 | | Intersection LOS: A | |
| Intersection Capacity Utilization 48.5% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 14: Day Blvd Ped



| Lane Group | EBT | WBT |
|---|---|---|
| Lane Group Flow (vph) | 942 | 404 |
| v/c Ratio | 0.46 | 0.13 |
| Control Delay | 4.8 | 2.7 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 4.8 | 2.7 |
| Queue Length 50th (ft) | 0 | 0 |
| Queue Length 95th (ft) | 196 | 56 |
| Internal Link Dist (ft) | 256 | 318 |
| Turn Bay Length (ft) | | |
| Base Capacity (vph) | 2031 | 3187 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.46 | 0.13 |

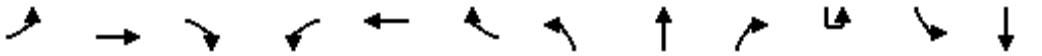
Intersection Summary



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 467 | 399 | 362 | 10 | 0 | 0 |
| Future Volume (vph) | 467 | 399 | 362 | 10 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 7.4 | 7.4 | | | |
| Lane Util. Factor | | 0.95 | 0.95 | | | |
| Frt | | 1.00 | 1.00 | | | |
| Flt Protected | | 0.97 | 1.00 | | | |
| Satd. Flow (prot) | | 3515 | 3595 | | | |
| Flt Permitted | | 0.63 | 1.00 | | | |
| Satd. Flow (perm) | | 2291 | 3595 | | | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 508 | 434 | 393 | 11 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 1 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 942 | 403 | 0 | 0 | 0 |
| Turn Type | Perm | NA | NA | | | |
| Protected Phases | | 1 | 1 | | | |
| Permitted Phases | 1 | | | | | |
| Actuated Green, G (s) | | 78.7 | 78.7 | | | |
| Effective Green, g (s) | | 78.7 | 78.7 | | | |
| Actuated g/C Ratio | | 0.81 | 0.81 | | | |
| Clearance Time (s) | | 7.4 | 7.4 | | | |
| Vehicle Extension (s) | | 2.0 | 2.0 | | | |
| Lane Grp Cap (vph) | | 1854 | 2910 | | | |
| v/s Ratio Prot | | | 0.11 | | | |
| v/s Ratio Perm | | c0.41 | | | | |
| v/c Ratio | | 0.51 | 0.14 | | | |
| Uniform Delay, d1 | | 3.0 | 2.0 | | | |
| Progression Factor | | 1.00 | 1.00 | | | |
| Incremental Delay, d2 | | 1.0 | 0.1 | | | |
| Delay (s) | | 4.0 | 2.1 | | | |
| Level of Service | | A | A | | | |
| Approach Delay (s) | | 4.0 | 2.1 | | 0.0 | |
| Approach LOS | | A | A | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 3.4 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.47 | | |
| Actuated Cycle Length (s) | 97.2 | Sum of lost time (s) | 11.9 |
| Intersection Capacity Utilization | 48.5% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



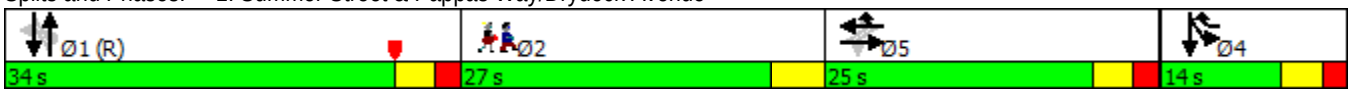
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBU | SBL | SBT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 140 | 96 | 5 | 147 | 53 | 113 | 10 | 991 | 328 | 5 | 349 | 541 |
| Future Volume (vph) | 140 | 96 | 5 | 147 | 53 | 113 | 10 | 991 | 328 | 5 | 349 | 541 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 14 | 12 | 12 | 13 | 16 | 10 | 11 | 12 | 12 | 13 | 12 |
| Storage Length (ft) | 0 | | 0 | 350 | | 0 | 70 | | 0 | | 350 | |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 0 | | 1 | |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | | 25 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 1.00 | 0.95 |
| Ped Bike Factor | | 0.98 | | | 0.99 | | 0.96 | 0.99 | | | 1.00 | 0.97 |
| Frt | | 0.997 | | | | 0.850 | | 0.963 | | | | 0.971 |
| Flt Protected | | 0.972 | | | 0.965 | | 0.950 | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 1594 | 0 | 0 | 1541 | 1458 | 1516 | 2802 | 0 | 0 | 1556 | 2731 |
| Flt Permitted | | 0.633 | | | 0.626 | | 0.155 | | | | 0.155 | |
| Satd. Flow (perm) | 0 | 1021 | 0 | 0 | 991 | 1458 | 237 | 2802 | 0 | 0 | 253 | 2731 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | |
| Satd. Flow (RTOR) | | 1 | | | | 131 | | 46 | | | | 36 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | | 30 |
| Link Distance (ft) | | 745 | | | 950 | | | 1523 | | | | 585 |
| Travel Time (s) | | 16.9 | | | 21.6 | | | 34.6 | | | | 13.3 |
| Confl. Peds. (#/hr) | 32 | | 17 | 17 | | 32 | 127 | | 36 | | 36 | |
| Confl. Bikes (#/hr) | | | 7 | | | 3 | | | 7 | | | |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.86 | 0.86 | 0.86 | 0.89 | 0.89 | 0.89 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 11% | 11% | 0% | 8% | 18% | 13% | 0% | 8% | 2% | 0% | 8% | 13% |
| Adj. Flow (vph) | 165 | 113 | 6 | 171 | 62 | 131 | 11 | 1113 | 369 | 5 | 371 | 576 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 284 | 0 | 0 | 233 | 131 | 11 | 1482 | 0 | 0 | 376 | 713 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | R NA | Left | Left |
| Median Width(ft) | | 0 | | | 6 | | | 13 | | | | 17 |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | | 0 |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | | 16 |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.05 | 1.14 | 1.14 | 1.10 | 0.97 | 1.25 | 1.19 | 1.14 | 1.14 | 1.10 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 9 | 15 | |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | | 1 | 1 | 2 |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | | Left | Left | Thru |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | 20 | 20 | 100 | | 20 | 20 | 100 |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | 20 | 20 | 6 | | 20 | 20 | 6 |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | | 94 |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | | 6 |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | Cl+Ex |

| Lane Group | SBR | Ø2 |
|---|---|---|
| Lane Configurations | | |
| Traffic Volume (vph) | 129 | |
| Future Volume (vph) | 129 | |
| Ideal Flow (vphpl) | 1900 | |
| Lane Width (ft) | 12 | |
| Storage Length (ft) | 0 | |
| Storage Lanes | 0 | |
| Taper Length (ft) | | |
| Lane Util. Factor | 0.95 | |
| Ped Bike Factor | | |
| Frt | | |
| Flt Protected | | |
| Satd. Flow (prot) | 0 | |
| Flt Permitted | | |
| Satd. Flow (perm) | 0 | |
| Right Turn on Red | Yes | |
| Satd. Flow (RTOR) | | |
| Link Speed (mph) | | |
| Link Distance (ft) | | |
| Travel Time (s) | | |
| Confl. Peds. (#/hr) | 127 | |
| Confl. Bikes (#/hr) | 12 | |
| Peak Hour Factor | 0.94 | |
| Heavy Vehicles (%) | 6% | |
| Adj. Flow (vph) | 137 | |
| Shared Lane Traffic (%) | | |
| Lane Group Flow (vph) | 0 | |
| Enter Blocked Intersection | No | |
| Lane Alignment | Right | |
| Median Width(ft) | | |
| Link Offset(ft) | | |
| Crosswalk Width(ft) | | |
| Two way Left Turn Lane | | |
| Headway Factor | 1.14 | |
| Turning Speed (mph) | 9 | |
| Number of Detectors | | |
| Detector Template | | |
| Leading Detector (ft) | | |
| Trailing Detector (ft) | | |
| Detector 1 Position(ft) | | |
| Detector 1 Size(ft) | | |
| Detector 1 Type | | |
| Detector 1 Channel | | |
| Detector 1 Extend (s) | | |
| Detector 1 Queue (s) | | |
| Detector 1 Delay (s) | | |
| Detector 2 Position(ft) | | |
| Detector 2 Size(ft) | | |
| Detector 2 Type | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBU | SBL | SBT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | 0.0 |
| Turn Type | Perm | NA | | Perm | NA | pt+ov | Perm | NA | | D.Pm | D.P+P | NA |
| Protected Phases | | 5 | | | 5 | 5 4 | | 1 | | | 4 | 1 4 |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | 1 | |
| Detector Phase | 5 | 5 | | 5 | 5 | 5 4 | 1 | 1 | | 1 | 4 | 1 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | |
| Minimum Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | | 13.0 | 13.0 | | 13.0 | 13.0 | |
| Total Split (s) | 25.0 | 25.0 | | 25.0 | 25.0 | | 34.0 | 34.0 | | 34.0 | 14.0 | |
| Total Split (%) | 25.0% | 25.0% | | 25.0% | 25.0% | | 34.0% | 34.0% | | 34.0% | 14.0% | |
| Maximum Green (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 29.0 | 29.0 | | 29.0 | 9.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | 0.0 | 0.0 | | | 0.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | 5.0 | 5.0 | | | 5.0 | |
| Lead/Lag | | | | | | | Lead | Lead | | Lead | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | None | None | | None | None | | C-Max | C-Max | | C-Max | None | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 41.6 | | | 41.6 | 55.6 | 29.0 | 29.0 | | | 38.0 | 43.0 |
| Actuated g/C Ratio | | 0.42 | | | 0.42 | 0.56 | 0.29 | 0.29 | | | 0.38 | 0.43 |
| v/c Ratio | | 0.67 | | | 0.57 | 0.15 | 0.16 | 1.75 | | | 1.77 | 0.60 |
| Control Delay | | 36.2 | | | 32.9 | 3.9 | 33.6 | 369.7 | | | 383.9 | 23.2 |
| Queue Delay | | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | | | 0.0 | 0.0 |
| Total Delay | | 36.2 | | | 32.9 | 3.9 | 33.6 | 369.7 | | | 383.9 | 23.2 |
| LOS | | D | | | C | A | C | F | | | F | C |
| Approach Delay | | 36.2 | | | 22.5 | | | 367.2 | | | | 147.7 |
| Approach LOS | | D | | | C | | | F | | | | F |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 100 | | | |
| Actuated Cycle Length: 100 | | | |
| Offset: 0 (0%), Referenced to phase 1:NBSB, Start of Yellow | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 1.77 | | | |
| Intersection Signal Delay: 225.3 | | Intersection LOS: F | |
| Intersection Capacity Utilization 106.5% | | ICU Level of Service G | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 1: Summer Street & Pappas Way/Drydock Avenue





| Lane Group | SBR | Ø2 |
|---|---|---|
| Detector 2 Channel | | |
| Detector 2 Extend (s) | | |
| Turn Type | | |
| Protected Phases | | 2 |
| Permitted Phases | | |
| Detector Phase | | |
| Switch Phase | | |
| Minimum Initial (s) | | 4.0 |
| Minimum Split (s) | | 27.0 |
| Total Split (s) | | 27.0 |
| Total Split (%) | | 27% |
| Maximum Green (s) | | 23.0 |
| Yellow Time (s) | | 4.0 |
| All-Red Time (s) | | 0.0 |
| Lost Time Adjust (s) | | |
| Total Lost Time (s) | | |
| Lead/Lag | | Lag |
| Lead-Lag Optimize? | | |
| Vehicle Extension (s) | | 2.0 |
| Recall Mode | | None |
| Walk Time (s) | | 7.0 |
| Flash Dont Walk (s) | | 16.0 |
| Pedestrian Calls (#/hr) | | 10 |
| Act Effct Green (s) | | |
| Actuated g/C Ratio | | |
| v/c Ratio | | |
| Control Delay | | |
| Queue Delay | | |
| Total Delay | | |
| LOS | | |
| Approach Delay | | |
| Approach LOS | | |

| Intersection Summary |
|---|



| Lane Group | EBT | WBT | WBR | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 284 | 233 | 131 | 11 | 1482 | 376 | 713 |
| v/c Ratio | 0.67 | 0.57 | 0.15 | 0.16 | 1.75 | 1.77 | 0.60 |
| Control Delay | 36.2 | 32.9 | 3.9 | 33.6 | 369.7 | 383.9 | 23.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 36.2 | 32.9 | 3.9 | 33.6 | 369.7 | 383.9 | 23.2 |
| Queue Length 50th (ft) | 128 | 99 | 0 | 5 | ~741 | ~313 | 170 |
| Queue Length 95th (ft) | #379 | #308 | 35 | 21 | #866 | #495 | 230 |
| Internal Link Dist (ft) | 665 | 870 | | | 1443 | | 505 |
| Turn Bay Length (ft) | | | | 70 | | 350 | |
| Base Capacity (vph) | 425 | 412 | 868 | 68 | 845 | 213 | 1194 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.67 | 0.57 | 0.15 | 0.16 | 1.75 | 1.77 | 0.60 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBU | SBL | SBT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 140 | 96 | 5 | 147 | 53 | 113 | 10 | 991 | 328 | 5 | 349 | 541 |
| Future Volume (vph) | 140 | 96 | 5 | 147 | 53 | 113 | 10 | 991 | 328 | 5 | 349 | 541 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 14 | 12 | 12 | 13 | 16 | 10 | 11 | 12 | 12 | 13 | 12 |
| Total Lost time (s) | | 5.0 | | | 5.0 | 5.0 | 5.0 | 5.0 | | | 5.0 | 5.0 |
| Lane Util. Factor | | 1.00 | | | 1.00 | 1.00 | 1.00 | 0.95 | | | 1.00 | 0.95 |
| Frpb, ped/bikes | | 1.00 | | | 1.00 | 1.00 | 1.00 | 0.99 | | | 1.00 | 0.96 |
| Flpb, ped/bikes | | 0.99 | | | 0.99 | 1.00 | 0.95 | 1.00 | | | 1.00 | 1.00 |
| Frt | | 1.00 | | | 1.00 | 0.85 | 1.00 | 0.96 | | | 1.00 | 0.97 |
| Flt Protected | | 0.97 | | | 0.96 | 1.00 | 0.95 | 1.00 | | | 0.95 | 1.00 |
| Satd. Flow (prot) | | 1580 | | | 1532 | 1458 | 1447 | 2797 | | | 1555 | 2725 |
| Flt Permitted | | 0.63 | | | 0.63 | 1.00 | 0.16 | 1.00 | | | 0.16 | 1.00 |
| Satd. Flow (perm) | | 1029 | | | 994 | 1458 | 236 | 2797 | | | 254 | 2725 |
| Peak-hour factor, PHF | 0.85 | 0.85 | 0.85 | 0.86 | 0.86 | 0.86 | 0.89 | 0.89 | 0.89 | 0.94 | 0.94 | 0.94 |
| Adj. Flow (vph) | 165 | 113 | 6 | 171 | 62 | 131 | 11 | 1113 | 369 | 5 | 371 | 576 |
| RTOR Reduction (vph) | 0 | 1 | 0 | 0 | 0 | 58 | 0 | 34 | 0 | 0 | 0 | 22 |
| Lane Group Flow (vph) | 0 | 283 | 0 | 0 | 233 | 73 | 11 | 1448 | 0 | 0 | 376 | 691 |
| Confl. Peds. (#/hr) | 32 | | 17 | 17 | | 32 | 127 | | 36 | | 36 | |
| Confl. Bikes (#/hr) | | | 7 | | | 3 | | | 7 | | | |
| Heavy Vehicles (%) | 11% | 11% | 0% | 8% | 18% | 13% | 0% | 8% | 2% | 0% | 8% | 13% |
| Turn Type | Perm | NA | | Perm | NA | pt+ov | Perm | NA | | D.Pm | D.P+P | NA |
| Protected Phases | | 5 | | | 5 | 5 4 | | 1 | | | 4 | 1 4 |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | 1 | |
| Actuated Green, G (s) | | 41.6 | | | 41.6 | 55.6 | 25.8 | 25.8 | | | 34.8 | 39.8 |
| Effective Green, g (s) | | 41.6 | | | 41.6 | 55.6 | 25.8 | 25.8 | | | 34.8 | 39.8 |
| Actuated g/C Ratio | | 0.42 | | | 0.42 | 0.56 | 0.26 | 0.26 | | | 0.35 | 0.40 |
| Clearance Time (s) | | 5.0 | | | 5.0 | | 5.0 | 5.0 | | | 5.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | | 2.0 | 2.0 | | | 2.0 | |
| Lane Grp Cap (vph) | | 428 | | | 413 | 810 | 60 | 721 | | | 205 | 1084 |
| v/s Ratio Prot | | | | | | 0.05 | | c0.52 | | | c0.16 | 0.25 |
| v/s Ratio Perm | | c0.28 | | | 0.23 | | 0.05 | | | | 0.47 | |
| v/c Ratio | | 0.66 | | | 0.56 | 0.09 | 0.18 | 2.01 | | | 1.83 | 0.64 |
| Uniform Delay, d1 | | 23.5 | | | 22.3 | 10.4 | 28.9 | 37.1 | | | 28.7 | 24.3 |
| Progression Factor | | 1.00 | | | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 | 1.00 |
| Incremental Delay, d2 | | 3.0 | | | 1.1 | 0.0 | 6.6 | 458.6 | | | 393.8 | 0.9 |
| Delay (s) | | 26.5 | | | 23.3 | 10.4 | 35.5 | 495.7 | | | 422.4 | 25.2 |
| Level of Service | | C | | | C | B | D | F | | | F | C |
| Approach Delay (s) | | 26.5 | | | 18.7 | | | 492.3 | | | | 162.4 |
| Approach LOS | | C | | | B | | | F | | | | F |

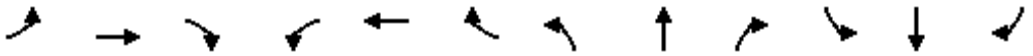
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 286.7 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 1.18 | | |
| Actuated Cycle Length (s) | 100.0 | Sum of lost time (s) | 19.0 |
| Intersection Capacity Utilization | 106.5% | ICU Level of Service | G |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



| Movement | SBR |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | 129 |
| Future Volume (vph) | 129 |
| Ideal Flow (vphpl) | 1900 |
| Lane Width | 12 |
| Total Lost time (s) | |
| Lane Util. Factor | |
| Frpb, ped/bikes | |
| Flpb, ped/bikes | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Peak-hour factor, PHF | 0.94 |
| Adj. Flow (vph) | 137 |
| RTOR Reduction (vph) | 0 |
| Lane Group Flow (vph) | 0 |
| Confl. Peds. (#/hr) | 127 |
| Confl. Bikes (#/hr) | 12 |
| Heavy Vehicles (%) | 6% |
| Turn Type | |
| Protected Phases | |
| Permitted Phases | |
| Actuated Green, G (s) | |
| Effective Green, g (s) | |
| Actuated g/C Ratio | |
| Clearance Time (s) | |
| Vehicle Extension (s) | |
| Lane Grp Cap (vph) | |
| v/s Ratio Prot | |
| v/s Ratio Perm | |
| v/c Ratio | |
| Uniform Delay, d1 | |
| Progression Factor | |
| Incremental Delay, d2 | |
| Delay (s) | |
| Level of Service | |
| Approach Delay (s) | |
| Approach LOS | |

| Intersection Summary |
|---|

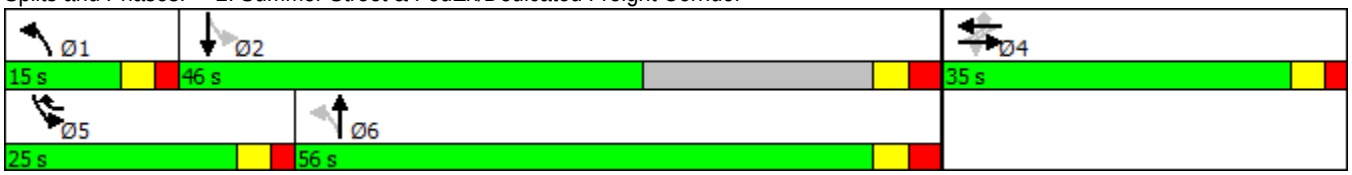


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 31 | 0 | 0 | 16 | 0 | 55 | 0 | 1241 | 21 | 94 | 621 | 0 |
| Future Volume (vph) | 31 | 0 | 0 | 16 | 0 | 55 | 0 | 1241 | 21 | 94 | 621 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 13 | 13 | 13 | 12 | 12 | 12 | 10 | 10 | 10 | 11 | 11 | 11 |
| Storage Length (ft) | 0 | | 0 | 0 | | 60 | 60 | | 0 | 120 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 50 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Frt | | | | | | 0.850 | | 0.997 | | | | |
| Flt Protected | | 0.950 | | | 0.950 | | | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1679 | 0 | 0 | 1624 | 727 | 1596 | 3023 | 0 | 785 | 2991 | 0 |
| Flt Permitted | | 0.746 | | | 0.735 | | | | | 0.121 | | |
| Satd. Flow (perm) | 0 | 1318 | 0 | 0 | 1257 | 727 | 1596 | 3023 | 0 | 100 | 2991 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | | 28 | | 2 | | | | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 203 | | | 352 | | | 675 | | | 1523 | |
| Travel Time (s) | | 4.6 | | | 8.0 | | | 15.3 | | | 34.6 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 100% | 0% | 0% | 0% | 100% | 5% | 0% |
| Adj. Flow (vph) | 34 | 0 | 0 | 17 | 0 | 60 | 0 | 1349 | 23 | 102 | 675 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 34 | 0 | 0 | 17 | 60 | 0 | 1372 | 0 | 102 | 675 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 12 | | | 11 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.10 | 1.10 | 1.10 | 1.14 | 1.14 | 1.14 | 1.25 | 1.25 | 1.25 | 1.19 | 1.19 | 1.19 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | 20 | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | 20 | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | pm+ov | pm+pt | NA | | pm+pt | NA | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Protected Phases | | 4 | | | 4 | 5 | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 4 | | | 4 | | 4 | 6 | 6 | | 2 | | |
| Detector Phase | 4 | 4 | | 4 | 4 | 5 | 1 | 6 | | 5 | 2 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 6.0 | 6.0 | | 6.0 | 6.0 | 6.0 | 6.0 | 10.0 | | 6.0 | 10.0 | |
| Minimum Split (s) | 26.0 | 26.0 | | 26.0 | 26.0 | 11.0 | 11.0 | 24.0 | | 11.0 | 24.0 | |
| Total Split (s) | 35.0 | 35.0 | | 35.0 | 35.0 | 25.0 | 15.0 | 56.0 | | 25.0 | 46.0 | |
| Total Split (%) | 30.2% | 30.2% | | 30.2% | 30.2% | 21.6% | 12.9% | 48.3% | | 21.6% | 39.7% | |
| Maximum Green (s) | 30.0 | 30.0 | | 30.0 | 30.0 | 20.0 | 10.0 | 50.0 | | 20.0 | 40.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 3.0 | | 2.0 | 3.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | 5.0 | 5.0 | 6.0 | | 5.0 | 6.0 | |
| Lead/Lag | | | | | | Lead | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | None | None | | None | None | None | None | Ped | | None | Max | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | | 7.0 | | | | |
| Flash Dont Walk (s) | 14.0 | 14.0 | | 14.0 | 14.0 | | | 9.0 | | | | |
| Pedestrian Calls (#/hr) | 10 | 10 | | 10 | 10 | | | 10 | | | | |
| Act Effct Green (s) | | 9.1 | | | 9.1 | 21.9 | | 53.3 | | 72.4 | 74.2 | |
| Actuated g/C Ratio | | 0.11 | | | 0.11 | 0.25 | | 0.62 | | 0.84 | 0.86 | |
| v/c Ratio | | 0.25 | | | 0.13 | 0.29 | | 0.74 | | 0.55 | 0.26 | |
| Control Delay | | 41.5 | | | 39.2 | 16.6 | | 18.9 | | 22.4 | 3.1 | |
| Queue Delay | | 0.0 | | | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | |
| Total Delay | | 41.5 | | | 39.2 | 16.6 | | 18.9 | | 22.4 | 3.1 | |
| LOS | | D | | | D | B | | B | | C | A | |
| Approach Delay | | 41.5 | | | 21.6 | | | 18.9 | | | 5.6 | |
| Approach LOS | | D | | | C | | | B | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 116 | | | |
| Actuated Cycle Length: 86.5 | | | |
| Natural Cycle: 90 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 0.74 | | | |
| Intersection Signal Delay: 14.8 | | Intersection LOS: B | |
| Intersection Capacity Utilization 66.6% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 2: Summer Street & FedEx/Dedicated Freight Corridor

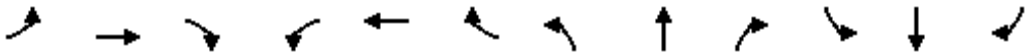




| Lane Group | EBT | WBT | WBR | NBT | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 34 | 17 | 60 | 1372 | 102 | 675 |
| v/c Ratio | 0.25 | 0.13 | 0.29 | 0.74 | 0.55 | 0.26 |
| Control Delay | 41.5 | 39.2 | 16.6 | 18.9 | 22.4 | 3.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 41.5 | 39.2 | 16.6 | 18.9 | 22.4 | 3.1 |
| Queue Length 50th (ft) | 18 | 9 | 13 | 276 | 10 | 37 |
| Queue Length 95th (ft) | 48 | 29 | 41 | #638 | 79 | 109 |
| Internal Link Dist (ft) | 123 | 272 | | 595 | | 1443 |
| Turn Bay Length (ft) | | | 60 | | 120 | |
| Base Capacity (vph) | 469 | 447 | 266 | 1905 | 246 | 2523 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.07 | 0.04 | 0.23 | 0.72 | 0.41 | 0.27 |

Intersection Summary

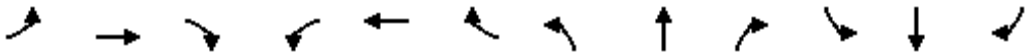
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 31 | 0 | 0 | 16 | 0 | 55 | 0 | 1241 | 21 | 94 | 621 | 0 |
| Future Volume (vph) | 31 | 0 | 0 | 16 | 0 | 55 | 0 | 1241 | 21 | 94 | 621 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 13 | 13 | 13 | 12 | 12 | 12 | 10 | 10 | 10 | 11 | 11 | 11 |
| Total Lost time (s) | | 5.0 | | | 5.0 | 5.0 | | 6.0 | | 5.0 | 6.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | 1.00 | | 0.95 | | 1.00 | 0.95 | |
| Frt | | 1.00 | | | 1.00 | 0.85 | | 1.00 | | 1.00 | 1.00 | |
| Flt Protected | | 0.95 | | | 0.95 | 1.00 | | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 1679 | | | 1624 | 727 | | 3025 | | 785 | 2991 | |
| Flt Permitted | | 0.75 | | | 0.73 | 1.00 | | 1.00 | | 0.12 | 1.00 | |
| Satd. Flow (perm) | | 1319 | | | 1257 | 727 | | 3025 | | 100 | 2991 | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 34 | 0 | 0 | 17 | 0 | 60 | 0 | 1349 | 23 | 102 | 675 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 22 | 0 | 1 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 34 | 0 | 0 | 17 | 38 | 0 | 1371 | 0 | 102 | 675 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 100% | 0% | 0% | 0% | 100% | 5% | 0% |
| Turn Type | Perm | NA | | Perm | NA | pm+ov | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | | 4 | | | 4 | 5 | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 4 | | | 4 | | 4 | 6 | 6 | | 2 | | |
| Actuated Green, G (s) | | 6.2 | | | 6.2 | 19.2 | | 53.4 | | 71.4 | 71.4 | |
| Effective Green, g (s) | | 6.2 | | | 6.2 | 19.2 | | 53.4 | | 71.4 | 71.4 | |
| Actuated g/C Ratio | | 0.07 | | | 0.07 | 0.22 | | 0.60 | | 0.81 | 0.81 | |
| Clearance Time (s) | | 5.0 | | | 5.0 | 5.0 | | 6.0 | | 5.0 | 6.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | 2.0 | | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | | 92 | | | 87 | 198 | | 1823 | | 181 | 2410 | |
| v/s Ratio Prot | | | | | | 0.03 | | c0.45 | | c0.08 | 0.23 | |
| v/s Ratio Perm | | c0.03 | | | 0.01 | 0.02 | | | | 0.37 | | |
| v/c Ratio | | 0.37 | | | 0.20 | 0.19 | | 0.75 | | 0.56 | 0.28 | |
| Uniform Delay, d1 | | 39.3 | | | 38.8 | 28.4 | | 12.8 | | 9.8 | 2.2 | |
| Progression Factor | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 0.9 | | | 0.4 | 0.2 | | 1.6 | | 2.4 | 0.3 | |
| Delay (s) | | 40.2 | | | 39.2 | 28.5 | | 14.4 | | 12.2 | 2.4 | |
| Level of Service | | D | | | D | C | | B | | B | A | |
| Approach Delay (s) | | 40.2 | | | 30.9 | | | 14.4 | | | 3.7 | |
| Approach LOS | | D | | | C | | | B | | | A | |

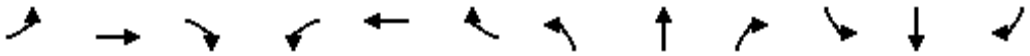
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 11.7 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.69 | | |
| Actuated Cycle Length (s) | 88.6 | Sum of lost time (s) | 16.0 |
| Intersection Capacity Utilization | 66.6% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 16 | 0 | 10 | 29 | 0 | 37 | 31 | 1130 | 25 | 36 | 585 | 47 |
| Future Volume (vph) | 16 | 0 | 10 | 29 | 0 | 37 | 31 | 1130 | 25 | 36 | 585 | 47 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 14 | 12 | 12 | 12 | 12 | 12 | 10 | 10 | 12 | 12 | 10 | 10 |
| Storage Length (ft) | 0 | | 0 | 0 | | 100 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.947 | | | | 0.850 | | 0.997 | | | 0.989 | |
| Flt Protected | | 0.970 | | | 0.950 | | | 0.999 | | | 0.997 | |
| Satd. Flow (prot) | 0 | 1347 | 0 | 0 | 1624 | 1454 | 0 | 2989 | 0 | 0 | 2913 | 0 |
| Flt Permitted | | 0.970 | | | 0.950 | | | 0.999 | | | 0.997 | |
| Satd. Flow (perm) | 0 | 1347 | 0 | 0 | 1624 | 1454 | 0 | 2989 | 0 | 0 | 2913 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 362 | | | 235 | | | 355 | | | 675 | |
| Travel Time (s) | | 8.2 | | | 5.3 | | | 8.1 | | | 15.3 | |
| Confl. Peds. (#/hr) | | | | | | | 126 | | | | | 126 |
| Confl. Bikes (#/hr) | | | | | | | | | | | | 4 |
| Peak Hour Factor | 0.64 | 0.92 | 0.64 | 0.92 | 0.92 | 0.92 | 0.97 | 0.97 | 0.92 | 0.92 | 0.89 | 0.89 |
| Heavy Vehicles (%) | 8% | 0% | 30% | 0% | 0% | 0% | 3% | 1% | 0% | 0% | 3% | 0% |
| Parking (#/hr) | | | | | | | 1 | | | | | 1 |
| Adj. Flow (vph) | 25 | 0 | 16 | 32 | 0 | 40 | 32 | 1165 | 27 | 39 | 657 | 53 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 41 | 0 | 0 | 32 | 40 | 0 | 1224 | 0 | 0 | 749 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 10 | | | 10 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.05 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.25 | 1.25 | 1.14 | 1.14 | 1.25 | 1.25 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |

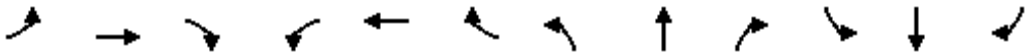
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 75.4% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 16 | 0 | 10 | 29 | 0 | 37 | 31 | 1130 | 25 | 36 | 585 | 47 |
| Future Volume (Veh/h) | 16 | 0 | 10 | 29 | 0 | 37 | 31 | 1130 | 25 | 36 | 585 | 47 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.64 | 0.92 | 0.64 | 0.92 | 0.92 | 0.92 | 0.97 | 0.97 | 0.92 | 0.92 | 0.89 | 0.89 |
| Hourly flow rate (vph) | 25 | 0 | 16 | 32 | 0 | 40 | 32 | 1165 | 27 | 39 | 657 | 53 |
| Pedestrians | | 126 | | | | | | | | | | |
| Lane Width (ft) | | 12.0 | | | | | | | | | | |
| Walking Speed (ft/s) | | 4.0 | | | | | | | | | | |
| Percent Blockage | | 10 | | | | | | | | | | |
| Right turn flare (veh) | | | | | | 4 | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | 355 | | | 675 | |
| pX, platoon unblocked | 0.81 | 0.81 | 1.00 | 0.81 | 0.81 | 0.81 | 1.00 | | | 0.81 | | |
| vC, conflicting volume | 1534 | 2144 | 481 | 1665 | 2156 | 596 | 836 | | | 1192 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1183 | 1934 | 476 | 1344 | 1950 | 34 | 832 | | | 770 | | |
| tC, single (s) | 7.7 | 6.5 | 7.5 | 7.5 | 6.5 | 6.9 | 4.2 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.6 | 4.0 | 3.6 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 69 | 100 | 96 | 57 | 100 | 95 | 95 | | | 94 | | |
| cM capacity (veh/h) | 81 | 44 | 416 | 74 | 43 | 841 | 706 | | | 692 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | SB 1 | SB 2 |
|---|---|---|---|---|---|---|
| Volume Total | 41 | 72 | 614 | 610 | 368 | 382 |
| Volume Left | 25 | 32 | 32 | 0 | 39 | 0 |
| Volume Right | 16 | 40 | 0 | 27 | 0 | 53 |
| cSH | 118 | 167 | 706 | 1700 | 692 | 1700 |
| Volume to Capacity | 0.35 | 0.43 | 0.05 | 0.36 | 0.06 | 0.22 |
| Queue Length 95th (ft) | 35 | 49 | 4 | 0 | 4 | 0 |
| Control Delay (s) | 50.7 | 43.4 | 1.2 | 0.0 | 1.8 | 0.0 |
| Lane LOS | F | E | A | | A | |
| Approach Delay (s) | 50.7 | 43.4 | 0.6 | | 0.9 | |
| Approach LOS | F | E | | | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 3.2 | | | |
| Intersection Capacity Utilization | 75.4% | ICU Level of Service | D | |
| Analysis Period (min) | 15 | | | |



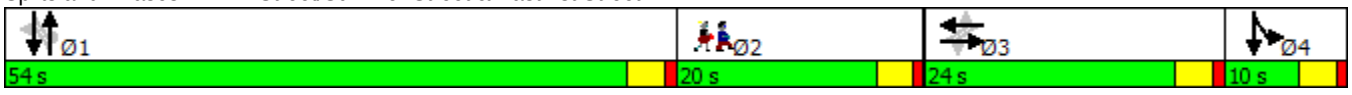
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 48 | 59 | 41 | 28 | 101 | 365 | 41 | 758 | 46 | 157 | 398 | 94 |
| Future Volume (vph) | 48 | 59 | 41 | 28 | 101 | 365 | 41 | 758 | 46 | 157 | 398 | 94 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 15 | 12 | 12 | 16 | 12 | 12 | 9 | 12 | 12 | 9 | 12 |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 100 | | 0 | 100 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Ped Bike Factor | | 0.98 | | | 0.97 | | | 0.99 | | | 0.98 | |
| Frt | | 0.962 | | | 0.900 | | | 0.992 | | | 0.978 | |
| Flt Protected | | 0.984 | | | 0.997 | | | 0.998 | | | 0.988 | |
| Satd. Flow (prot) | 0 | 1614 | 0 | 0 | 1656 | 0 | 0 | 2773 | 0 | 0 | 2604 | 0 |
| Flt Permitted | | 0.417 | | | 0.973 | | | 0.884 | | | 0.554 | |
| Satd. Flow (perm) | 0 | 683 | 0 | 0 | 1614 | 0 | 0 | 2452 | 0 | 0 | 1456 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 16 | | | 115 | | | 7 | | | 26 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 540 | | | 576 | | | 340 | | | 355 | |
| Travel Time (s) | | 12.3 | | | 13.1 | | | 7.7 | | | 8.1 | |
| Confl. Peds. (#/hr) | 16 | | 17 | 17 | | 16 | 104 | | 44 | 44 | | 104 |
| Confl. Bikes (#/hr) | | | 2 | | | 2 | | | 11 | | | 2 |
| Peak Hour Factor | 0.84 | 0.84 | 0.84 | 0.83 | 0.83 | 0.83 | 0.94 | 0.94 | 0.94 | 0.91 | 0.91 | 0.91 |
| Heavy Vehicles (%) | 12% | 6% | 7% | 17% | 1% | 1% | 2% | 2% | 38% | 15% | 3% | 8% |
| Adj. Flow (vph) | 57 | 70 | 49 | 34 | 122 | 440 | 44 | 806 | 49 | 173 | 437 | 103 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 176 | 0 | 0 | 596 | 0 | 0 | 899 | 0 | 0 | 713 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.01 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 1.30 | 1.14 | 1.14 | 1.30 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |

| Lane Group | Ø2 |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | |
| Future Volume (vph) | |
| Ideal Flow (vphpl) | |
| Lane Width (ft) | |
| Storage Length (ft) | |
| Storage Lanes | |
| Taper Length (ft) | |
| Lane Util. Factor | |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Right Turn on Red | |
| Satd. Flow (RTOR) | |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | |
| Heavy Vehicles (%) | |
| Adj. Flow (vph) | |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | |
| Enter Blocked Intersection | |
| Lane Alignment | |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | |
| Turning Speed (mph) | |
| Number of Detectors | |
| Detector Template | |
| Leading Detector (ft) | |
| Trailing Detector (ft) | |
| Detector 1 Position(ft) | |
| Detector 1 Size(ft) | |
| Detector 1 Type | |
| Detector 1 Channel | |
| Detector 1 Extend (s) | |
| Detector 1 Queue (s) | |
| Detector 1 Delay (s) | |
| Detector 2 Position(ft) | |
| Detector 2 Size(ft) | |
| Detector 2 Type | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | D.P+P | NA | |
| Protected Phases | | 3 | | | 3 | | | 1 | | 4 | 1 4 | |
| Permitted Phases | 3 | | | 3 | | | 1 | | | 1 | | |
| Detector Phase | 3 | 3 | | 3 | 3 | | 1 | 1 | | 4 | 1 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 10.0 | 10.0 | | 5.0 | | |
| Minimum Split (s) | 11.0 | 11.0 | | 11.0 | 11.0 | | 14.0 | 14.0 | | 9.0 | | |
| Total Split (s) | 24.0 | 24.0 | | 24.0 | 24.0 | | 54.0 | 54.0 | | 10.0 | | |
| Total Split (%) | 22.2% | 22.2% | | 22.2% | 22.2% | | 50.0% | 50.0% | | 9.3% | | |
| Maximum Green (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 50.0 | 50.0 | | 6.0 | | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | |
| Total Lost Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | | |
| Lead/Lag | Lead | Lead | | Lead | Lead | | Lead | Lead | | Lag | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 1.0 | | |
| Recall Mode | None | None | | None | None | | Max | Max | | None | | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 20.2 | | | 20.2 | | | 50.5 | | | 56.6 | |
| Actuated g/C Ratio | | 0.21 | | | 0.21 | | | 0.53 | | | 0.59 | |
| v/c Ratio | | 1.13 | | | 1.39 | | | 0.70 | | | 0.76 | |
| Control Delay | | 146.3 | | | 214.4 | | | 22.3 | | | 20.5 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 146.3 | | | 214.4 | | | 22.3 | | | 20.5 | |
| LOS | | F | | | F | | | C | | | C | |
| Approach Delay | | 146.3 | | | 214.4 | | | 22.3 | | | 20.5 | |
| Approach LOS | | F | | | F | | | C | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 108 | | | |
| Actuated Cycle Length: 96 | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 1.39 | | | |
| Intersection Signal Delay: 78.9 | | Intersection LOS: E | |
| Intersection Capacity Utilization 92.6% | | ICU Level of Service F | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 4: L Street/Summer Street & East 1st Street



| Lane Group | Ø2 |
|---|---|
| Detector 2 Channel | |
| Detector 2 Extend (s) | |
| Turn Type | |
| Protected Phases | 2 |
| Permitted Phases | |
| Detector Phase | |
| Switch Phase | |
| Minimum Initial (s) | 4.0 |
| Minimum Split (s) | 20.0 |
| Total Split (s) | 20.0 |
| Total Split (%) | 19% |
| Maximum Green (s) | 16.0 |
| Yellow Time (s) | 3.0 |
| All-Red Time (s) | 1.0 |
| Lost Time Adjust (s) | |
| Total Lost Time (s) | |
| Lead/Lag | Lag |
| Lead-Lag Optimize? | |
| Vehicle Extension (s) | 3.0 |
| Recall Mode | None |
| Walk Time (s) | 7.0 |
| Flash Dont Walk (s) | 9.0 |
| Pedestrian Calls (#/hr) | 22 |
| Act Effct Green (s) | |
| Actuated g/C Ratio | |
| v/c Ratio | |
| Control Delay | |
| Queue Delay | |
| Total Delay | |
| LOS | |
| Approach Delay | |
| Approach LOS | |

| Intersection Summary |
|---|

| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 176 | 596 | 899 | 713 |
| v/c Ratio | 1.13 | 1.39 | 0.70 | 0.76 |
| Control Delay | 146.3 | 214.4 | 22.3 | 20.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 146.3 | 214.4 | 22.3 | 20.5 |
| Queue Length 50th (ft) | ~100 | ~379 | 164 | 75 |
| Queue Length 95th (ft) | #260 | #647 | 355 | #216 |
| Internal Link Dist (ft) | 460 | 496 | 260 | 275 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 156 | 430 | 1293 | 941 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 1.13 | 1.39 | 0.70 | 0.76 |

Intersection Summary

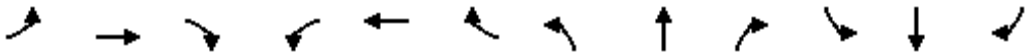
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 48 | 59 | 41 | 28 | 101 | 365 | 41 | 758 | 46 | 157 | 398 | 94 |
| Future Volume (vph) | 48 | 59 | 41 | 28 | 101 | 365 | 41 | 758 | 46 | 157 | 398 | 94 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 15 | 12 | 12 | 16 | 12 | 12 | 9 | 12 | 12 | 9 | 12 |
| Total Lost time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | | | 0.95 | | | 0.95 | |
| Frpb, ped/bikes | | 0.98 | | | 0.97 | | | 1.00 | | | 0.98 | |
| Flpb, ped/bikes | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Frt | | 0.96 | | | 0.90 | | | 0.99 | | | 0.98 | |
| Flt Protected | | 0.98 | | | 1.00 | | | 1.00 | | | 0.99 | |
| Satd. Flow (prot) | | 1614 | | | 1658 | | | 2768 | | | 2605 | |
| Flt Permitted | | 0.42 | | | 0.97 | | | 0.88 | | | 0.55 | |
| Satd. Flow (perm) | | 684 | | | 1617 | | | 2452 | | | 1462 | |
| Peak-hour factor, PHF | 0.84 | 0.84 | 0.84 | 0.83 | 0.83 | 0.83 | 0.94 | 0.94 | 0.94 | 0.91 | 0.91 | 0.91 |
| Adj. Flow (vph) | 57 | 70 | 49 | 34 | 122 | 440 | 44 | 806 | 49 | 173 | 437 | 103 |
| RTOR Reduction (vph) | 0 | 13 | 0 | 0 | 91 | 0 | 0 | 3 | 0 | 0 | 11 | 0 |
| Lane Group Flow (vph) | 0 | 163 | 0 | 0 | 505 | 0 | 0 | 896 | 0 | 0 | 702 | 0 |
| Confl. Peds. (#/hr) | 16 | | 17 | 17 | | 16 | 104 | | 44 | 44 | | 104 |
| Confl. Bikes (#/hr) | | | 2 | | | 2 | | | 11 | | | 2 |
| Heavy Vehicles (%) | 12% | 6% | 7% | 17% | 1% | 1% | 2% | 2% | 38% | 15% | 3% | 8% |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | D.P+P | NA | |
| Protected Phases | | 3 | | | 3 | | | 1 | | 4 | 1 4 | |
| Permitted Phases | 3 | | | 3 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 20.2 | | | 20.2 | | | 50.5 | | | 56.6 | |
| Effective Green, g (s) | | 20.2 | | | 20.2 | | | 50.5 | | | 56.6 | |
| Actuated g/C Ratio | | 0.21 | | | 0.21 | | | 0.51 | | | 0.57 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | | | 3.0 | | | | |
| Lane Grp Cap (vph) | | 140 | | | 331 | | | 1257 | | | 910 | |
| v/s Ratio Prot | | | | | | | | | | | c0.05 | |
| v/s Ratio Perm | | 0.24 | | | c0.31 | | | 0.37 | | | c0.40 | |
| v/c Ratio | | 1.17 | | | 1.52 | | | 0.71 | | | 0.77 | |
| Uniform Delay, d1 | | 39.1 | | | 39.1 | | | 18.4 | | | 16.0 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 127.7 | | | 250.9 | | | 3.5 | | | 3.7 | |
| Delay (s) | | 166.8 | | | 290.0 | | | 21.9 | | | 19.7 | |
| Level of Service | | F | | | F | | | C | | | B | |
| Approach Delay (s) | | 166.8 | | | 290.0 | | | 21.9 | | | 19.7 | |
| Approach LOS | | F | | | F | | | C | | | B | |

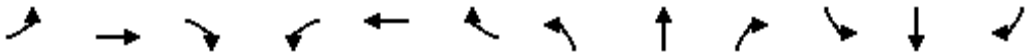
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 99.0 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 0.90 | | |
| Actuated Cycle Length (s) | 98.5 | Sum of lost time (s) | 16.0 |
| Intersection Capacity Utilization | 92.6% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 16 | 5 | 21 | 10 | 16 | 60 | 41 | 749 | 31 | 10 | 448 | 21 |
| Future Volume (vph) | 16 | 5 | 21 | 10 | 16 | 60 | 41 | 749 | 31 | 10 | 448 | 21 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 16 | 12 | 12 | 16 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.932 | | | 0.905 | | | 0.995 | | | 0.994 | |
| Flt Protected | | 0.981 | | | 0.994 | | | 0.997 | | | 0.999 | |
| Satd. Flow (prot) | 0 | 1459 | 0 | 0 | 1402 | 0 | 0 | 1835 | 0 | 0 | 1851 | 0 |
| Flt Permitted | | 0.981 | | | 0.994 | | | 0.997 | | | 0.999 | |
| Satd. Flow (perm) | 0 | 1459 | 0 | 0 | 1402 | 0 | 0 | 1835 | 0 | 0 | 1851 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 429 | | | 453 | | | 298 | | | 340 | |
| Travel Time (s) | | 9.8 | | | 10.3 | | | 6.8 | | | 7.7 | |
| Confl. Peds. (#/hr) | 15 | | 20 | 20 | | 15 | 90 | | 41 | 41 | | 90 |
| Confl. Bikes (#/hr) | | | | | | 1 | | | 9 | | | |
| Peak Hour Factor | 0.57 | 0.57 | 0.57 | 0.88 | 0.88 | 0.88 | 0.94 | 0.94 | 0.94 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 10% | 7% | 0% | 3% | 4% | 25% | 0% | 4% | 5% |
| Adj. Flow (vph) | 28 | 9 | 37 | 11 | 18 | 68 | 44 | 797 | 33 | 10 | 467 | 22 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 74 | 0 | 0 | 97 | 0 | 0 | 874 | 0 | 0 | 499 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.25 | 1.14 | 1.14 | 1.25 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 0.97 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 86.4% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 16 | 5 | 21 | 10 | 16 | 60 | 41 | 749 | 31 | 10 | 448 | 21 |
| Future Volume (Veh/h) | 16 | 5 | 21 | 10 | 16 | 60 | 41 | 749 | 31 | 10 | 448 | 21 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.57 | 0.57 | 0.57 | 0.88 | 0.88 | 0.88 | 0.94 | 0.94 | 0.94 | 0.96 | 0.96 | 0.96 |
| Hourly flow rate (vph) | 28 | 9 | 37 | 11 | 18 | 68 | 44 | 797 | 33 | 10 | 467 | 22 |
| Pedestrians | | 90 | | | 41 | | | 20 | | | 15 | |
| Lane Width (ft) | | 10.0 | | | 10.0 | | | 16.0 | | | 16.0 | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Percent Blockage | | 6 | | | 3 | | | 2 | | | 2 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | 602 | | | 340 | |
| pX, platoon unblocked | 0.84 | 0.84 | 0.85 | 0.84 | 0.84 | 0.77 | 0.85 | | | 0.77 | | |
| vC, conflicting volume | 1582 | 1547 | 588 | 1502 | 1542 | 870 | 579 | | | 871 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1198 | 1157 | 428 | 1103 | 1150 | 677 | 417 | | | 679 | | |
| tC, single (s) | *4.0 | *4.0 | *5.0 | *4.0 | *4.0 | *4.0 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.6 | 4.1 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 89 | 97 | 93 | 97 | 94 | 87 | 95 | | | 99 | | |
| cM capacity (veh/h) | 263 | 318 | 568 | 315 | 317 | 505 | 906 | | | 687 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 74 | 97 | 874 | 499 |
| Volume Left | 28 | 11 | 44 | 10 |
| Volume Right | 37 | 68 | 33 | 22 |
| cSH | 370 | 428 | 906 | 687 |
| Volume to Capacity | 0.20 | 0.23 | 0.05 | 0.01 |
| Queue Length 95th (ft) | 18 | 22 | 4 | 1 |
| Control Delay (s) | 17.2 | 15.8 | 1.3 | 0.4 |
| Lane LOS | C | C | A | A |
| Approach Delay (s) | 17.2 | 15.8 | 1.3 | 0.4 |
| Approach LOS | C | C | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.7 | | |
| Intersection Capacity Utilization | 86.4% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

* User Entered Value



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBU | NBL | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 17 | 0 | 21 | 5 | 16 | 31 | 5 | 21 | 748 | 31 | 16 | 436 |
| Future Volume (vph) | 17 | 0 | 21 | 5 | 16 | 31 | 5 | 21 | 748 | 31 | 16 | 436 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 12 | 16 | 12 | 12 | 16 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.925 | | | 0.919 | | | | 0.995 | | | 0.994 |
| Flt Protected | | 0.978 | | | 0.995 | | | | 0.998 | | | 0.998 |
| Satd. Flow (prot) | 0 | 1258 | 0 | 0 | 1313 | 0 | 0 | 0 | 1853 | 0 | 0 | 1834 |
| Flt Permitted | | 0.978 | | | 0.995 | | | | 0.998 | | | 0.998 |
| Satd. Flow (perm) | 0 | 1258 | 0 | 0 | 1313 | 0 | 0 | 0 | 1853 | 0 | 0 | 1834 |
| Link Speed (mph) | | 30 | | | 30 | | | | 30 | | | 30 |
| Link Distance (ft) | | 638 | | | 716 | | | | 304 | | | 298 |
| Travel Time (s) | | 14.5 | | | 16.3 | | | | 6.9 | | | 6.8 |
| Confl. Peds. (#/hr) | 22 | | 31 | 31 | | 22 | | 75 | | 46 | 46 | |
| Confl. Bikes (#/hr) | | | | | | | | | | 9 | | |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.67 | 0.67 | 0.67 | 0.92 | 0.94 | 0.94 | 0.94 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 0% | 0% | 6% | 0% | 0% | 0% | 0% | 5% | 4% | 0% | 6% | 5% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | | | | | |
| Adj. Flow (vph) | 20 | 0 | 25 | 7 | 24 | 46 | 5 | 22 | 796 | 33 | 17 | 469 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 45 | 0 | 0 | 77 | 0 | 0 | 0 | 856 | 0 | 0 | 510 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | R NA | Left | Left | Right | Left | Left |
| Median Width(ft) | | 0 | | | 0 | | | | 0 | | | 0 |
| Link Offset(ft) | | 0 | | | 0 | | | | 0 | | | 0 |
| Crosswalk Width(ft) | | 16 | | | 16 | | | | 16 | | | 16 |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 0.97 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 9 | 15 | | 9 | 15 | |
| Sign Control | | Stop | | | Stop | | | | Free | | | Free |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 76.3% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |



| Lane Group | SBR |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | 22 |
| Future Volume (vph) | 22 |
| Ideal Flow (vphpl) | 1900 |
| Lane Width (ft) | 12 |
| Lane Util. Factor | 1.00 |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | 0 |
| Flt Permitted | |
| Satd. Flow (perm) | 0 |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | 75 |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | 0.93 |
| Heavy Vehicles (%) | 0% |
| Parking (#/hr) | |
| Adj. Flow (vph) | 24 |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | 0 |
| Enter Blocked Intersection | No |
| Lane Alignment | Right |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | 1.14 |
| Turning Speed (mph) | 9 |
| Sign Control | |

| Intersection Summary |
|---|

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBU | NBL | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 17 | 0 | 21 | 5 | 16 | 31 | 5 | 21 | 748 | 31 | 16 | 436 |
| Future Volume (Veh/h) | 17 | 0 | 21 | 5 | 16 | 31 | 5 | 21 | 748 | 31 | 16 | 436 |
| Sign Control | | Stop | | | Stop | | | | Free | | | Free |
| Grade | | 0% | | | 0% | | | | 0% | | | 0% |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.67 | 0.67 | 0.67 | 0.92 | 0.94 | 0.94 | 0.94 | 0.93 | 0.93 |
| Hourly flow rate (vph) | 20 | 0 | 25 | 7 | 24 | 46 | 0 | 22 | 796 | 33 | 17 | 469 |
| Pedestrians | | 75 | | | 46 | | | | 31 | | | 22 |
| Lane Width (ft) | | 10.0 | | | 10.0 | | | | 16.0 | | | 16.0 |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | | 4.0 | | | 4.0 |
| Percent Blockage | | 5 | | | 3 | | | | 3 | | | 2 |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | | None | | | None |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | 304 | | | 638 |
| pX, platoon unblocked | 0.84 | 0.84 | 0.87 | 0.84 | 0.84 | 0.78 | 0.00 | 0.87 | | | 0.78 | |
| vC, conflicting volume | 1526 | 1509 | 587 | 1474 | 1504 | 880 | 0 | 568 | | | 875 | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1195 | 1174 | 456 | 1131 | 1168 | 701 | 0 | 434 | | | 694 | |
| tC, single (s) | *4.0 | 6.5 | *5.0 | *4.0 | *4.0 | *4.0 | 0.0 | 4.1 | | | 4.2 | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.4 | 3.5 | 4.0 | 3.3 | 0.0 | 2.2 | | | 2.3 | |
| p0 queue free % | 93 | 100 | 96 | 98 | 93 | 91 | 0 | 98 | | | 97 | |
| cM capacity (veh/h) | 276 | 142 | 560 | 326 | 321 | 497 | 0 | 920 | | | 663 | |

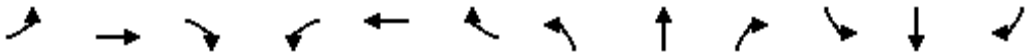
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 45 | 77 | 851 | 510 |
| Volume Left | 20 | 7 | 22 | 17 |
| Volume Right | 25 | 46 | 33 | 24 |
| cSH | 384 | 408 | 920 | 663 |
| Volume to Capacity | 0.12 | 0.19 | 0.02 | 0.03 |
| Queue Length 95th (ft) | 10 | 17 | 2 | 2 |
| Control Delay (s) | 15.6 | 15.9 | 0.6 | 0.7 |
| Lane LOS | C | C | A | A |
| Approach Delay (s) | 15.6 | 15.9 | 0.6 | 0.7 |
| Approach LOS | C | C | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.9 | | |
| Intersection Capacity Utilization | 76.3% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

* User Entered Value



| Movement | SBR |
|---|---|
| Lane Configurations | |
| Traffic Volume (veh/h) | 22 |
| Future Volume (Veh/h) | 22 |
| Sign Control | |
| Grade | |
| Peak Hour Factor | 0.93 |
| Hourly flow rate (vph) | 24 |
| Pedestrians | |
| Lane Width (ft) | |
| Walking Speed (ft/s) | |
| Percent Blockage | |
| Right turn flare (veh) | |
| Median type | |
| Median storage veh) | |
| Upstream signal (ft) | |
| pX, platoon unblocked | |
| vC, conflicting volume | |
| vC1, stage 1 conf vol | |
| vC2, stage 2 conf vol | |
| vCu, unblocked vol | |
| tC, single (s) | |
| tC, 2 stage (s) | |
| tF (s) | |
| p0 queue free % | |
| cM capacity (veh/h) | |
| Direction, Lane # | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 88 | 98 | 47 | 31 | 150 | 70 | 67 | 653 | 10 | 53 | 310 | 94 |
| Future Volume (vph) | 88 | 98 | 47 | 31 | 150 | 70 | 67 | 653 | 10 | 53 | 310 | 94 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 11 | 12 | 12 | 16 | 12 | 10 | 10 | 10 | 10 | 10 | 10 |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 0 | | 250 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 0 | | 1 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 0.95 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Ped Bike Factor | | 0.92 | | | 0.91 | | | 1.00 | | | 0.97 | |
| Frt | | 0.970 | | | 0.962 | | | 0.998 | | | 0.969 | |
| Flt Protected | | 0.981 | | | 0.994 | | | 0.995 | | | 0.994 | |
| Satd. Flow (prot) | 0 | 2509 | 0 | 0 | 1359 | 0 | 0 | 2824 | 0 | 0 | 2599 | 0 |
| Flt Permitted | | 0.582 | | | 0.929 | | | 0.781 | | | 0.679 | |
| Satd. Flow (perm) | 0 | 1429 | 0 | 0 | 1248 | 0 | 0 | 2210 | 0 | 0 | 1770 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 642 | | | 138 | | | 618 | | | 304 | |
| Travel Time (s) | | 14.6 | | | 3.1 | | | 14.0 | | | 6.9 | |
| Confl. Peds. (#/hr) | 104 | | 84 | 84 | | 104 | 117 | | 118 | 118 | | 117 |
| Confl. Bikes (#/hr) | | | | | | 3 | | | 9 | | | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.97 | 0.97 | 0.97 | 0.95 | 0.95 | 0.95 | 0.85 | 0.85 | 0.85 |
| Heavy Vehicles (%) | 16% | 7% | 0% | 6% | 10% | 25% | 3% | 1% | 0% | 2% | 3% | 10% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Adj. Flow (vph) | 98 | 109 | 52 | 32 | 155 | 72 | 71 | 687 | 11 | 62 | 365 | 111 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 259 | 0 | 0 | 259 | 0 | 0 | 769 | 0 | 0 | 538 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.27 | 1.14 | 1.14 | 1.12 | 1.14 | 1.25 | 1.33 | 1.25 | 1.25 | 1.33 | 1.25 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |

| Lane Group | Ø2 |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | |
| Future Volume (vph) | |
| Ideal Flow (vphpl) | |
| Lane Width (ft) | |
| Storage Length (ft) | |
| Storage Lanes | |
| Taper Length (ft) | |
| Lane Util. Factor | |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Right Turn on Red | |
| Satd. Flow (RTOR) | |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | |
| Heavy Vehicles (%) | |
| Parking (#/hr) | |
| Adj. Flow (vph) | |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | |
| Enter Blocked Intersection | |
| Lane Alignment | |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | |
| Turning Speed (mph) | |
| Number of Detectors | |
| Detector Template | |
| Leading Detector (ft) | |
| Trailing Detector (ft) | |
| Detector 1 Position(ft) | |
| Detector 1 Size(ft) | |
| Detector 1 Type | |
| Detector 1 Channel | |
| Detector 1 Extend (s) | |
| Detector 1 Queue (s) | |
| Detector 1 Delay (s) | |
| Detector 2 Position(ft) | |
| Detector 2 Size(ft) | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | D.P+P | NA | | Perm | NA | | D.P+P | NA | | Perm | NA | |
| Protected Phases | 3 | 3 4 | | | 4 | | 5 | 1 5 | | | 1 | |
| Permitted Phases | 4 | | | 4 | | | 1 | | | 1 | | |
| Detector Phase | 3 | 3 4 | | 4 | 4 | | 5 | 1 5 | | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | | | 10.0 | 10.0 | | 6.0 | | | 30.0 | 30.0 | |
| Minimum Split (s) | 10.0 | | | 14.0 | 14.0 | | 10.0 | | | 34.0 | 34.0 | |
| Total Split (s) | 11.0 | | | 34.0 | 34.0 | | 19.0 | | | 54.0 | 54.0 | |
| Total Split (%) | 7.7% | | | 23.9% | 23.9% | | 13.4% | | | 38.0% | 38.0% | |
| Maximum Green (s) | 6.0 | | | 30.0 | 30.0 | | 15.0 | | | 50.0 | 50.0 | |
| Yellow Time (s) | 3.0 | | | 3.0 | 3.0 | | 3.0 | | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | | | 1.0 | 1.0 | | 1.0 | | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | | | | | 0.0 | | | | | | 0.0 | |
| Total Lost Time (s) | | | | | 4.0 | | | | | | 4.0 | |
| Lead/Lag | Lead | | | Lag | Lag | | | | | Lead | Lead | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | | | 2.0 | 2.0 | | 2.0 | | | 2.0 | 2.0 | |
| Recall Mode | Max | | | Max | Max | | Max | | | Max | Max | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 35.0 | | | 30.0 | | | 65.0 | | | 50.0 | |
| Actuated g/C Ratio | | 0.25 | | | 0.21 | | | 0.46 | | | 0.35 | |
| v/c Ratio | | 0.65 | | | 0.98 | | | 0.71 | | | 0.86 | |
| Control Delay | | 53.0 | | | 107.0 | | | 32.6 | | | 58.2 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 53.0 | | | 107.0 | | | 32.6 | | | 58.2 | |
| LOS | | D | | | F | | | C | | | E | |
| Approach Delay | | 53.0 | | | 107.0 | | | 32.6 | | | 58.2 | |
| Approach LOS | | D | | | F | | | C | | | E | |

**Intersection Summary**

Area Type: CBD
Cycle Length: 142
Actuated Cycle Length: 142
Natural Cycle: 105
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 53.6 Intersection LOS: D
Intersection Capacity Utilization 89.9% ICU Level of Service E
Analysis Period (min) 15
Description: L Street is very wide and during peak hours vehicles form two lanes.

Splits and Phases: 7: L Street & E Broadway



| Lane Group | Ø2 |
|---|---|
| Detector 2 Type | |
| Detector 2 Channel | |
| Detector 2 Extend (s) | |
| Turn Type | |
| Protected Phases | 2 |
| Permitted Phases | |
| Detector Phase | |
| Switch Phase | |
| Minimum Initial (s) | 4.0 |
| Minimum Split (s) | 24.0 |
| Total Split (s) | 24.0 |
| Total Split (%) | 17% |
| Maximum Green (s) | 20.0 |
| Yellow Time (s) | 3.0 |
| All-Red Time (s) | 1.0 |
| Lost Time Adjust (s) | |
| Total Lost Time (s) | |
| Lead/Lag | Lag |
| Lead-Lag Optimize? | |
| Vehicle Extension (s) | 2.0 |
| Recall Mode | None |
| Walk Time (s) | 8.0 |
| Flash Dont Walk (s) | 12.0 |
| Pedestrian Calls (#/hr) | 121 |
| Act Effct Green (s) | |
| Actuated g/C Ratio | |
| v/c Ratio | |
| Control Delay | |
| Queue Delay | |
| Total Delay | |
| LOS | |
| Approach Delay | |
| Approach LOS | |

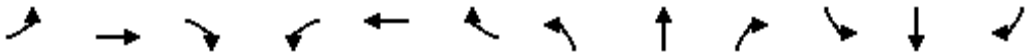
| Intersection Summary |
|---|

| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 259 | 259 | 769 | 538 |
| v/c Ratio | 0.65 | 0.98 | 0.71 | 0.86 |
| Control Delay | 53.0 | 107.0 | 32.6 | 58.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 53.0 | 107.0 | 32.6 | 58.2 |
| Queue Length 50th (ft) | 101 | 241 | 258 | 243 |
| Queue Length 95th (ft) | 144 | #424 | 322 | 301 |
| Internal Link Dist (ft) | 562 | 58 | 538 | 224 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 397 | 263 | 1076 | 623 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.65 | 0.98 | 0.71 | 0.86 |

Intersection Summary

Description: L Street is very wide and during peak hours vehicles form two lanes.

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

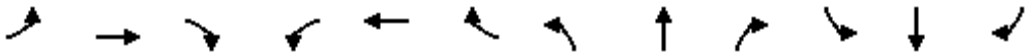


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 88 | 98 | 47 | 31 | 150 | 70 | 67 | 653 | 10 | 53 | 310 | 94 |
| Future Volume (vph) | 88 | 98 | 47 | 31 | 150 | 70 | 67 | 653 | 10 | 53 | 310 | 94 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 11 | 12 | 12 | 16 | 12 | 10 | 10 | 10 | 10 | 10 | 10 |
| Total Lost time (s) | | 5.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 0.95 | | | 1.00 | | | 0.95 | | | 0.95 | |
| Frpb, ped/bikes | | 0.96 | | | 0.93 | | | 1.00 | | | 0.98 | |
| Flpb, ped/bikes | | 0.98 | | | 0.98 | | | 1.00 | | | 1.00 | |
| Frt | | 0.97 | | | 0.96 | | | 1.00 | | | 0.97 | |
| Flt Protected | | 0.98 | | | 0.99 | | | 1.00 | | | 0.99 | |
| Satd. Flow (prot) | | 2454 | | | 1336 | | | 2818 | | | 2592 | |
| Flt Permitted | | 0.58 | | | 0.93 | | | 0.78 | | | 0.68 | |
| Satd. Flow (perm) | | 1456 | | | 1249 | | | 2211 | | | 1770 | |
| Peak-hour factor, PHF | 0.90 | 0.90 | 0.90 | 0.97 | 0.97 | 0.97 | 0.95 | 0.95 | 0.95 | 0.85 | 0.85 | 0.85 |
| Adj. Flow (vph) | 98 | 109 | 52 | 32 | 155 | 72 | 71 | 687 | 11 | 62 | 365 | 111 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 259 | 0 | 0 | 259 | 0 | 0 | 769 | 0 | 0 | 538 | 0 |
| Confl. Peds. (#/hr) | 104 | | 84 | 84 | | 104 | 117 | | 118 | 118 | | 117 |
| Confl. Bikes (#/hr) | | | | | | 3 | | | 9 | | | |
| Heavy Vehicles (%) | 16% | 7% | 0% | 6% | 10% | 25% | 3% | 1% | 0% | 2% | 3% | 10% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Turn Type | D.P+P | NA | | Perm | NA | | D.P+P | NA | | Perm | NA | |
| Protected Phases | 3 | 3 4 | | | 4 | | 5 | 1 5 | | | 1 | |
| Permitted Phases | 4 | | | 4 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 36.0 | | | 30.0 | | | 65.0 | | | 50.0 | |
| Effective Green, g (s) | | 36.0 | | | 30.0 | | | 65.0 | | | 50.0 | |
| Actuated g/C Ratio | | 0.25 | | | 0.21 | | | 0.46 | | | 0.35 | |
| Clearance Time (s) | | | | | 4.0 | | | | | | 4.0 | |
| Vehicle Extension (s) | | | | | 2.0 | | | | | | 2.0 | |
| Lane Grp Cap (vph) | | 411 | | | 263 | | | 1076 | | | 623 | |
| v/s Ratio Prot | | c0.03 | | | | | | c0.08 | | | | |
| v/s Ratio Perm | | 0.13 | | | c0.21 | | | 0.25 | | | c0.30 | |
| v/c Ratio | | 0.63 | | | 0.98 | | | 0.71 | | | 0.86 | |
| Uniform Delay, d1 | | 47.1 | | | 55.8 | | | 31.0 | | | 42.8 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 7.2 | | | 51.8 | | | 4.1 | | | 14.7 | |
| Delay (s) | | 54.2 | | | 107.5 | | | 35.1 | | | 57.6 | |
| Level of Service | | D | | | F | | | D | | | E | |
| Approach Delay (s) | | 54.2 | | | 107.5 | | | 35.1 | | | 57.6 | |
| Approach LOS | | D | | | F | | | D | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 54.7 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.72 | | |
| Actuated Cycle Length (s) | 142.0 | Sum of lost time (s) | 21.0 |
| Intersection Capacity Utilization | 89.9% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

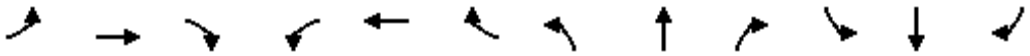
Description: L Street is very wide and during peak hours vehicles form two lanes.

c Critical Lane Group



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 26 | 118 | 0 | 0 | 225 | 5 | 124 | 10 | 26 | 5 | 0 | 57 |
| Future Volume (vph) | 26 | 118 | 0 | 0 | 225 | 5 | 124 | 10 | 26 | 5 | 0 | 57 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 13 | 12 | 10 | 10 | 12 | 12 | 16 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | | | 0.997 | | | 0.891 | | | 0.876 | |
| Flt Protected | | 0.991 | | | | | 0.950 | | | | 0.996 | |
| Satd. Flow (prot) | 0 | 1378 | 0 | 0 | 1547 | 0 | 1325 | 1242 | 0 | 0 | 1215 | 0 |
| Flt Permitted | | 0.991 | | | | | 0.950 | | | | 0.996 | |
| Satd. Flow (perm) | 0 | 1378 | 0 | 0 | 1547 | 0 | 1325 | 1242 | 0 | 0 | 1215 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 1822 | | | 540 | | | 382 | | | 350 | |
| Travel Time (s) | | 41.4 | | | 12.3 | | | 8.7 | | | 8.0 | |
| Confl. Peds. (#/hr) | 8 | | 18 | 18 | | 8 | 13 | | 28 | 28 | | 13 |
| Confl. Bikes (#/hr) | | | 1 | | | 3 | | | 1 | | | |
| Peak Hour Factor | 0.70 | 0.70 | 0.70 | 0.68 | 0.68 | 0.68 | 0.71 | 0.71 | 0.71 | 0.50 | 0.50 | 0.50 |
| Heavy Vehicles (%) | 9% | 11% | 2% | 0% | 2% | 25% | 3% | 11% | 0% | 17% | 0% | 26% |
| Parking (#/hr) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Adj. Flow (vph) | 37 | 169 | 0 | 0 | 331 | 7 | 175 | 14 | 37 | 10 | 0 | 114 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 206 | 0 | 0 | 338 | 0 | 175 | 51 | 0 | 0 | 124 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 10 | | | 10 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.30 | 1.14 | 1.14 | 1.25 | 1.14 | 1.42 | 1.42 | 1.14 | 1.14 | 1.12 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 48.5% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

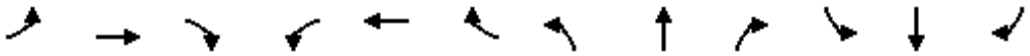


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 26 | 118 | 0 | 0 | 225 | 5 | 124 | 10 | 26 | 5 | 0 | 57 |
| Future Volume (Veh/h) | 26 | 118 | 0 | 0 | 225 | 5 | 124 | 10 | 26 | 5 | 0 | 57 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.70 | 0.70 | 0.70 | 0.68 | 0.68 | 0.68 | 0.71 | 0.71 | 0.71 | 0.50 | 0.50 | 0.50 |
| Hourly flow rate (vph) | 37 | 169 | 0 | 0 | 331 | 7 | 175 | 14 | 37 | 10 | 0 | 114 |
| Pedestrians | | 13 | | | 28 | | | 18 | | | 8 | |
| Lane Width (ft) | | 12.0 | | | 13.0 | | | 10.0 | | | 16.0 | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Percent Blockage | | 1 | | | 3 | | | 1 | | | 1 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 540 | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 346 | | | 187 | | | 722 | 607 | 215 | 658 | 604 | 356 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 346 | | | 187 | | | 722 | 607 | 215 | 658 | 604 | 356 |
| tC, single (s) | 4.2 | | | 4.1 | | | *6.5 | 6.6 | 6.2 | 7.3 | 6.5 | 6.5 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.3 | | | 2.2 | | | 3.5 | 4.1 | 3.3 | 3.7 | 4.0 | 3.5 |
| p0 queue free % | 97 | | | 100 | | | 41 | 96 | 95 | 97 | 100 | 82 |
| cM capacity (veh/h) | 1165 | | | 1382 | | | 296 | 378 | 799 | 308 | 394 | 625 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | SB 1 |
|---|---|---|---|---|---|
| Volume Total | 206 | 338 | 175 | 51 | 124 |
| Volume Left | 37 | 0 | 175 | 0 | 10 |
| Volume Right | 0 | 7 | 0 | 37 | 114 |
| cSH | 1165 | 1700 | 296 | 612 | 577 |
| Volume to Capacity | 0.03 | 0.20 | 0.59 | 0.08 | 0.21 |
| Queue Length 95th (ft) | 2 | 0 | 88 | 7 | 20 |
| Control Delay (s) | 1.7 | 0.0 | 33.3 | 11.4 | 12.9 |
| Lane LOS | A | | D | B | B |
| Approach Delay (s) | 1.7 | 0.0 | 28.3 | | 12.9 |
| Approach LOS | | | D | | B |

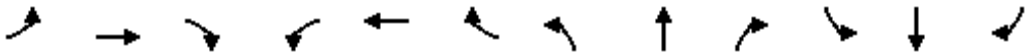
| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 9.4 | | | |
| Intersection Capacity Utilization | 48.5% | ICU Level of Service | | A |
| Analysis Period (min) | 15 | | | |

* User Entered Value



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 56 | 191 | 0 | 0 | 334 | 0 | 95 | 0 | 10 | 0 | 0 | 65 |
| Future Volume (vph) | 56 | 191 | 0 | 0 | 334 | 0 | 95 | 0 | 10 | 0 | 0 | 65 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 13 | 12 | 12 | 13 | 12 | 10 | 12 | 12 | 12 | 12 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | | | | | | 0.987 | | | 0.865 | |
| Flt Protected | | 0.990 | | | | | | 0.957 | | | | |
| Satd. Flow (prot) | 0 | 1564 | 0 | 0 | 1750 | 0 | 0 | 1586 | 0 | 0 | 1479 | 0 |
| Flt Permitted | | 0.990 | | | | | | 0.957 | | | | |
| Satd. Flow (perm) | 0 | 1564 | 0 | 0 | 1750 | 0 | 0 | 1586 | 0 | 0 | 1479 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 576 | | | 561 | | | 457 | | | 201 | |
| Travel Time (s) | | 13.1 | | | 12.8 | | | 10.4 | | | 4.6 | |
| Confl. Peds. (#/hr) | | | 13 | 13 | | | 4 | | | | | |
| Confl. Bikes (#/hr) | | | 1 | | | | | | 3 | | | |
| Peak Hour Factor | 0.92 | 0.84 | 0.84 | 0.77 | 0.77 | 0.92 | 0.70 | 0.92 | 0.70 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 0% | 15% | 0% | 0% | 1% | 0% | 2% | 0% | 0% | 0% | 0% | 0% |
| Adj. Flow (vph) | 61 | 227 | 0 | 0 | 434 | 0 | 136 | 0 | 14 | 0 | 0 | 71 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 288 | 0 | 0 | 434 | 0 | 0 | 150 | 0 | 0 | 71 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.10 | 1.14 | 1.14 | 1.10 | 1.14 | 1.25 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 57.3% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |



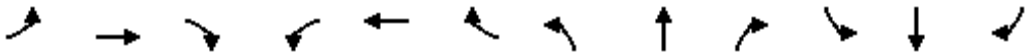
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 56 | 191 | 0 | 0 | 334 | 0 | 95 | 0 | 10 | 0 | 0 | 65 |
| Future Volume (Veh/h) | 56 | 191 | 0 | 0 | 334 | 0 | 95 | 0 | 10 | 0 | 0 | 65 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.92 | 0.84 | 0.84 | 0.77 | 0.77 | 0.92 | 0.70 | 0.92 | 0.70 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 61 | 227 | 0 | 0 | 434 | 0 | 136 | 0 | 14 | 0 | 0 | 71 |
| Pedestrians | | 4 | | | | | | 13 | | | | |
| Lane Width (ft) | | 13.0 | | | | | | 12.0 | | | | |
| Walking Speed (ft/s) | | 4.0 | | | | | | 4.0 | | | | |
| Percent Blockage | | 0 | | | | | | 1 | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 576 | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 434 | | | 240 | | | 871 | 796 | 240 | 797 | 796 | 438 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 434 | | | 240 | | | 871 | 796 | 240 | 797 | 796 | 438 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 95 | | | 100 | | | 40 | 100 | 98 | 100 | 100 | 89 |
| cM capacity (veh/h) | 1136 | | | 1324 | | | 225 | 302 | 795 | 287 | 302 | 621 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 288 | 434 | 150 | 71 |
| Volume Left | 61 | 0 | 136 | 0 |
| Volume Right | 0 | 0 | 14 | 71 |
| cSH | 1136 | 1700 | 241 | 621 |
| Volume to Capacity | 0.05 | 0.26 | 0.62 | 0.11 |
| Queue Length 95th (ft) | 4 | 0 | 93 | 10 |
| Control Delay (s) | 2.2 | 0.0 | 41.6 | 11.5 |
| Lane LOS | A | | E | B |
| Approach Delay (s) | 2.2 | 0.0 | 41.6 | 11.5 |
| Approach LOS | | | E | B |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 8.1 | | | |
| Intersection Capacity Utilization | 57.3% | ICU Level of Service | B | |
| Analysis Period (min) | 15 | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 29 | 204 | 0 | 0 | 402 | 217 | 78 | 57 | 11 | 126 | 0 | 71 |
| Future Volume (vph) | 29 | 204 | 0 | 0 | 402 | 217 | 78 | 57 | 11 | 126 | 0 | 71 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 15 | 12 | 12 | 16 | 12 | 12 | 16 | 12 | 12 | 14 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | | | 0.953 | | | 0.990 | | | 0.951 | |
| Flt Protected | | 0.994 | | | | | | 0.974 | | | 0.969 | |
| Satd. Flow (prot) | 0 | 1388 | 0 | 0 | 1755 | 0 | 0 | 1800 | 0 | 0 | 1439 | 0 |
| Flt Permitted | | 0.994 | | | | | | 0.974 | | | 0.969 | |
| Satd. Flow (perm) | 0 | 1388 | 0 | 0 | 1755 | 0 | 0 | 1800 | 0 | 0 | 1439 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 848 | | | 1822 | | | 402 | | | 2052 | |
| Travel Time (s) | | 19.3 | | | 41.4 | | | 9.1 | | | 46.6 | |
| Confl. Peds. (#/hr) | 4 | | | 5 | | 4 | 1 | | 24 | 24 | | 1 |
| Confl. Bikes (#/hr) | | | 2 | | | 6 | | | 9 | | | |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.70 | 0.70 | 0.70 | 0.74 | 0.74 | 0.74 | 0.88 | 0.88 | 0.88 |
| Heavy Vehicles (%) | 9% | 23% | 0% | 0% | 7% | 2% | 1% | 2% | 33% | 11% | 0% | 27% |
| Parking (#/hr) | | 0 | 0 | | | | | | | | | |
| Adj. Flow (vph) | 33 | 232 | 0 | 0 | 574 | 310 | 105 | 77 | 15 | 143 | 0 | 81 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 265 | 0 | 0 | 884 | 0 | 0 | 197 | 0 | 0 | 224 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.16 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 1.05 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |

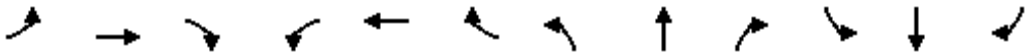
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 62.5% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 29 | 204 | 0 | 0 | 402 | 217 | 78 | 57 | 11 | 126 | 0 | 71 |
| Future Volume (Veh/h) | 29 | 204 | 0 | 0 | 402 | 217 | 78 | 57 | 11 | 126 | 0 | 71 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.70 | 0.70 | 0.70 | 0.74 | 0.74 | 0.74 | 0.88 | 0.88 | 0.88 |
| Hourly flow rate (vph) | 33 | 232 | 0 | 0 | 574 | 310 | 105 | 77 | 15 | 143 | 0 | 81 |
| Pedestrians | | 1 | | | 24 | | | 5 | | | 4 | |
| Lane Width (ft) | | 15.0 | | | 16.0 | | | 16.0 | | | 14.0 | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Percent Blockage | | 0 | | | 3 | | | 1 | | | 0 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 888 | | | 237 | | | 1114 | 1191 | 261 | 1108 | 1036 | 734 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 888 | | | 237 | | | 1114 | 1191 | 261 | 1108 | 1036 | 734 |
| tC, single (s) | 4.2 | | | 4.1 | | | 7.1 | 6.5 | 6.5 | 7.2 | 6.5 | 6.5 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.3 | | | 2.2 | | | 3.5 | 4.0 | 3.6 | 3.6 | 4.0 | 3.5 |
| p0 queue free % | 95 | | | 100 | | | 25 | 57 | 98 | 0 | 100 | 79 |
| cM capacity (veh/h) | 731 | | | 1334 | | | 140 | 177 | 685 | 108 | 221 | 380 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 265 | 884 | 197 | 224 |
| Volume Left | 33 | 0 | 105 | 143 |
| Volume Right | 0 | 310 | 15 | 81 |
| cSH | 731 | 1334 | 163 | 146 |
| Volume to Capacity | 0.05 | 0.00 | 1.21 | 1.53 |
| Queue Length 95th (ft) | 4 | 0 | 274 | 381 |
| Control Delay (s) | 1.7 | 0.0 | 193.3 | 327.3 |
| Lane LOS | A | | F | F |
| Approach Delay (s) | 1.7 | 0.0 | 193.3 | 327.3 |
| Approach LOS | | | F | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 71.2 | | |
| Intersection Capacity Utilization | 62.5% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 31 | 21 | 5 | 5 | 31 | 10 | 21 | 616 | 10 | 21 | 299 | 37 |
| Future Volume (vph) | 31 | 21 | 5 | 5 | 31 | 10 | 21 | 616 | 10 | 21 | 299 | 37 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | 0.95 | | | 0.97 | | | 1.00 | | | 0.99 | |
| Frt | | 0.988 | | | 0.972 | | | 0.998 | | | 0.986 | |
| Flt Protected | | 0.973 | | | 0.994 | | | 0.998 | | | 0.997 | |
| Satd. Flow (prot) | 0 | 1109 | 0 | 0 | 1353 | 0 | 0 | 1410 | 0 | 0 | 1344 | 0 |
| Flt Permitted | | 0.824 | | | 0.973 | | | 0.981 | | | 0.949 | |
| Satd. Flow (perm) | 0 | 894 | 0 | 0 | 1320 | 0 | 0 | 1384 | 0 | 0 | 1278 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 4 | | | 11 | | | 1 | | | 8 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 659 | | | 649 | | | 380 | | | 618 | |
| Travel Time (s) | | 15.0 | | | 14.8 | | | 8.6 | | | 14.0 | |
| Confl. Peds. (#/hr) | 28 | | 11 | 11 | | 28 | 108 | | 63 | 63 | | 108 |
| Confl. Bikes (#/hr) | | | | | | | | | 5 | | | |
| Peak Hour Factor | 0.74 | 0.74 | 0.74 | 0.87 | 0.87 | 0.87 | 0.97 | 0.97 | 0.97 | 0.87 | 0.87 | 0.87 |
| Heavy Vehicles (%) | 31% | 18% | 4% | 0% | 0% | 0% | 6% | 1% | 11% | 0% | 4% | 3% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Adj. Flow (vph) | 42 | 28 | 7 | 6 | 36 | 11 | 22 | 635 | 10 | 24 | 344 | 43 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 77 | 0 | 0 | 53 | 0 | 0 | 667 | 0 | 0 | 411 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |

| Lane Group | Ø2 |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | |
| Future Volume (vph) | |
| Ideal Flow (vphpl) | |
| Lane Width (ft) | |
| Lane Util. Factor | |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Right Turn on Red | |
| Satd. Flow (RTOR) | |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | |
| Heavy Vehicles (%) | |
| Parking (#/hr) | |
| Adj. Flow (vph) | |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | |
| Enter Blocked Intersection | |
| Lane Alignment | |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | |
| Turning Speed (mph) | |
| Number of Detectors | |
| Detector Template | |
| Leading Detector (ft) | |
| Trailing Detector (ft) | |
| Detector 1 Position(ft) | |
| Detector 1 Size(ft) | |
| Detector 1 Type | |
| Detector 1 Channel | |
| Detector 1 Extend (s) | |
| Detector 1 Queue (s) | |
| Detector 1 Delay (s) | |
| Detector 2 Position(ft) | |
| Detector 2 Size(ft) | |
| Detector 2 Type | |
| Detector 2 Channel | |
| Detector 2 Extend (s) | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Detector Phase | 5 | 5 | | 5 | 5 | | 1 | 1 | | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | |
| Minimum Split (s) | 12.0 | 12.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Total Split (s) | 18.0 | 18.0 | | 18.0 | 18.0 | | 54.0 | 54.0 | | 54.0 | 54.0 | |
| Total Split (%) | 17.6% | 17.6% | | 17.6% | 17.6% | | 52.9% | 52.9% | | 52.9% | 52.9% | |
| Maximum Green (s) | 14.0 | 14.0 | | 14.0 | 14.0 | | 50.0 | 50.0 | | 50.0 | 50.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Lost Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lead/Lag | | | | | | | Lead | Lead | | Lead | Lead | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | Max | Max | | Max | Max | | Max | Max | | Max | Max | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 14.3 | | | 14.3 | | | 51.0 | | | 51.0 | |
| Actuated g/C Ratio | | 0.15 | | | 0.15 | | | 0.53 | | | 0.53 | |
| v/c Ratio | | 0.57 | | | 0.26 | | | 0.91 | | | 0.60 | |
| Control Delay | | 57.4 | | | 36.5 | | | 42.3 | | | 22.6 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 57.4 | | | 36.5 | | | 42.3 | | | 22.6 | |
| LOS | | E | | | D | | | D | | | C | |
| Approach Delay | | 57.4 | | | 36.5 | | | 42.3 | | | 22.6 | |
| Approach LOS | | E | | | D | | | D | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 102 | | | |
| Actuated Cycle Length: 96 | | | |
| Natural Cycle: 90 | | | |
| Control Type: Semi Act-Uncoord | | | |
| Maximum v/c Ratio: 0.91 | | | |
| Intersection Signal Delay: 36.3 | | Intersection LOS: D | |
| Intersection Capacity Utilization 60.7% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 11: L Street & E 5th Street



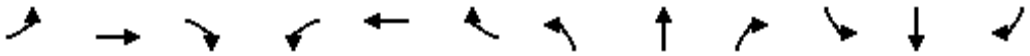
| Lane Group | Ø2 |
|---|---|
| Turn Type | |
| Protected Phases | 2 |
| Permitted Phases | |
| Detector Phase | |
| Switch Phase | |
| Minimum Initial (s) | 4.0 |
| Minimum Split (s) | 30.0 |
| Total Split (s) | 30.0 |
| Total Split (%) | 29% |
| Maximum Green (s) | 26.0 |
| Yellow Time (s) | 3.0 |
| All-Red Time (s) | 1.0 |
| Lost Time Adjust (s) | |
| Total Lost Time (s) | |
| Lead/Lag | Lag |
| Lead-Lag Optimize? | |
| Vehicle Extension (s) | 2.0 |
| Recall Mode | None |
| Walk Time (s) | 14.0 |
| Flash Dont Walk (s) | 12.0 |
| Pedestrian Calls (#/hr) | 53 |
| Act Effct Green (s) | |
| Actuated g/C Ratio | |
| v/c Ratio | |
| Control Delay | |
| Queue Delay | |
| Total Delay | |
| LOS | |
| Approach Delay | |
| Approach LOS | |

| Intersection Summary |
|---|

| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 77 | 53 | 667 | 411 |
| v/c Ratio | 0.57 | 0.26 | 0.91 | 0.60 |
| Control Delay | 57.4 | 36.5 | 42.3 | 22.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 57.4 | 36.5 | 42.3 | 22.6 |
| Queue Length 50th (ft) | 45 | 25 | 411 | 189 |
| Queue Length 95th (ft) | 77 | 60 | #668 | 284 |
| Internal Link Dist (ft) | 579 | 569 | 300 | 538 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 136 | 205 | 735 | 682 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.57 | 0.26 | 0.91 | 0.60 |

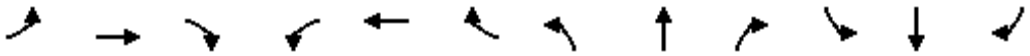
Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 31 | 21 | 5 | 5 | 31 | 10 | 21 | 616 | 10 | 21 | 299 | 37 |
| Future Volume (vph) | 31 | 21 | 5 | 5 | 31 | 10 | 21 | 616 | 10 | 21 | 299 | 37 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Total Lost time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Frpb, ped/bikes | | 0.99 | | | 0.98 | | | 1.00 | | | 0.99 | |
| Flpb, ped/bikes | | 0.95 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Frt | | 0.99 | | | 0.97 | | | 1.00 | | | 0.99 | |
| Flt Protected | | 0.97 | | | 0.99 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | | 1059 | | | 1351 | | | 1408 | | | 1343 | |
| Flt Permitted | | 0.82 | | | 0.97 | | | 0.98 | | | 0.95 | |
| Satd. Flow (perm) | | 896 | | | 1322 | | | 1384 | | | 1279 | |
| Peak-hour factor, PHF | 0.74 | 0.74 | 0.74 | 0.87 | 0.87 | 0.87 | 0.97 | 0.97 | 0.97 | 0.87 | 0.87 | 0.87 |
| Adj. Flow (vph) | 42 | 28 | 7 | 6 | 36 | 11 | 22 | 635 | 10 | 24 | 344 | 43 |
| RTOR Reduction (vph) | 0 | 3 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 4 | 0 |
| Lane Group Flow (vph) | 0 | 74 | 0 | 0 | 44 | 0 | 0 | 667 | 0 | 0 | 407 | 0 |
| Confl. Peds. (#/hr) | 28 | | 11 | 11 | | 28 | 108 | | 63 | 63 | | 108 |
| Confl. Bikes (#/hr) | | | | | | | | | 5 | | | |
| Heavy Vehicles (%) | 31% | 18% | 4% | 0% | 0% | 0% | 6% | 1% | 11% | 0% | 4% | 3% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 14.3 | | | 14.3 | | | 51.0 | | | 51.0 | |
| Effective Green, g (s) | | 14.3 | | | 14.3 | | | 51.0 | | | 51.0 | |
| Actuated g/C Ratio | | 0.15 | | | 0.15 | | | 0.53 | | | 0.53 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | | | 2.0 | | | 2.0 | |
| Lane Grp Cap (vph) | | 132 | | | 195 | | | 728 | | | 673 | |
| v/s Ratio Prot | | | | | | | | | | | | |
| v/s Ratio Perm | | c0.08 | | | 0.03 | | | c0.48 | | | 0.32 | |
| v/c Ratio | | 0.56 | | | 0.22 | | | 0.92 | | | 0.61 | |
| Uniform Delay, d1 | | 38.4 | | | 36.4 | | | 21.0 | | | 16.0 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 15.9 | | | 2.6 | | | 18.1 | | | 4.0 | |
| Delay (s) | | 54.3 | | | 39.0 | | | 39.1 | | | 20.0 | |
| Level of Service | | D | | | D | | | D | | | B | |
| Approach Delay (s) | | 54.3 | | | 39.0 | | | 39.1 | | | 20.0 | |
| Approach LOS | | D | | | D | | | D | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 33.6 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.64 | | |
| Actuated Cycle Length (s) | 96.9 | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 60.7% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 26 | 16 | 5 | 5 | 26 | 10 | 16 | 559 | 5 | 10 | 236 | 16 |
| Future Volume (vph) | 26 | 16 | 5 | 5 | 26 | 10 | 16 | 559 | 5 | 10 | 236 | 16 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 16 | 12 | 12 | 15 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | 0.98 | | | 0.99 | | | 1.00 | | | 0.99 | |
| Frt | | 0.986 | | | 0.966 | | | 0.999 | | | 0.992 | |
| Flt Protected | | 0.973 | | | 0.994 | | | 0.999 | | | 0.998 | |
| Satd. Flow (prot) | 0 | 1485 | 0 | 0 | 1328 | 0 | 0 | 1577 | 0 | 0 | 1504 | 0 |
| Flt Permitted | | 0.854 | | | 0.977 | | | 0.990 | | | 0.979 | |
| Satd. Flow (perm) | 0 | 1287 | 0 | 0 | 1305 | 0 | 0 | 1561 | 0 | 0 | 1475 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 6 | | | 17 | | | 1 | | | 8 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 602 | | | 677 | | | 676 | | | 535 | |
| Travel Time (s) | | 13.7 | | | 15.4 | | | 15.4 | | | 12.2 | |
| Confl. Peds. (#/hr) | 11 | | 3 | 3 | | 11 | 32 | | 19 | 19 | | 32 |
| Confl. Bikes (#/hr) | | | | | | 2 | | | 1 | | | |
| Peak Hour Factor | 0.78 | 0.78 | 0.78 | 0.60 | 0.60 | 0.60 | 0.94 | 0.94 | 0.94 | 0.89 | 0.89 | 0.89 |
| Heavy Vehicles (%) | 4% | 29% | 0% | 0% | 33% | 0% | 0% | 1% | 0% | 9% | 4% | 8% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | | | | | |
| Adj. Flow (vph) | 33 | 21 | 6 | 8 | 43 | 17 | 17 | 595 | 5 | 11 | 265 | 18 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 60 | 0 | 0 | 68 | 0 | 0 | 617 | 0 | 0 | 294 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.12 | 1.14 | 1.14 | 1.16 | 1.14 | 1.14 | 1.25 | 1.14 | 1.14 | 1.25 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Detector Phase | 5 | 5 | | 5 | 5 | | 1 | 1 | | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 6.0 | 6.0 | | 6.0 | 6.0 | | 20.0 | 20.0 | | 20.0 | 20.0 | |
| Minimum Split (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 24.0 | 24.0 | | 24.0 | 24.0 | |
| Total Split (s) | 24.0 | 24.0 | | 24.0 | 24.0 | | 54.0 | 54.0 | | 54.0 | 54.0 | |
| Total Split (%) | 30.8% | 30.8% | | 30.8% | 30.8% | | 69.2% | 69.2% | | 69.2% | 69.2% | |
| Maximum Green (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 50.0 | 50.0 | | 50.0 | 50.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Lost Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | Max | Max | | Max | Max | | Max | Max | | Max | Max | |
| Walk Time (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | |
| Flash Dont Walk (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | |
| Pedestrian Calls (#/hr) | 4 | 4 | | 4 | 4 | | 13 | 13 | | 13 | 13 | |
| Act Effct Green (s) | | 20.0 | | | 20.0 | | | 50.0 | | | 50.0 | |
| Actuated g/C Ratio | | 0.26 | | | 0.26 | | | 0.64 | | | 0.64 | |
| v/c Ratio | | 0.18 | | | 0.20 | | | 0.62 | | | 0.31 | |
| Control Delay | | 22.5 | | | 19.9 | | | 11.7 | | | 7.1 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 22.5 | | | 19.9 | | | 11.7 | | | 7.1 | |
| LOS | | C | | | B | | | B | | | A | |
| Approach Delay | | 22.5 | | | 19.9 | | | 11.7 | | | 7.1 | |
| Approach LOS | | C | | | B | | | B | | | A | |

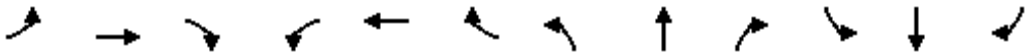
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 78 | | | |
| Actuated Cycle Length: 78 | | | |
| Natural Cycle: 55 | | | |
| Control Type: Semi Act-Uncoord | | | |
| Maximum v/c Ratio: 0.62 | | | |
| Intersection Signal Delay: 11.5 | | Intersection LOS: B | |
| Intersection Capacity Utilization 59.8% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 12: L Street & E 8th Street



| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 60 | 68 | 617 | 294 |
| v/c Ratio | 0.18 | 0.20 | 0.62 | 0.31 |
| Control Delay | 22.5 | 19.9 | 11.7 | 7.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 22.5 | 19.9 | 11.7 | 7.1 |
| Queue Length 50th (ft) | 20 | 19 | 156 | 54 |
| Queue Length 95th (ft) | 43 | 30 | 255 | 92 |
| Internal Link Dist (ft) | 522 | 597 | 596 | 455 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 334 | 347 | 1001 | 948 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.18 | 0.20 | 0.62 | 0.31 |

Intersection Summary

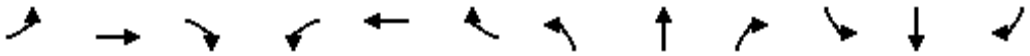


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 26 | 16 | 5 | 5 | 26 | 10 | 16 | 559 | 5 | 10 | 236 | 16 |
| Future Volume (vph) | 26 | 16 | 5 | 5 | 26 | 10 | 16 | 559 | 5 | 10 | 236 | 16 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 16 | 12 | 12 | 15 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Total Lost time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Frpb, ped/bikes | | 1.00 | | | 0.99 | | | 1.00 | | | 0.99 | |
| Flpb, ped/bikes | | 0.99 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Frt | | 0.99 | | | 0.97 | | | 1.00 | | | 0.99 | |
| Flt Protected | | 0.97 | | | 0.99 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | | 1467 | | | 1328 | | | 1574 | | | 1503 | |
| Flt Permitted | | 0.85 | | | 0.98 | | | 0.99 | | | 0.98 | |
| Satd. Flow (perm) | | 1287 | | | 1305 | | | 1560 | | | 1474 | |
| Peak-hour factor, PHF | 0.78 | 0.78 | 0.78 | 0.60 | 0.60 | 0.60 | 0.94 | 0.94 | 0.94 | 0.89 | 0.89 | 0.89 |
| Adj. Flow (vph) | 33 | 21 | 6 | 8 | 43 | 17 | 17 | 595 | 5 | 11 | 265 | 18 |
| RTOR Reduction (vph) | 0 | 4 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 3 | 0 |
| Lane Group Flow (vph) | 0 | 56 | 0 | 0 | 55 | 0 | 0 | 617 | 0 | 0 | 291 | 0 |
| Confl. Peds. (#/hr) | 11 | | 3 | 3 | | 11 | 32 | | 19 | 19 | | 32 |
| Confl. Bikes (#/hr) | | | | | | 2 | | | 1 | | | |
| Heavy Vehicles (%) | 4% | 29% | 0% | 0% | 33% | 0% | 0% | 1% | 0% | 9% | 4% | 8% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 20.0 | | | 20.0 | | | 50.0 | | | 50.0 | |
| Effective Green, g (s) | | 20.0 | | | 20.0 | | | 50.0 | | | 50.0 | |
| Actuated g/C Ratio | | 0.26 | | | 0.26 | | | 0.64 | | | 0.64 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | | | 2.0 | | | 2.0 | |
| Lane Grp Cap (vph) | | 330 | | | 334 | | | 1000 | | | 944 | |
| v/s Ratio Prot | | | | | | | | | | | | |
| v/s Ratio Perm | | c0.04 | | | 0.04 | | | c0.40 | | | 0.20 | |
| v/c Ratio | | 0.17 | | | 0.17 | | | 0.62 | | | 0.31 | |
| Uniform Delay, d1 | | 22.5 | | | 22.5 | | | 8.3 | | | 6.3 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 1.1 | | | 1.1 | | | 2.8 | | | 0.8 | |
| Delay (s) | | 23.6 | | | 23.6 | | | 11.2 | | | 7.1 | |
| Level of Service | | C | | | C | | | B | | | A | |
| Approach Delay (s) | | 23.6 | | | 23.6 | | | 11.2 | | | 7.1 | |
| Approach LOS | | C | | | C | | | B | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 11.5 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.49 | | |
| Actuated Cycle Length (s) | 78.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 59.8% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 5 | 5 | 5 | 16 | 5 | 26 | 512 | 5 | 0 | 190 | 16 |
| Future Volume (vph) | 0 | 5 | 5 | 5 | 16 | 5 | 26 | 512 | 5 | 0 | 190 | 16 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | 0.932 | | | 0.975 | | | 0.999 | | | 0.990 | |
| Flt Protected | | | | | 0.991 | | | 0.998 | | | | |
| Satd. Flow (prot) | 0 | 1771 | 0 | 0 | 1836 | 0 | 0 | 1894 | 0 | 0 | 1881 | 0 |
| Flt Permitted | | | | | 0.991 | | | 0.998 | | | | |
| Satd. Flow (perm) | 0 | 1771 | 0 | 0 | 1836 | 0 | 0 | 1894 | 0 | 0 | 1881 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 487 | | | 392 | | | 93 | | | 676 | |
| Travel Time (s) | | 11.1 | | | 8.9 | | | 2.1 | | | 15.4 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 0 | 5 | 5 | 5 | 17 | 5 | 28 | 557 | 5 | 0 | 207 | 17 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 10 | 0 | 0 | 27 | 0 | 0 | 590 | 0 | 0 | 224 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |

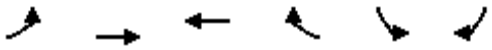
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 55.2% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |



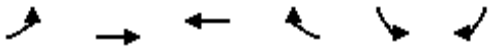
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 5 | 5 | 5 | 16 | 5 | 26 | 512 | 5 | 0 | 190 | 16 |
| Future Volume (Veh/h) | 0 | 5 | 5 | 5 | 16 | 5 | 26 | 512 | 5 | 0 | 190 | 16 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 0 | 5 | 5 | 5 | 17 | 5 | 28 | 557 | 5 | 0 | 207 | 17 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | 676 | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 844 | 834 | 216 | 838 | 840 | 560 | 224 | | | 562 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 844 | 834 | 216 | 838 | 840 | 560 | 224 | | | 562 | | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 100 | 98 | 99 | 98 | 94 | 99 | 98 | | | 100 | | |
| cM capacity (veh/h) | 266 | 300 | 829 | 278 | 298 | 532 | 1357 | | | 1019 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 10 | 27 | 590 | 224 |
| Volume Left | 0 | 5 | 28 | 0 |
| Volume Right | 5 | 5 | 5 | 17 |
| cSH | 441 | 320 | 1357 | 1019 |
| Volume to Capacity | 0.02 | 0.08 | 0.02 | 0.00 |
| Queue Length 95th (ft) | 2 | 7 | 2 | 0 |
| Control Delay (s) | 13.4 | 17.3 | 0.6 | 0.0 |
| Lane LOS | B | C | A | |
| Approach Delay (s) | 13.4 | 17.3 | 0.6 | 0.0 |
| Approach LOS | B | C | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 1.1 | | | |
| Intersection Capacity Utilization | 55.2% | ICU Level of Service | B | |
| Analysis Period (min) | 15 | | | |



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR | Ø2 |
|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | |
| Traffic Volume (vph) | 536 | 347 | 295 | 7 | 0 | 0 | |
| Future Volume (vph) | 536 | 347 | 295 | 7 | 0 | 0 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Lane Util. Factor | 0.95 | 0.95 | 0.95 | 0.95 | 1.00 | 1.00 | |
| Frt | | | 0.996 | | | | |
| Flt Protected | | 0.971 | | | | | |
| Satd. Flow (prot) | 0 | 3505 | 3596 | 0 | 0 | 0 | |
| Flt Permitted | | 0.618 | | | | | |
| Satd. Flow (perm) | 0 | 2231 | 3596 | 0 | 0 | 0 | |
| Right Turn on Red | | | | Yes | | Yes | |
| Satd. Flow (RTOR) | | | 5 | | | | |
| Link Speed (mph) | | 30 | 30 | | 30 | | |
| Link Distance (ft) | | 289 | 295 | | 140 | | |
| Travel Time (s) | | 6.6 | 6.7 | | 3.2 | | |
| Peak Hour Factor | 0.85 | 0.85 | 0.73 | 0.73 | 0.92 | 0.92 | |
| Adj. Flow (vph) | 631 | 408 | 404 | 10 | 0 | 0 | |
| Shared Lane Traffic (%) | | | | | | | |
| Lane Group Flow (vph) | 0 | 1039 | 414 | 0 | 0 | 0 | |
| Enter Blocked Intersection | No | No | No | No | No | No | |
| Lane Alignment | Left | Left | Left | Right | Left | Right | |
| Median Width(ft) | | 0 | 0 | | 0 | | |
| Link Offset(ft) | | 0 | 0 | | 0 | | |
| Crosswalk Width(ft) | | 16 | 16 | | 16 | | |
| Two way Left Turn Lane | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Turning Speed (mph) | 15 | | | 9 | 15 | 9 | |
| Number of Detectors | 1 | 2 | 2 | | | | |
| Detector Template | Left | Thru | Thru | | | | |
| Leading Detector (ft) | 20 | 100 | 100 | | | | |
| Trailing Detector (ft) | 0 | 0 | 0 | | | | |
| Detector 1 Position(ft) | 0 | 0 | 0 | | | | |
| Detector 1 Size(ft) | 20 | 6 | 6 | | | | |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | | | | |
| Detector 1 Channel | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | | | | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | | | | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | | | | |
| Detector 2 Position(ft) | | 94 | 94 | | | | |
| Detector 2 Size(ft) | | 6 | 6 | | | | |
| Detector 2 Type | | Cl+Ex | Cl+Ex | | | | |
| Detector 2 Channel | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | 0.0 | | | | |
| Turn Type | Perm | NA | NA | | | | |
| Protected Phases | | 1 | 1 | | | | 2 |
| Permitted Phases | 1 | | | | | | |
| Detector Phase | 1 | 1 | 1 | | | | |
| Switch Phase | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | 8.0 | | | | 10.0 |



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR | Ø2 |
|---|---|---|---|---|---|---|---|
| Minimum Split (s) | 22.0 | 22.0 | 22.0 | | | | 25.0 |
| Total Split (s) | 70.0 | 70.0 | 70.0 | | | | 25.0 |
| Total Split (%) | 73.7% | 73.7% | 73.7% | | | | 26% |
| Maximum Green (s) | 62.6 | 62.6 | 62.6 | | | | 20.5 |
| Yellow Time (s) | 5.4 | 5.4 | 5.4 | | | | 3.5 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | | | 1.0 |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | | | |
| Total Lost Time (s) | | 7.4 | 7.4 | | | | |
| Lead/Lag | Lead | Lead | Lead | | | | Lag |
| Lead-Lag Optimize? | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | | | | 2.0 |
| Recall Mode | Max | Max | Max | | | | None |
| Walk Time (s) | | | | | | | 18.0 |
| Flash Dont Walk (s) | | | | | | | 1.0 |
| Pedestrian Calls (#/hr) | | | | | | | 24 |
| Act Effct Green (s) | | 83.6 | 83.6 | | | | |
| Actuated g/C Ratio | | 0.89 | 0.89 | | | | |
| v/c Ratio | | 0.53 | 0.13 | | | | |
| Control Delay | | 5.5 | 2.7 | | | | |
| Queue Delay | | 0.0 | 0.0 | | | | |
| Total Delay | | 5.5 | 2.7 | | | | |
| LOS | | A | A | | | | |
| Approach Delay | | 5.5 | 2.7 | | | | |
| Approach LOS | | A | A | | | | |

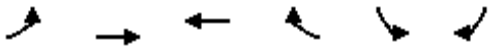
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 95 | | | |
| Actuated Cycle Length: 94.4 | | | |
| Natural Cycle: 65 | | | |
| Control Type: Semi Act-Uncoord | | | |
| Maximum v/c Ratio: 0.53 | | | |
| Intersection Signal Delay: 4.7 | | Intersection LOS: A | |
| Intersection Capacity Utilization 50.4% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 14: Day Blvd Ped



| Lane Group | EBT | WBT |
|---|---|---|
| Lane Group Flow (vph) | 1039 | 414 |
| v/c Ratio | 0.53 | 0.13 |
| Control Delay | 5.5 | 2.7 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 5.5 | 2.7 |
| Queue Length 50th (ft) | 0 | 0 |
| Queue Length 95th (ft) | 213 | 45 |
| Internal Link Dist (ft) | 209 | 215 |
| Turn Bay Length (ft) | | |
| Base Capacity (vph) | 1977 | 3187 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.53 | 0.13 |

Intersection Summary



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 536 | 347 | 295 | 7 | 0 | 0 |
| Future Volume (vph) | 536 | 347 | 295 | 7 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 7.4 | 7.4 | | | |
| Lane Util. Factor | | 0.95 | 0.95 | | | |
| Frt | | 1.00 | 1.00 | | | |
| Flt Protected | | 0.97 | 1.00 | | | |
| Satd. Flow (prot) | | 3504 | 3597 | | | |
| Flt Permitted | | 0.62 | 1.00 | | | |
| Satd. Flow (perm) | | 2232 | 3597 | | | |
| Peak-hour factor, PHF | 0.85 | 0.85 | 0.73 | 0.73 | 0.92 | 0.92 |
| Adj. Flow (vph) | 631 | 408 | 404 | 10 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 1 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 1039 | 413 | 0 | 0 | 0 |
| Turn Type | Perm | NA | NA | | | |
| Protected Phases | | 1 | 1 | | | |
| Permitted Phases | 1 | | | | | |
| Actuated Green, G (s) | | 78.7 | 78.7 | | | |
| Effective Green, g (s) | | 78.7 | 78.7 | | | |
| Actuated g/C Ratio | | 0.81 | 0.81 | | | |
| Clearance Time (s) | | 7.4 | 7.4 | | | |
| Vehicle Extension (s) | | 2.0 | 2.0 | | | |
| Lane Grp Cap (vph) | | 1807 | 2912 | | | |
| v/s Ratio Prot | | | 0.11 | | | |
| v/s Ratio Perm | | c0.47 | | | | |
| v/c Ratio | | 0.57 | 0.14 | | | |
| Uniform Delay, d1 | | 3.3 | 2.0 | | | |
| Progression Factor | | 1.00 | 1.00 | | | |
| Incremental Delay, d2 | | 1.3 | 0.1 | | | |
| Delay (s) | | 4.6 | 2.1 | | | |
| Level of Service | | A | A | | | |
| Approach Delay (s) | | 4.6 | 2.1 | | 0.0 | |
| Approach LOS | | A | A | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 3.9 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.53 | | |
| Actuated Cycle Length (s) | 97.2 | Sum of lost time (s) | 11.9 |
| Intersection Capacity Utilization | 50.4% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

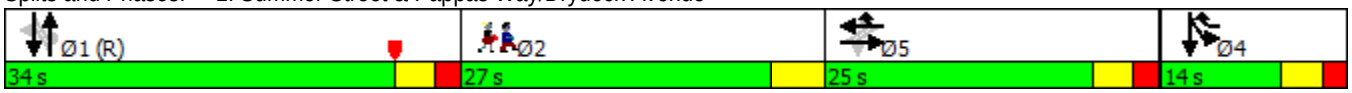
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 67 | 39 | 16 | 272 | 122 | 321 | 10 | 715 | 141 | 91 | 1027 | 228 |
| Future Volume (vph) | 67 | 39 | 16 | 272 | 122 | 321 | 10 | 715 | 141 | 91 | 1027 | 228 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 14 | 12 | 12 | 13 | 16 | 10 | 11 | 12 | 13 | 12 | 12 |
| Storage Length (ft) | 0 | | 0 | 350 | | 0 | 70 | | 0 | 350 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor | | 0.99 | | | 0.98 | | 0.98 | 0.99 | | 0.99 | 0.96 | |
| Frt | | 0.982 | | | | 0.850 | | 0.975 | | | 0.973 | |
| Flt Protected | | 0.973 | | | 0.967 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1642 | 0 | 0 | 1703 | 1569 | 1516 | 2954 | 0 | 1569 | 2955 | 0 |
| Flt Permitted | | 0.358 | | | 0.710 | | 0.146 | | | 0.146 | | |
| Satd. Flow (perm) | 0 | 601 | 0 | 0 | 1221 | 1569 | 229 | 2954 | 0 | 240 | 2955 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 7 | | | | 353 | | 23 | | | 33 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 745 | | | 950 | | | 1510 | | | 501 | |
| Travel Time (s) | | 16.9 | | | 21.6 | | | 34.3 | | | 11.4 | |
| Confl. Peds. (#/hr) | 21 | | 33 | 33 | | 21 | 138 | | 34 | 34 | | 138 |
| Confl. Bikes (#/hr) | | | 1 | | | 1 | | | 2 | | | 25 |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.91 | 0.91 | 0.91 | 0.90 | 0.90 | 0.90 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 6% | 3% | 8% | 0% | 1% | 5% | 0% | 3% | 2% | 7% | 3% | 4% |
| Adj. Flow (vph) | 79 | 46 | 19 | 299 | 134 | 353 | 11 | 794 | 157 | 98 | 1104 | 245 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 144 | 0 | 0 | 433 | 353 | 11 | 951 | 0 | 98 | 1349 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 6 | | | 13 | | | 17 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.05 | 1.14 | 1.14 | 1.10 | 0.97 | 1.25 | 1.19 | 1.14 | 1.10 | 1.14 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | 20 | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | 20 | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |

| Lane Group | Ø2 |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | |
| Future Volume (vph) | |
| Ideal Flow (vphpl) | |
| Lane Width (ft) | |
| Storage Length (ft) | |
| Storage Lanes | |
| Taper Length (ft) | |
| Lane Util. Factor | |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Right Turn on Red | |
| Satd. Flow (RTOR) | |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | |
| Heavy Vehicles (%) | |
| Adj. Flow (vph) | |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | |
| Enter Blocked Intersection | |
| Lane Alignment | |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | |
| Turning Speed (mph) | |
| Number of Detectors | |
| Detector Template | |
| Leading Detector (ft) | |
| Trailing Detector (ft) | |
| Detector 1 Position(ft) | |
| Detector 1 Size(ft) | |
| Detector 1 Type | |
| Detector 1 Channel | |
| Detector 1 Extend (s) | |
| Detector 1 Queue (s) | |
| Detector 1 Delay (s) | |
| Detector 2 Position(ft) | |
| Detector 2 Size(ft) | |
| Detector 2 Type | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | pt+ov | Perm | NA | | D.P+P | NA | |
| Protected Phases | | 5 | | | 5 | 5 4 | | 1 | | 4 | 1 4 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Detector Phase | 5 | 5 | | 5 | 5 | 5 4 | 1 | 1 | | 4 | 1 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | | |
| Minimum Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | | 13.0 | 13.0 | | 13.0 | | |
| Total Split (s) | 25.0 | 25.0 | | 25.0 | 25.0 | | 34.0 | 34.0 | | 14.0 | | |
| Total Split (%) | 25.0% | 25.0% | | 25.0% | 25.0% | | 34.0% | 34.0% | | 14.0% | | |
| Maximum Green (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 29.0 | 29.0 | | 9.0 | | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | 0.0 | 0.0 | | 0.0 | | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | 5.0 | 5.0 | | 5.0 | | |
| Lead/Lag | | | | | | | Lead | Lead | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | | |
| Recall Mode | None | None | | None | None | | C-Max | C-Max | | None | | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 30.8 | | | 30.8 | 44.8 | 29.0 | 29.0 | | 38.0 | 43.0 | |
| Actuated g/C Ratio | | 0.31 | | | 0.31 | 0.45 | 0.29 | 0.29 | | 0.38 | 0.43 | |
| v/c Ratio | | 0.76 | | | 1.15 | 0.39 | 0.17 | 1.09 | | 0.47 | 1.05 | |
| Control Delay | | 63.0 | | | 130.7 | 4.1 | 34.1 | 92.2 | | 25.2 | 66.7 | |
| Queue Delay | | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | | 63.0 | | | 130.7 | 4.1 | 34.1 | 92.2 | | 25.2 | 66.7 | |
| LOS | | E | | | F | A | C | F | | C | E | |
| Approach Delay | | 63.0 | | | 73.8 | | | 91.6 | | | 63.8 | |
| Approach LOS | | E | | | E | | | F | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 100 | | | |
| Actuated Cycle Length: 100 | | | |
| Offset: 0 (0%), Referenced to phase 1:NBSB, Start of Yellow | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 1.15 | | | |
| Intersection Signal Delay: 74.1 | | Intersection LOS: E | |
| Intersection Capacity Utilization 95.9% | | ICU Level of Service F | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 1: Summer Street & Pappas Way/Drydock Avenue



| Lane Group | Ø2 |
|---|---|
| Detector 2 Channel | |
| Detector 2 Extend (s) | |
| Turn Type | |
| Protected Phases | 2 |
| Permitted Phases | |
| Detector Phase | |
| Switch Phase | |
| Minimum Initial (s) | 4.0 |
| Minimum Split (s) | 27.0 |
| Total Split (s) | 27.0 |
| Total Split (%) | 27% |
| Maximum Green (s) | 23.0 |
| Yellow Time (s) | 4.0 |
| All-Red Time (s) | 0.0 |
| Lost Time Adjust (s) | |
| Total Lost Time (s) | |
| Lead/Lag | Lag |
| Lead-Lag Optimize? | |
| Vehicle Extension (s) | 2.0 |
| Recall Mode | None |
| Walk Time (s) | 7.0 |
| Flash Dont Walk (s) | 16.0 |
| Pedestrian Calls (#/hr) | 28 |
| Act Effct Green (s) | |
| Actuated g/C Ratio | |
| v/c Ratio | |
| Control Delay | |
| Queue Delay | |
| Total Delay | |
| LOS | |
| Approach Delay | |
| Approach LOS | |

| Intersection Summary |
|---|

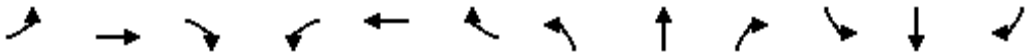


| Lane Group | EBT | WBT | WBR | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 144 | 433 | 353 | 11 | 951 | 98 | 1349 |
| v/c Ratio | 0.76 | 1.15 | 0.39 | 0.17 | 1.09 | 0.47 | 1.05 |
| Control Delay | 63.0 | 130.7 | 4.1 | 34.1 | 92.2 | 25.2 | 66.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 63.0 | 130.7 | 4.1 | 34.1 | 92.2 | 25.2 | 66.7 |
| Queue Length 50th (ft) | ~105 | ~415 | 0 | 5 | ~356 | 37 | ~488 |
| Queue Length 95th (ft) | #212 | #603 | 60 | 22 | #484 | 70 | #626 |
| Internal Link Dist (ft) | 665 | 870 | | | 1430 | | 421 |
| Turn Bay Length (ft) | | | | 70 | | 350 | |
| Base Capacity (vph) | 189 | 376 | 897 | 66 | 872 | 210 | 1289 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.76 | 1.15 | 0.39 | 0.17 | 1.09 | 0.47 | 1.05 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

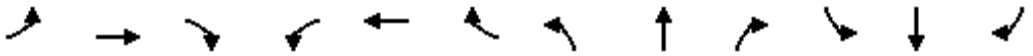
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 67 | 39 | 16 | 272 | 122 | 321 | 10 | 715 | 141 | 91 | 1027 | 228 |
| Future Volume (vph) | 67 | 39 | 16 | 272 | 122 | 321 | 10 | 715 | 141 | 91 | 1027 | 228 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 14 | 12 | 12 | 13 | 16 | 10 | 11 | 12 | 13 | 12 | 12 |
| Total Lost time (s) | | 5.0 | | | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | 1.00 | 1.00 | 0.95 | | 1.00 | 0.95 | |
| Frpb, ped/bikes | | 0.99 | | | 1.00 | 1.00 | 1.00 | 0.99 | | 1.00 | 0.96 | |
| Flpb, ped/bikes | | 1.00 | | | 0.98 | 1.00 | 0.98 | 1.00 | | 1.00 | 1.00 | |
| Frt | | 0.98 | | | 1.00 | 0.85 | 1.00 | 0.98 | | 1.00 | 0.97 | |
| Flt Protected | | 0.97 | | | 0.97 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 1639 | | | 1674 | 1569 | 1487 | 2954 | | 1568 | 2951 | |
| Flt Permitted | | 0.36 | | | 0.71 | 1.00 | 0.15 | 1.00 | | 0.15 | 1.00 | |
| Satd. Flow (perm) | | 603 | | | 1230 | 1569 | 228 | 2954 | | 241 | 2951 | |
| Peak-hour factor, PHF | 0.85 | 0.85 | 0.85 | 0.91 | 0.91 | 0.91 | 0.90 | 0.90 | 0.90 | 0.93 | 0.93 | 0.93 |
| Adj. Flow (vph) | 79 | 46 | 19 | 299 | 134 | 353 | 11 | 794 | 157 | 98 | 1104 | 245 |
| RTOR Reduction (vph) | 0 | 5 | 0 | 0 | 0 | 195 | 0 | 17 | 0 | 0 | 19 | 0 |
| Lane Group Flow (vph) | 0 | 139 | 0 | 0 | 433 | 158 | 11 | 934 | 0 | 98 | 1330 | 0 |
| Confl. Peds. (#/hr) | 21 | | 33 | 33 | | 21 | 138 | | 34 | 34 | | 138 |
| Confl. Bikes (#/hr) | | | 1 | | | 1 | | | 2 | | | 25 |
| Heavy Vehicles (%) | 6% | 3% | 8% | 0% | 1% | 5% | 0% | 3% | 2% | 7% | 3% | 4% |
| Turn Type | Perm | NA | | Perm | NA | pt+ov | Perm | NA | | D.P+P | NA | |
| Protected Phases | | 5 | | | 5 | 5 4 | | 1 | | 4 | 1 4 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 30.8 | | | 30.8 | 44.8 | 27.4 | 27.4 | | 36.4 | 41.4 | |
| Effective Green, g (s) | | 30.8 | | | 30.8 | 44.8 | 27.4 | 27.4 | | 36.4 | 41.4 | |
| Actuated g/C Ratio | | 0.31 | | | 0.31 | 0.45 | 0.27 | 0.27 | | 0.36 | 0.41 | |
| Clearance Time (s) | | 5.0 | | | 5.0 | | 5.0 | 5.0 | | 5.0 | | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | | 2.0 | 2.0 | | 2.0 | | |
| Lane Grp Cap (vph) | | 185 | | | 378 | 702 | 62 | 809 | | 207 | 1221 | |
| v/s Ratio Prot | | | | | | 0.10 | | 0.32 | | 0.04 | c0.45 | |
| v/s Ratio Perm | | 0.23 | | | c0.35 | | 0.05 | | | 0.13 | | |
| v/c Ratio | | 0.75 | | | 1.15 | 0.23 | 0.18 | 1.15 | | 0.47 | 1.09 | |
| Uniform Delay, d1 | | 31.2 | | | 34.6 | 16.9 | 27.7 | 36.3 | | 24.4 | 29.3 | |
| Progression Factor | | 1.00 | | | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 14.2 | | | 92.1 | 0.1 | 6.2 | 83.5 | | 0.6 | 53.5 | |
| Delay (s) | | 45.3 | | | 126.7 | 17.0 | 33.9 | 119.8 | | 25.0 | 82.8 | |
| Level of Service | | D | | | F | B | C | F | | C | F | |
| Approach Delay (s) | | 45.3 | | | 77.4 | | | 118.9 | | | 78.9 | |
| Approach LOS | | D | | | E | | | F | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 88.6 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 0.99 | | |
| Actuated Cycle Length (s) | 100.0 | Sum of lost time (s) | 19.0 |
| Intersection Capacity Utilization | 95.9% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

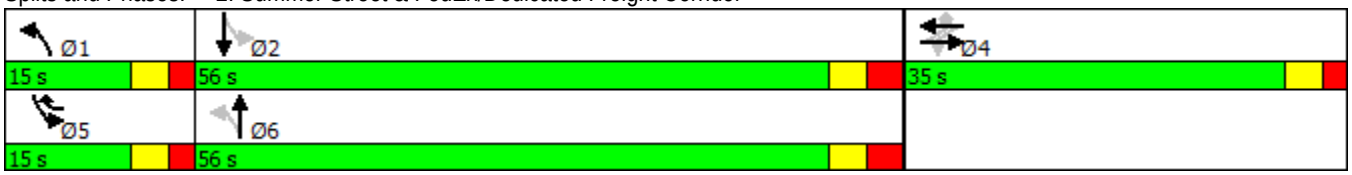


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 21 | 0 | 5 | 16 | 0 | 10 | 5 | 836 | 5 | 0 | 1299 | 16 |
| Future Volume (vph) | 21 | 0 | 5 | 16 | 0 | 10 | 5 | 836 | 5 | 0 | 1299 | 16 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 13 | 13 | 13 | 12 | 12 | 12 | 10 | 10 | 10 | 11 | 11 | 11 |
| Storage Length (ft) | 0 | | 0 | 0 | | 60 | 60 | | 0 | 120 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 50 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Frt | | 0.976 | | | | 0.850 | | 0.999 | | | 0.998 | |
| Flt Protected | | 0.961 | | | 0.950 | | 0.950 | | | | | |
| Satd. Flow (prot) | 0 | 1657 | 0 | 0 | 1624 | 727 | 1516 | 3029 | 0 | 826 | 3044 | 0 |
| Flt Permitted | | 0.752 | | | 0.739 | | 0.152 | | | | | |
| Satd. Flow (perm) | 0 | 1297 | 0 | 0 | 1264 | 727 | 243 | 3029 | 0 | 826 | 3044 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 82 | | | | 31 | | 1 | | | 1 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 228 | | | 352 | | | 665 | | | 1510 | |
| Travel Time (s) | | 5.2 | | | 8.0 | | | 15.1 | | | 34.3 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 100% | 0% | 0% | 0% | 100% | 3% | 0% |
| Adj. Flow (vph) | 23 | 0 | 5 | 17 | 0 | 11 | 5 | 909 | 5 | 0 | 1412 | 17 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 28 | 0 | 0 | 17 | 11 | 5 | 914 | 0 | 0 | 1429 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 12 | | | 11 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.10 | 1.10 | 1.10 | 1.14 | 1.14 | 1.14 | 1.25 | 1.25 | 1.25 | 1.19 | 1.19 | 1.19 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | 20 | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | 20 | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | pm+ov | pm+pt | NA | | pm+pt | NA | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Protected Phases | | 4 | | | 4 | 5 | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 4 | | | 4 | | 4 | 6 | 6 | | 2 | | |
| Detector Phase | 4 | 4 | | 4 | 4 | 5 | 1 | 6 | | 5 | 2 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 6.0 | 6.0 | | 6.0 | 6.0 | 6.0 | 6.0 | 10.0 | | 6.0 | 10.0 | |
| Minimum Split (s) | 26.0 | 26.0 | | 26.0 | 26.0 | 11.0 | 11.0 | 24.0 | | 11.0 | 24.0 | |
| Total Split (s) | 35.0 | 35.0 | | 35.0 | 35.0 | 15.0 | 15.0 | 56.0 | | 15.0 | 56.0 | |
| Total Split (%) | 33.0% | 33.0% | | 33.0% | 33.0% | 14.2% | 14.2% | 52.8% | | 14.2% | 52.8% | |
| Maximum Green (s) | 30.0 | 30.0 | | 30.0 | 30.0 | 10.0 | 10.0 | 50.0 | | 10.0 | 50.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 3.0 | | 2.0 | 3.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | 5.0 | 5.0 | 6.0 | | 5.0 | 6.0 | |
| Lead/Lag | | | | | | Lead | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | None | None | | None | None | None | None | Ped | | None | Max | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | | 7.0 | | | | |
| Flash Dont Walk (s) | 14.0 | 14.0 | | 14.0 | 14.0 | | | 9.0 | | | | |
| Pedestrian Calls (#/hr) | 10 | 10 | | 10 | 10 | | | 10 | | | | |
| Act Effct Green (s) | | 8.5 | | | 8.5 | 15.1 | 59.0 | 59.5 | | | 59.5 | |
| Actuated g/C Ratio | | 0.12 | | | 0.12 | 0.20 | 0.80 | 0.81 | | | 0.81 | |
| v/c Ratio | | 0.13 | | | 0.12 | 0.06 | 0.02 | 0.37 | | | 0.58 | |
| Control Delay | | 1.2 | | | 30.4 | 2.4 | 4.0 | 5.9 | | | 8.6 | |
| Queue Delay | | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | | | 0.0 | |
| Total Delay | | 1.2 | | | 30.4 | 2.4 | 4.0 | 5.9 | | | 8.6 | |
| LOS | | A | | | C | A | A | A | | | A | |
| Approach Delay | | 1.2 | | | 19.4 | | | 5.9 | | | 8.6 | |
| Approach LOS | | A | | | B | | | A | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 106 | | | |
| Actuated Cycle Length: 73.8 | | | |
| Natural Cycle: 80 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 0.58 | | | |
| Intersection Signal Delay: 7.6 | | Intersection LOS: A | |
| Intersection Capacity Utilization 57.9% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

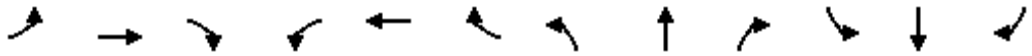
Splits and Phases: 2: Summer Street & FedEx/Dedicated Freight Corridor





| Lane Group | EBT | WBT | WBR | NBL | NBT | SBT |
|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 28 | 17 | 11 | 5 | 914 | 1429 |
| v/c Ratio | 0.13 | 0.12 | 0.06 | 0.02 | 0.37 | 0.58 |
| Control Delay | 1.2 | 30.4 | 2.4 | 4.0 | 5.9 | 8.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 1.2 | 30.4 | 2.4 | 4.0 | 5.9 | 8.6 |
| Queue Length 50th (ft) | 0 | 7 | 0 | 1 | 52 | 108 |
| Queue Length 95th (ft) | 0 | 25 | 4 | 4 | 233 | 477 |
| Internal Link Dist (ft) | 148 | 272 | | | 585 | 1430 |
| Turn Bay Length (ft) | | | 60 | 60 | | |
| Base Capacity (vph) | 583 | 521 | 211 | 371 | 2441 | 2453 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.05 | 0.03 | 0.05 | 0.01 | 0.37 | 0.58 |

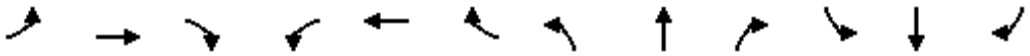
Intersection Summary



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 21 | 0 | 5 | 16 | 0 | 10 | 5 | 836 | 5 | 0 | 1299 | 16 |
| Future Volume (vph) | 21 | 0 | 5 | 16 | 0 | 10 | 5 | 836 | 5 | 0 | 1299 | 16 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 13 | 13 | 13 | 12 | 12 | 12 | 10 | 10 | 10 | 11 | 11 | 11 |
| Total Lost time (s) | | 5.0 | | | 5.0 | 5.0 | 5.0 | 6.0 | | | 6.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | 1.00 | 1.00 | 0.95 | | | 0.95 | |
| Frt | | 0.98 | | | 1.00 | 0.85 | 1.00 | 1.00 | | | 1.00 | |
| Flt Protected | | 0.96 | | | 0.95 | 1.00 | 0.95 | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | | 1656 | | | 1624 | 727 | 1516 | 3030 | | | 3045 | |
| Flt Permitted | | 0.75 | | | 0.74 | 1.00 | 0.15 | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | | 1298 | | | 1264 | 727 | 243 | 3030 | | | 3045 | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 23 | 0 | 5 | 17 | 0 | 11 | 5 | 909 | 5 | 0 | 1412 | 17 |
| RTOR Reduction (vph) | 0 | 26 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 2 | 0 | 0 | 17 | 1 | 5 | 914 | 0 | 0 | 1429 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 100% | 0% | 0% | 0% | 100% | 3% | 0% |
| Turn Type | Perm | NA | | Perm | NA | pm+ov | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | | 4 | | | 4 | 5 | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 4 | | | 4 | | 4 | 6 | 6 | | 2 | | |
| Actuated Green, G (s) | | 6.0 | | | 6.0 | 7.0 | 58.0 | 57.0 | | | 57.0 | |
| Effective Green, g (s) | | 6.0 | | | 6.0 | 7.0 | 58.0 | 57.0 | | | 57.0 | |
| Actuated g/C Ratio | | 0.08 | | | 0.08 | 0.09 | 0.72 | 0.71 | | | 0.71 | |
| Clearance Time (s) | | 5.0 | | | 5.0 | 5.0 | 5.0 | 6.0 | | | 6.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | 2.0 | 2.0 | 2.0 | | | 2.0 | |
| Lane Grp Cap (vph) | | 97 | | | 94 | 109 | 192 | 2158 | | | 2169 | |
| v/s Ratio Prot | | | | | | c0.00 | 0.00 | 0.30 | | | c0.47 | |
| v/s Ratio Perm | | 0.00 | | | c0.01 | 0.00 | 0.02 | | | | | |
| v/c Ratio | | 0.02 | | | 0.18 | 0.01 | 0.03 | 0.42 | | | 0.66 | |
| Uniform Delay, d1 | | 34.3 | | | 34.7 | 33.3 | 3.7 | 4.7 | | | 6.2 | |
| Progression Factor | | 1.00 | | | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 0.0 | | | 0.3 | 0.0 | 0.0 | 0.0 | | | 1.6 | |
| Delay (s) | | 34.3 | | | 35.0 | 33.3 | 3.8 | 4.8 | | | 7.8 | |
| Level of Service | | C | | | D | C | A | A | | | A | |
| Approach Delay (s) | | 34.3 | | | 34.4 | | | 4.8 | | | 7.8 | |
| Approach LOS | | C | | | C | | | A | | | A | |

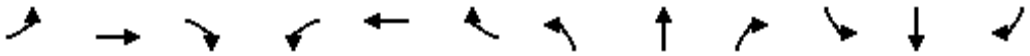
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 7.3 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.60 | | |
| Actuated Cycle Length (s) | 80.0 | Sum of lost time (s) | 16.0 |
| Intersection Capacity Utilization | 57.9% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 16 | 0 | 10 | 41 | 0 | 43 | 0 | 778 | 38 | 42 | 1236 | 10 |
| Future Volume (vph) | 16 | 0 | 10 | 41 | 0 | 43 | 0 | 778 | 38 | 42 | 1236 | 10 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 14 | 12 | 12 | 12 | 12 | 12 | 10 | 10 | 12 | 12 | 10 | 10 |
| Storage Length (ft) | 0 | | 0 | 0 | | 100 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.949 | | | | 0.850 | | 0.994 | | | 0.999 | |
| Flt Protected | | 0.970 | | | 0.950 | | | | | | 0.998 | |
| Satd. Flow (prot) | 0 | 1517 | 0 | 0 | 1624 | 1454 | 0 | 2958 | 0 | 0 | 2966 | 0 |
| Flt Permitted | | 0.970 | | | 0.950 | | | | | | 0.998 | |
| Satd. Flow (perm) | 0 | 1517 | 0 | 0 | 1624 | 1454 | 0 | 2958 | 0 | 0 | 2966 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 384 | | | 327 | | | 365 | | | 665 | |
| Travel Time (s) | | 8.7 | | | 7.4 | | | 8.3 | | | 15.1 | |
| Confl. Peds. (#/hr) | | | | | | | 153 | | | | | 153 |
| Confl. Bikes (#/hr) | | | | | | | | | | | | 34 |
| Peak Hour Factor | 0.65 | 0.92 | 0.65 | 0.92 | 0.92 | 0.92 | 0.85 | 0.85 | 0.92 | 0.92 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 6% | 0% | 0% | 0% | 0% | 0% | 0% | 2% | 0% | 0% | 2% | 0% |
| Parking (#/hr) | | | | | | | 1 | | | | | 1 |
| Adj. Flow (vph) | 25 | 0 | 15 | 45 | 0 | 47 | 0 | 915 | 41 | 46 | 1288 | 10 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 40 | 0 | 0 | 45 | 47 | 0 | 956 | 0 | 0 | 1344 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 10 | | | 10 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.05 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.25 | 1.25 | 1.14 | 1.14 | 1.25 | 1.25 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |

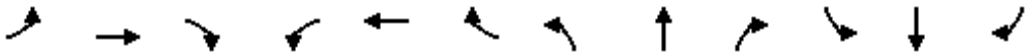
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 83.3% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 16 | 0 | 10 | 41 | 0 | 43 | 0 | 778 | 38 | 42 | 1236 | 10 |
| Future Volume (Veh/h) | 16 | 0 | 10 | 41 | 0 | 43 | 0 | 778 | 38 | 42 | 1236 | 10 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.65 | 0.92 | 0.65 | 0.92 | 0.92 | 0.92 | 0.85 | 0.85 | 0.92 | 0.92 | 0.96 | 0.96 |
| Hourly flow rate (vph) | 25 | 0 | 15 | 45 | 0 | 47 | 0 | 915 | 41 | 46 | 1288 | 10 |
| Pedestrians | | 153 | | | | | | | | | | |
| Lane Width (ft) | | 12.0 | | | | | | | | | | |
| Walking Speed (ft/s) | | 4.0 | | | | | | | | | | |
| Percent Blockage | | 13 | | | | | | | | | | |
| Right turn flare (veh) | | | | | | 4 | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | 365 | | | 665 | |
| pX, platoon unblocked | 0.84 | 0.84 | 0.77 | 0.84 | 0.84 | 0.86 | 0.77 | | | 0.86 | | |
| vC, conflicting volume | 1996 | 2494 | 802 | 1686 | 2478 | 478 | 1451 | | | 956 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1073 | 1667 | 149 | 704 | 1648 | 80 | 991 | | | 634 | | |
| tC, single (s) | 7.6 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.6 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 75 | 100 | 97 | 81 | 100 | 94 | 100 | | | 94 | | |
| cM capacity (veh/h) | 101 | 67 | 590 | 232 | 69 | 838 | 475 | | | 828 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | SB 1 | SB 2 |
|---|---|---|---|---|---|---|
| Volume Total | 40 | 92 | 458 | 498 | 690 | 654 |
| Volume Left | 25 | 45 | 0 | 0 | 46 | 0 |
| Volume Right | 15 | 47 | 0 | 41 | 0 | 10 |
| cSH | 147 | 474 | 475 | 1700 | 828 | 1700 |
| Volume to Capacity | 0.27 | 0.19 | 0.00 | 0.29 | 0.06 | 0.38 |
| Queue Length 95th (ft) | 26 | 18 | 0 | 0 | 4 | 0 |
| Control Delay (s) | 38.4 | 16.7 | 0.0 | 0.0 | 1.4 | 0.0 |
| Lane LOS | E | C | | | A | |
| Approach Delay (s) | 38.4 | 16.7 | 0.0 | | 0.7 | |
| Approach LOS | E | C | | | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 1.7 | | | |
| Intersection Capacity Utilization | 83.3% | ICU Level of Service | E | |
| Analysis Period (min) | 15 | | | |



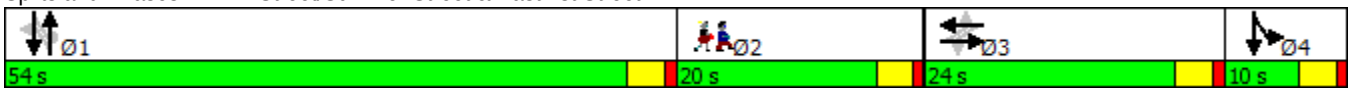
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 43 | 110 | 62 | 32 | 49 | 204 | 26 | 563 | 34 | 333 | 805 | 149 |
| Future Volume (vph) | 43 | 110 | 62 | 32 | 49 | 204 | 26 | 563 | 34 | 333 | 805 | 149 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 15 | 12 | 12 | 16 | 12 | 12 | 9 | 12 | 12 | 9 | 12 |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 100 | | 0 | 100 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Ped Bike Factor | | 0.96 | | | 0.95 | | | 1.00 | | | 0.98 | |
| Frt | | 0.961 | | | 0.904 | | | 0.992 | | | 0.983 | |
| Flt Protected | | 0.990 | | | 0.994 | | | 0.998 | | | 0.987 | |
| Satd. Flow (prot) | 0 | 1658 | 0 | 0 | 1586 | 0 | 0 | 2875 | 0 | 0 | 2731 | 0 |
| Flt Permitted | | 0.646 | | | 0.883 | | | 0.780 | | | 0.597 | |
| Satd. Flow (perm) | 0 | 1078 | 0 | 0 | 1402 | 0 | 0 | 2246 | 0 | 0 | 1645 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 17 | | | 102 | | | 7 | | | 20 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 540 | | | 576 | | | 340 | | | 365 | |
| Travel Time (s) | | 12.3 | | | 13.1 | | | 7.7 | | | 8.3 | |
| Confl. Peds. (#/hr) | 29 | | 36 | 36 | | 29 | 134 | | 51 | 51 | | 134 |
| Confl. Bikes (#/hr) | | | 12 | | | 1 | | | | | | 19 |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.85 | 0.85 | 0.85 | 0.88 | 0.88 | 0.88 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 13% | 1% | 2% | 0% | 5% | 6% | 0% | 0% | 5% | 1% | 2% | 4% |
| Adj. Flow (vph) | 50 | 128 | 72 | 38 | 58 | 240 | 30 | 640 | 39 | 370 | 894 | 166 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 250 | 0 | 0 | 336 | 0 | 0 | 709 | 0 | 0 | 1430 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.01 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 1.30 | 1.14 | 1.14 | 1.30 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |

| Lane Group | Ø2 |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | |
| Future Volume (vph) | |
| Ideal Flow (vphpl) | |
| Lane Width (ft) | |
| Storage Length (ft) | |
| Storage Lanes | |
| Taper Length (ft) | |
| Lane Util. Factor | |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Right Turn on Red | |
| Satd. Flow (RTOR) | |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | |
| Heavy Vehicles (%) | |
| Adj. Flow (vph) | |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | |
| Enter Blocked Intersection | |
| Lane Alignment | |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | |
| Turning Speed (mph) | |
| Number of Detectors | |
| Detector Template | |
| Leading Detector (ft) | |
| Trailing Detector (ft) | |
| Detector 1 Position(ft) | |
| Detector 1 Size(ft) | |
| Detector 1 Type | |
| Detector 1 Channel | |
| Detector 1 Extend (s) | |
| Detector 1 Queue (s) | |
| Detector 1 Delay (s) | |
| Detector 2 Position(ft) | |
| Detector 2 Size(ft) | |
| Detector 2 Type | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | D.P+P | NA | |
| Protected Phases | | 3 | | | 3 | | | 1 | | 4 | 1 4 | |
| Permitted Phases | 3 | | | 3 | | | 1 | | | 1 | | |
| Detector Phase | 3 | 3 | | 3 | 3 | | 1 | 1 | | 4 | 1 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 10.0 | 10.0 | | 5.0 | | |
| Minimum Split (s) | 11.0 | 11.0 | | 11.0 | 11.0 | | 14.0 | 14.0 | | 9.0 | | |
| Total Split (s) | 24.0 | 24.0 | | 24.0 | 24.0 | | 54.0 | 54.0 | | 10.0 | | |
| Total Split (%) | 22.2% | 22.2% | | 22.2% | 22.2% | | 50.0% | 50.0% | | 9.3% | | |
| Maximum Green (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 50.0 | 50.0 | | 6.0 | | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | |
| Total Lost Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | | |
| Lead/Lag | Lead | Lead | | Lead | Lead | | Lead | Lead | | Lag | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 1.0 | | |
| Recall Mode | None | None | | None | None | | Max | Max | | None | | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 20.2 | | | 20.2 | | | 50.5 | | | 56.6 | |
| Actuated g/C Ratio | | 0.20 | | | 0.20 | | | 0.50 | | | 0.57 | |
| v/c Ratio | | 1.08 | | | 0.92 | | | 0.62 | | | 1.42 | |
| Control Delay | | 121.1 | | | 61.1 | | | 22.5 | | | 218.2 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 121.1 | | | 61.1 | | | 22.5 | | | 218.2 | |
| LOS | | F | | | E | | | C | | | F | |
| Approach Delay | | 121.1 | | | 61.1 | | | 22.5 | | | 218.2 | |
| Approach LOS | | F | | | E | | | C | | | F | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 108 | | | |
| Actuated Cycle Length: 100 | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 1.42 | | | |
| Intersection Signal Delay: 139.0 | | Intersection LOS: F | |
| Intersection Capacity Utilization 94.9% | | ICU Level of Service F | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 4: L Street/Summer Street & East 1st Street



| Lane Group | Ø2 |
|---|---|
| Detector 2 Channel | |
| Detector 2 Extend (s) | |
| Turn Type | |
| Protected Phases | 2 |
| Permitted Phases | |
| Detector Phase | |
| Switch Phase | |
| Minimum Initial (s) | 4.0 |
| Minimum Split (s) | 20.0 |
| Total Split (s) | 20.0 |
| Total Split (%) | 19% |
| Maximum Green (s) | 16.0 |
| Yellow Time (s) | 3.0 |
| All-Red Time (s) | 1.0 |
| Lost Time Adjust (s) | |
| Total Lost Time (s) | |
| Lead/Lag | Lag |
| Lead-Lag Optimize? | |
| Vehicle Extension (s) | 3.0 |
| Recall Mode | None |
| Walk Time (s) | 7.0 |
| Flash Dont Walk (s) | 9.0 |
| Pedestrian Calls (#/hr) | 31 |
| Act Effct Green (s) | |
| Actuated g/C Ratio | |
| v/c Ratio | |
| Control Delay | |
| Queue Delay | |
| Total Delay | |
| LOS | |
| Approach Delay | |
| Approach LOS | |

| Intersection Summary |
|---|

| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 250 | 336 | 709 | 1430 |
| v/c Ratio | 1.08 | 0.92 | 0.62 | 1.42 |
| Control Delay | 121.1 | 61.1 | 22.5 | 218.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 121.1 | 61.1 | 22.5 | 218.2 |
| Queue Length 50th (ft) | ~198 | 170 | 194 | ~740 |
| Queue Length 95th (ft) | #336 | #320 | 256 | #880 |
| Internal Link Dist (ft) | 460 | 496 | 260 | 285 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 231 | 364 | 1137 | 1004 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 1.08 | 0.92 | 0.62 | 1.42 |

Intersection Summary

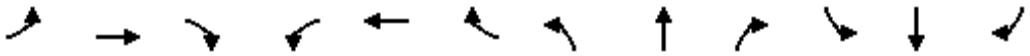
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 43 | 110 | 62 | 32 | 49 | 204 | 26 | 563 | 34 | 333 | 805 | 149 |
| Future Volume (vph) | 43 | 110 | 62 | 32 | 49 | 204 | 26 | 563 | 34 | 333 | 805 | 149 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 15 | 12 | 12 | 16 | 12 | 12 | 9 | 12 | 12 | 9 | 12 |
| Total Lost time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | | | 0.95 | | | 0.95 | |
| Frpb, ped/bikes | | 0.96 | | | 0.96 | | | 1.00 | | | 0.98 | |
| Flpb, ped/bikes | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Frt | | 0.96 | | | 0.90 | | | 0.99 | | | 0.98 | |
| Flt Protected | | 0.99 | | | 0.99 | | | 1.00 | | | 0.99 | |
| Satd. Flow (prot) | | 1657 | | | 1582 | | | 2873 | | | 2727 | |
| Flt Permitted | | 0.65 | | | 0.88 | | | 0.78 | | | 0.60 | |
| Satd. Flow (perm) | | 1082 | | | 1404 | | | 2245 | | | 1648 | |
| Peak-hour factor, PHF | 0.86 | 0.86 | 0.86 | 0.85 | 0.85 | 0.85 | 0.88 | 0.88 | 0.88 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 50 | 128 | 72 | 38 | 58 | 240 | 30 | 640 | 39 | 370 | 894 | 166 |
| RTOR Reduction (vph) | 0 | 14 | 0 | 0 | 82 | 0 | 0 | 4 | 0 | 0 | 9 | 0 |
| Lane Group Flow (vph) | 0 | 236 | 0 | 0 | 254 | 0 | 0 | 705 | 0 | 0 | 1421 | 0 |
| Confl. Peds. (#/hr) | 29 | | 36 | 36 | | 29 | 134 | | 51 | 51 | | 134 |
| Confl. Bikes (#/hr) | | | 12 | | | 1 | | | | | | 19 |
| Heavy Vehicles (%) | 13% | 1% | 2% | 0% | 5% | 6% | 0% | 0% | 5% | 1% | 2% | 4% |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | D.P+P | NA | |
| Protected Phases | | 3 | | | 3 | | | 1 | | 4 | 1 4 | |
| Permitted Phases | 3 | | | 3 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 20.2 | | | 20.2 | | | 50.5 | | | 56.6 | |
| Effective Green, g (s) | | 20.2 | | | 20.2 | | | 50.5 | | | 56.6 | |
| Actuated g/C Ratio | | 0.20 | | | 0.20 | | | 0.50 | | | 0.56 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | | | 3.0 | | | | |
| Lane Grp Cap (vph) | | 214 | | | 278 | | | 1114 | | | 981 | |
| v/s Ratio Prot | | | | | | | | | | | c0.09 | |
| v/s Ratio Perm | | c0.22 | | | 0.18 | | | 0.31 | | | c0.72 | |
| v/c Ratio | | 1.10 | | | 0.91 | | | 0.63 | | | 1.45 | |
| Uniform Delay, d1 | | 40.8 | | | 39.9 | | | 18.8 | | | 22.6 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 92.3 | | | 32.3 | | | 2.7 | | | 207.7 | |
| Delay (s) | | 133.1 | | | 72.2 | | | 21.5 | | | 230.2 | |
| Level of Service | | F | | | E | | | C | | | F | |
| Approach Delay (s) | | 133.1 | | | 72.2 | | | 21.5 | | | 230.2 | |
| Approach LOS | | F | | | E | | | C | | | F | |

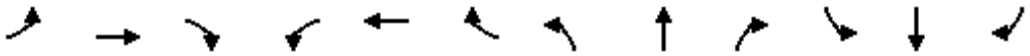
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 147.5 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 1.22 | | |
| Actuated Cycle Length (s) | 101.7 | Sum of lost time (s) | 16.0 |
| Intersection Capacity Utilization | 94.9% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 10 | 0 | 10 | 16 | 0 | 5 | 21 | 612 | 10 | 21 | 852 | 26 |
| Future Volume (vph) | 10 | 0 | 10 | 16 | 0 | 5 | 21 | 612 | 10 | 21 | 852 | 26 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 16 | 12 | 12 | 16 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.932 | | | 0.968 | | | 0.998 | | | 0.996 | |
| Flt Protected | | 0.976 | | | 0.963 | | | 0.998 | | | 0.999 | |
| Satd. Flow (prot) | 0 | 1452 | 0 | 0 | 1488 | 0 | 0 | 1912 | 0 | 0 | 1890 | 0 |
| Flt Permitted | | 0.976 | | | 0.963 | | | 0.998 | | | 0.999 | |
| Satd. Flow (perm) | 0 | 1452 | 0 | 0 | 1488 | 0 | 0 | 1912 | 0 | 0 | 1890 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 429 | | | 453 | | | 298 | | | 340 | |
| Travel Time (s) | | 9.8 | | | 10.3 | | | 6.8 | | | 7.7 | |
| Confl. Peds. (#/hr) | 33 | | 15 | 15 | | 33 | 131 | | 44 | 44 | | 131 |
| Confl. Bikes (#/hr) | | | 1 | | | | | | 1 | | | 18 |
| Peak Hour Factor | 0.50 | 0.50 | 0.50 | 0.86 | 0.86 | 0.86 | 0.89 | 0.89 | 0.89 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% | 0% | 0% | 2% | 4% |
| Adj. Flow (vph) | 20 | 0 | 20 | 19 | 0 | 6 | 24 | 688 | 11 | 23 | 926 | 28 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 40 | 0 | 0 | 25 | 0 | 0 | 723 | 0 | 0 | 977 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.25 | 1.14 | 1.14 | 1.25 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 0.97 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 78.1% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |

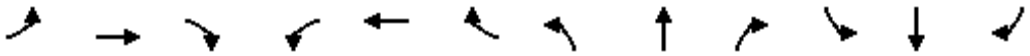


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 10 | 0 | 10 | 16 | 0 | 5 | 21 | 612 | 10 | 21 | 852 | 26 |
| Future Volume (Veh/h) | 10 | 0 | 10 | 16 | 0 | 5 | 21 | 612 | 10 | 21 | 852 | 26 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.50 | 0.50 | 0.50 | 0.86 | 0.86 | 0.86 | 0.89 | 0.89 | 0.89 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 20 | 0 | 20 | 19 | 0 | 6 | 24 | 688 | 11 | 23 | 926 | 28 |
| Pedestrians | | 131 | | | 44 | | | 15 | | | 33 | |
| Lane Width (ft) | | 10.0 | | | 10.0 | | | 16.0 | | | 16.0 | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Percent Blockage | | 9 | | | 3 | | | 2 | | | 4 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | 602 | | | 340 | |
| pX, platoon unblocked | 0.59 | 0.59 | 0.49 | 0.59 | 0.59 | 0.80 | 0.49 | | | 0.80 | | |
| vC, conflicting volume | 1898 | 1908 | 1086 | 1806 | 1916 | 770 | 1085 | | | 743 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1404 | 1422 | 654 | 1250 | 1436 | 586 | 652 | | | 552 | | |
| tC, single (s) | *4.0 | 6.5 | *4.0 | *4.0 | 6.5 | *4.0 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 88 | 100 | 93 | 90 | 100 | 99 | 94 | | | 97 | | |
| cM capacity (veh/h) | 172 | 65 | 307 | 198 | 64 | 548 | 420 | | | 796 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 40 | 25 | 723 | 977 |
| Volume Left | 20 | 19 | 24 | 23 |
| Volume Right | 20 | 6 | 11 | 28 |
| cSH | 221 | 234 | 420 | 796 |
| Volume to Capacity | 0.18 | 0.11 | 0.06 | 0.03 |
| Queue Length 95th (ft) | 16 | 9 | 5 | 2 |
| Control Delay (s) | 24.9 | 22.2 | 1.8 | 0.8 |
| Lane LOS | C | C | A | A |
| Approach Delay (s) | 24.9 | 22.2 | 1.8 | 0.8 |
| Approach LOS | C | C | | |

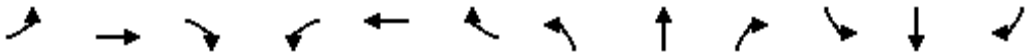
| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.1 | | |
| Intersection Capacity Utilization | 78.1% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

* User Entered Value



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 21 | 10 | 16 | 0 | 10 | 16 | 10 | 602 | 10 | 16 | 841 | 21 |
| Future Volume (vph) | 21 | 10 | 16 | 0 | 10 | 16 | 10 | 602 | 10 | 16 | 841 | 21 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 16 | 12 | 12 | 16 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.954 | | | 0.918 | | | 0.998 | | | 0.997 | |
| Flt Protected | | 0.978 | | | | | | 0.999 | | | 0.999 | |
| Satd. Flow (prot) | 0 | 1340 | 0 | 0 | 1319 | 0 | 0 | 1910 | 0 | 0 | 1894 | 0 |
| Flt Permitted | | 0.978 | | | | | | 0.999 | | | 0.999 | |
| Satd. Flow (perm) | 0 | 1340 | 0 | 0 | 1319 | 0 | 0 | 1910 | 0 | 0 | 1894 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 638 | | | 716 | | | 304 | | | 298 | |
| Travel Time (s) | | 14.5 | | | 16.3 | | | 6.9 | | | 6.8 | |
| Confl. Peds. (#/hr) | 23 | | 27 | 27 | | 23 | 117 | | 70 | 70 | | 117 |
| Confl. Bikes (#/hr) | | | | | | | | | 1 | | | 15 |
| Peak Hour Factor | 0.67 | 0.67 | 0.67 | 0.63 | 0.63 | 0.63 | 0.86 | 0.86 | 0.86 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% | 13% | 0% | 2% | 0% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | | | | | |
| Adj. Flow (vph) | 31 | 15 | 24 | 0 | 16 | 25 | 12 | 700 | 12 | 17 | 885 | 22 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 70 | 0 | 0 | 41 | 0 | 0 | 724 | 0 | 0 | 924 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 0.97 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 79.3% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |

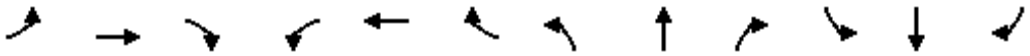


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 21 | 10 | 16 | 0 | 10 | 16 | 10 | 602 | 10 | 16 | 841 | 21 |
| Future Volume (Veh/h) | 21 | 10 | 16 | 0 | 10 | 16 | 10 | 602 | 10 | 16 | 841 | 21 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.67 | 0.67 | 0.67 | 0.63 | 0.63 | 0.63 | 0.86 | 0.86 | 0.86 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 31 | 15 | 24 | 0 | 16 | 25 | 12 | 700 | 12 | 17 | 885 | 22 |
| Pedestrians | | 117 | | | 70 | | | 27 | | | 23 | |
| Lane Width (ft) | | 10.0 | | | 10.0 | | | 16.0 | | | 16.0 | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Percent Blockage | | 8 | | | 5 | | | 3 | | | 3 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | 304 | | | 638 | |
| pX, platoon unblocked | 0.60 | 0.60 | 0.51 | 0.60 | 0.60 | 0.80 | 0.51 | | | 0.80 | | |
| vC, conflicting volume | 1833 | 1853 | 1040 | 1788 | 1858 | 799 | 1024 | | | 782 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1319 | 1352 | 591 | 1246 | 1361 | 627 | 560 | | | 606 | | |
| tC, single (s) | *4.0 | *4.0 | *4.0 | 7.1 | *4.0 | *4.0 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 83 | 92 | 93 | 100 | 92 | 95 | 97 | | | 98 | | |
| cM capacity (veh/h) | 178 | 195 | 330 | 65 | 194 | 532 | 475 | | | 750 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 70 | 41 | 724 | 924 |
| Volume Left | 31 | 0 | 12 | 17 |
| Volume Right | 24 | 25 | 12 | 22 |
| cSH | 216 | 316 | 475 | 750 |
| Volume to Capacity | 0.32 | 0.13 | 0.03 | 0.02 |
| Queue Length 95th (ft) | 33 | 11 | 2 | 2 |
| Control Delay (s) | 29.4 | 18.1 | 0.8 | 0.7 |
| Lane LOS | D | C | A | A |
| Approach Delay (s) | 29.4 | 18.1 | 0.8 | 0.7 |
| Approach LOS | D | C | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 2.2 | | | |
| Intersection Capacity Utilization | 79.3% | ICU Level of Service | D | |
| Analysis Period (min) | 15 | | | |

* User Entered Value



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 52 | 140 | 52 | 10 | 150 | 42 | 78 | 518 | 26 | 69 | 583 | 200 |
| Future Volume (vph) | 52 | 140 | 52 | 10 | 150 | 42 | 78 | 518 | 26 | 69 | 583 | 200 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 11 | 12 | 12 | 16 | 12 | 10 | 10 | 10 | 10 | 10 | 10 |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 0 | | 250 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 0 | | 1 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 0.95 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Ped Bike Factor | | 0.94 | | | 0.96 | | | 1.00 | | | 0.97 | |
| Frt | | 0.968 | | | 0.972 | | | 0.994 | | | 0.965 | |
| Flt Protected | | 0.989 | | | 0.998 | | | 0.994 | | | 0.996 | |
| Satd. Flow (prot) | 0 | 2590 | 0 | 0 | 1564 | 0 | 0 | 2837 | 0 | 0 | 2642 | 0 |
| Flt Permitted | | 0.711 | | | 0.979 | | | 0.578 | | | 0.714 | |
| Satd. Flow (perm) | 0 | 1835 | 0 | 0 | 1524 | 0 | 0 | 1645 | 0 | 0 | 1891 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 642 | | | 187 | | | 618 | | | 304 | |
| Travel Time (s) | | 14.6 | | | 4.3 | | | 14.0 | | | 6.9 | |
| Confl. Peds. (#/hr) | 61 | | 89 | 89 | | 61 | 154 | | 61 | 61 | | 154 |
| Confl. Bikes (#/hr) | | | 7 | | | 1 | | | 1 | | | 6 |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.88 | 0.88 | 0.88 | 0.86 | 0.86 | 0.86 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 2% | 9% | 0% | 0% | 6% | 0% | 0% | 0% | 3% | 13% | 0% | 1% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Adj. Flow (vph) | 58 | 157 | 58 | 11 | 170 | 48 | 91 | 602 | 30 | 74 | 627 | 215 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 273 | 0 | 0 | 229 | 0 | 0 | 723 | 0 | 0 | 916 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.27 | 1.14 | 1.14 | 1.12 | 1.14 | 1.25 | 1.33 | 1.25 | 1.25 | 1.33 | 1.25 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |

| Lane Group | Ø2 |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | |
| Future Volume (vph) | |
| Ideal Flow (vphpl) | |
| Lane Width (ft) | |
| Storage Length (ft) | |
| Storage Lanes | |
| Taper Length (ft) | |
| Lane Util. Factor | |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Right Turn on Red | |
| Satd. Flow (RTOR) | |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | |
| Heavy Vehicles (%) | |
| Parking (#/hr) | |
| Adj. Flow (vph) | |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | |
| Enter Blocked Intersection | |
| Lane Alignment | |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | |
| Turning Speed (mph) | |
| Number of Detectors | |
| Detector Template | |
| Leading Detector (ft) | |
| Trailing Detector (ft) | |
| Detector 1 Position(ft) | |
| Detector 1 Size(ft) | |
| Detector 1 Type | |
| Detector 1 Channel | |
| Detector 1 Extend (s) | |
| Detector 1 Queue (s) | |
| Detector 1 Delay (s) | |
| Detector 2 Position(ft) | |
| Detector 2 Size(ft) | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | D.P+P | NA | | Perm | NA | | D.P+P | NA | | Perm | NA | |
| Protected Phases | 3 | 3 4 | | | 4 | | 5 | 1 5 | | | 1 | |
| Permitted Phases | 4 | | | 4 | | | 1 | | | 1 | | |
| Detector Phase | 3 | 3 4 | | 4 | 4 | | 5 | 1 5 | | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | | | 10.0 | 10.0 | | 6.0 | | | 30.0 | 30.0 | |
| Minimum Split (s) | 10.0 | | | 14.0 | 14.0 | | 10.0 | | | 34.0 | 34.0 | |
| Total Split (s) | 11.0 | | | 34.0 | 34.0 | | 19.0 | | | 54.0 | 54.0 | |
| Total Split (%) | 7.7% | | | 23.9% | 23.9% | | 13.4% | | | 38.0% | 38.0% | |
| Maximum Green (s) | 6.0 | | | 30.0 | 30.0 | | 15.0 | | | 50.0 | 50.0 | |
| Yellow Time (s) | 3.0 | | | 3.0 | 3.0 | | 3.0 | | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | | | 1.0 | 1.0 | | 1.0 | | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | | | | | 0.0 | | | | | | 0.0 | |
| Total Lost Time (s) | | | | | 4.0 | | | | | | 4.0 | |
| Lead/Lag | Lead | | | Lag | Lag | | | | | Lead | Lead | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | | | 2.0 | 2.0 | | 2.0 | | | 2.0 | 2.0 | |
| Recall Mode | Max | | | Max | Max | | Max | | | Max | Max | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 35.2 | | | 30.2 | | | 65.4 | | | 50.3 | |
| Actuated g/C Ratio | | 0.26 | | | 0.22 | | | 0.48 | | | 0.37 | |
| v/c Ratio | | 0.54 | | | 0.69 | | | 0.79 | | | 1.32 | |
| Control Delay | | 47.1 | | | 62.4 | | | 34.4 | | | 191.3 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 47.1 | | | 62.4 | | | 34.4 | | | 191.3 | |
| LOS | | D | | | E | | | C | | | F | |
| Approach Delay | | 47.1 | | | 62.4 | | | 34.4 | | | 191.3 | |
| Approach LOS | | D | | | E | | | C | | | F | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 142 | | | |
| Actuated Cycle Length: 137.2 | | | |
| Natural Cycle: 125 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 1.32 | | | |
| Intersection Signal Delay: 106.1 | | Intersection LOS: F | |
| Intersection Capacity Utilization 90.3% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 7: L Street & E Broadway



| Lane Group | Ø2 |
|---|---|
| Detector 2 Type | |
| Detector 2 Channel | |
| Detector 2 Extend (s) | |
| Turn Type | |
| Protected Phases | 2 |
| Permitted Phases | |
| Detector Phase | |
| Switch Phase | |
| Minimum Initial (s) | 4.0 |
| Minimum Split (s) | 24.0 |
| Total Split (s) | 24.0 |
| Total Split (%) | 17% |
| Maximum Green (s) | 20.0 |
| Yellow Time (s) | 3.0 |
| All-Red Time (s) | 1.0 |
| Lost Time Adjust (s) | |
| Total Lost Time (s) | |
| Lead/Lag | Lag |
| Lead-Lag Optimize? | |
| Vehicle Extension (s) | 2.0 |
| Recall Mode | None |
| Walk Time (s) | 8.0 |
| Flash Dont Walk (s) | 12.0 |
| Pedestrian Calls (#/hr) | 46 |
| Act Effct Green (s) | |
| Actuated g/C Ratio | |
| v/c Ratio | |
| Control Delay | |
| Queue Delay | |
| Total Delay | |
| LOS | |
| Approach Delay | |
| Approach LOS | |

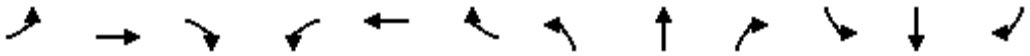
| Intersection Summary |
|---|

| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 273 | 229 | 723 | 916 |
| v/c Ratio | 0.54 | 0.69 | 0.79 | 1.32 |
| Control Delay | 47.1 | 62.4 | 34.4 | 191.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 47.1 | 62.4 | 34.4 | 191.3 |
| Queue Length 50th (ft) | 107 | 199 | 237 | ~588 |
| Queue Length 95th (ft) | 148 | 289 | 279 | #723 |
| Internal Link Dist (ft) | 562 | 107 | 538 | 224 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 504 | 334 | 914 | 692 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.54 | 0.69 | 0.79 | 1.32 |

Intersection Summary

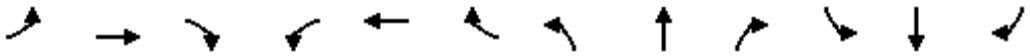
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



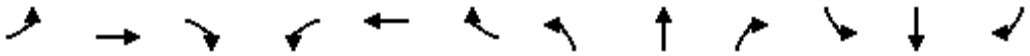
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 52 | 140 | 52 | 10 | 150 | 42 | 78 | 518 | 26 | 69 | 583 | 200 |
| Future Volume (vph) | 52 | 140 | 52 | 10 | 150 | 42 | 78 | 518 | 26 | 69 | 583 | 200 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 11 | 12 | 12 | 16 | 12 | 10 | 10 | 10 | 10 | 10 | 10 |
| Total Lost time (s) | | 5.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 0.95 | | | 1.00 | | | 0.95 | | | 0.95 | |
| Frpb, ped/bikes | | 0.96 | | | 0.97 | | | 1.00 | | | 0.97 | |
| Flpb, ped/bikes | | 0.99 | | | 0.99 | | | 1.00 | | | 1.00 | |
| Frt | | 0.97 | | | 0.97 | | | 0.99 | | | 0.96 | |
| Flt Protected | | 0.99 | | | 1.00 | | | 0.99 | | | 1.00 | |
| Satd. Flow (prot) | | 2569 | | | 1555 | | | 2831 | | | 2640 | |
| Flt Permitted | | 0.71 | | | 0.98 | | | 0.58 | | | 0.71 | |
| Satd. Flow (perm) | | 1847 | | | 1526 | | | 1646 | | | 1893 | |
| Peak-hour factor, PHF | 0.89 | 0.89 | 0.89 | 0.88 | 0.88 | 0.88 | 0.86 | 0.86 | 0.86 | 0.93 | 0.93 | 0.93 |
| Adj. Flow (vph) | 58 | 157 | 58 | 11 | 170 | 48 | 91 | 602 | 30 | 74 | 627 | 215 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 273 | 0 | 0 | 229 | 0 | 0 | 723 | 0 | 0 | 916 | 0 |
| Confl. Peds. (#/hr) | 61 | | 89 | 89 | | 61 | 154 | | 61 | 61 | | 154 |
| Confl. Bikes (#/hr) | | | 7 | | | 1 | | | 1 | | | 6 |
| Heavy Vehicles (%) | 2% | 9% | 0% | 0% | 6% | 0% | 0% | 0% | 3% | 13% | 0% | 1% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Turn Type | D.P+P | NA | | Perm | NA | | D.P+P | NA | | Perm | NA | |
| Protected Phases | 3 | 3 4 | | | 4 | | 5 | 1 5 | | | 1 | |
| Permitted Phases | 4 | | | 4 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 36.2 | | | 30.2 | | | 65.4 | | | 50.3 | |
| Effective Green, g (s) | | 36.2 | | | 30.2 | | | 65.4 | | | 50.3 | |
| Actuated g/C Ratio | | 0.26 | | | 0.22 | | | 0.47 | | | 0.36 | |
| Clearance Time (s) | | | | | 4.0 | | | | | | 4.0 | |
| Vehicle Extension (s) | | | | | 2.0 | | | | | | 2.0 | |
| Lane Grp Cap (vph) | | 515 | | | 333 | | | 909 | | | 689 | |
| v/s Ratio Prot | | c0.02 | | | | | | c0.09 | | | | |
| v/s Ratio Perm | | 0.12 | | | c0.15 | | | 0.29 | | | c0.48 | |
| v/c Ratio | | 0.53 | | | 0.69 | | | 0.80 | | | 1.33 | |
| Uniform Delay, d1 | | 43.7 | | | 49.6 | | | 30.7 | | | 43.9 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 3.9 | | | 11.0 | | | 7.1 | | | 158.1 | |
| Delay (s) | | 47.5 | | | 60.6 | | | 37.8 | | | 202.0 | |
| Level of Service | | D | | | E | | | D | | | F | |
| Approach Delay (s) | | 47.5 | | | 60.6 | | | 37.8 | | | 202.0 | |
| Approach LOS | | D | | | E | | | D | | | F | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 111.8 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 0.88 | | |
| Actuated Cycle Length (s) | 138.1 | Sum of lost time (s) | 21.0 |
| Intersection Capacity Utilization | 90.3% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 21 | 210 | 0 | 0 | 220 | 5 | 47 | 10 | 16 | 5 | 0 | 52 |
| Future Volume (vph) | 21 | 210 | 0 | 0 | 220 | 5 | 47 | 10 | 16 | 5 | 0 | 52 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 13 | 12 | 10 | 10 | 12 | 12 | 16 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | | | 0.997 | | | 0.906 | | | 0.877 | |
| Flt Protected | | 0.995 | | | | | 0.950 | | | | 0.996 | |
| Satd. Flow (prot) | 0 | 1462 | 0 | 0 | 1555 | 0 | 1338 | 1241 | 0 | 0 | 1496 | 0 |
| Flt Permitted | | 0.995 | | | | | 0.950 | | | | 0.996 | |
| Satd. Flow (perm) | 0 | 1462 | 0 | 0 | 1555 | 0 | 1338 | 1241 | 0 | 0 | 1496 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 1822 | | | 540 | | | 382 | | | 354 | |
| Travel Time (s) | | 41.4 | | | 12.3 | | | 8.7 | | | 8.0 | |
| Confl. Peds. (#/hr) | 8 | | 18 | 18 | | 8 | 13 | | 28 | 28 | | 13 |
| Confl. Bikes (#/hr) | | | 5 | | | 2 | | | 1 | | | |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.88 | 0.88 | 0.88 | 0.81 | 0.81 | 0.81 | 0.70 | 0.70 | 0.70 |
| Heavy Vehicles (%) | 32% | 2% | 0% | 0% | 2% | 0% | 2% | 13% | 0% | 0% | 0% | 2% |
| Parking (#/hr) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Adj. Flow (vph) | 25 | 247 | 0 | 0 | 250 | 6 | 58 | 12 | 20 | 7 | 0 | 74 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 272 | 0 | 0 | 256 | 0 | 58 | 32 | 0 | 0 | 81 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 10 | | | 10 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.30 | 1.14 | 1.14 | 1.25 | 1.14 | 1.42 | 1.42 | 1.14 | 1.14 | 1.12 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 48.7% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

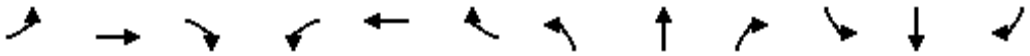


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 21 | 210 | 0 | 0 | 220 | 5 | 47 | 10 | 16 | 5 | 0 | 52 |
| Future Volume (Veh/h) | 21 | 210 | 0 | 0 | 220 | 5 | 47 | 10 | 16 | 5 | 0 | 52 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.88 | 0.88 | 0.88 | 0.81 | 0.81 | 0.81 | 0.70 | 0.70 | 0.70 |
| Hourly flow rate (vph) | 25 | 247 | 0 | 0 | 250 | 6 | 58 | 12 | 20 | 7 | 0 | 74 |
| Pedestrians | | 13 | | | 28 | | | 18 | | | 8 | |
| Lane Width (ft) | | 12.0 | | | 13.0 | | | 10.0 | | | 16.0 | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Percent Blockage | | 1 | | | 3 | | | 1 | | | 1 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 540 | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 264 | | | 265 | | | 655 | 579 | 293 | 612 | 576 | 274 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 264 | | | 265 | | | 655 | 579 | 293 | 612 | 576 | 274 |
| tC, single (s) | 4.4 | | | 4.1 | | | *6.5 | 6.6 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.5 | | | 2.2 | | | 3.5 | 4.1 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 100 | | | 84 | 97 | 97 | 98 | 100 | 90 |
| cM capacity (veh/h) | 1135 | | | 1294 | | | 362 | 394 | 723 | 362 | 412 | 750 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | SB 1 |
|---|---|---|---|---|---|
| Volume Total | 272 | 256 | 58 | 32 | 81 |
| Volume Left | 25 | 0 | 58 | 0 | 7 |
| Volume Right | 0 | 6 | 0 | 20 | 74 |
| cSH | 1135 | 1700 | 362 | 551 | 686 |
| Volume to Capacity | 0.02 | 0.15 | 0.16 | 0.06 | 0.12 |
| Queue Length 95th (ft) | 2 | 0 | 14 | 5 | 10 |
| Control Delay (s) | 1.0 | 0.0 | 16.8 | 11.9 | 10.9 |
| Lane LOS | A | | C | B | B |
| Approach Delay (s) | 1.0 | 0.0 | 15.1 | | 10.9 |
| Approach LOS | | | C | | B |

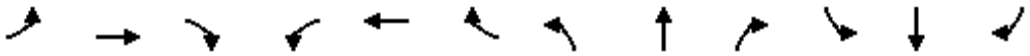
| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 3.6 | | | |
| Intersection Capacity Utilization | 48.7% | ICU Level of Service | | A |
| Analysis Period (min) | 15 | | | |

* User Entered Value



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 67 | 410 | 0 | 0 | 189 | 0 | 33 | 0 | 21 | 0 | 0 | 65 |
| Future Volume (vph) | 67 | 410 | 0 | 0 | 189 | 0 | 33 | 0 | 21 | 0 | 0 | 65 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 13 | 12 | 12 | 13 | 12 | 10 | 12 | 12 | 12 | 12 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | | | | | | 0.948 | | | 0.865 | |
| Flt Protected | | 0.993 | | | | | | 0.970 | | | | |
| Satd. Flow (prot) | 0 | 1740 | 0 | 0 | 1667 | 0 | 0 | 1544 | 0 | 0 | 1479 | 0 |
| Flt Permitted | | 0.993 | | | | | | 0.970 | | | | |
| Satd. Flow (perm) | 0 | 1740 | 0 | 0 | 1667 | 0 | 0 | 1544 | 0 | 0 | 1479 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 576 | | | 561 | | | 457 | | | 244 | |
| Travel Time (s) | | 13.1 | | | 12.8 | | | 10.4 | | | 5.5 | |
| Confl. Peds. (#/hr) | | | 13 | 13 | | | 134 | | 51 | | | |
| Confl. Bikes (#/hr) | | | 17 | | | | | | 2 | | | |
| Peak Hour Factor | 0.92 | 0.85 | 0.85 | 0.88 | 0.88 | 0.92 | 0.81 | 0.92 | 0.81 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 0% | 1% | 0% | 0% | 6% | 0% | 3% | 0% | 0% | 0% | 0% | 0% |
| Adj. Flow (vph) | 73 | 482 | 0 | 0 | 215 | 0 | 41 | 0 | 26 | 0 | 0 | 71 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 555 | 0 | 0 | 215 | 0 | 0 | 67 | 0 | 0 | 71 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.10 | 1.14 | 1.14 | 1.10 | 1.14 | 1.25 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |

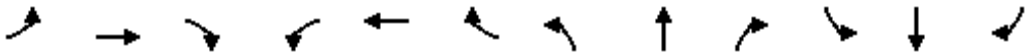
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 62.2% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 67 | 410 | 0 | 0 | 189 | 0 | 33 | 0 | 21 | 0 | 0 | 65 |
| Future Volume (Veh/h) | 67 | 410 | 0 | 0 | 189 | 0 | 33 | 0 | 21 | 0 | 0 | 65 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.92 | 0.85 | 0.85 | 0.88 | 0.88 | 0.92 | 0.81 | 0.92 | 0.81 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 73 | 482 | 0 | 0 | 215 | 0 | 41 | 0 | 26 | 0 | 0 | 71 |
| Pedestrians | | 134 | | | 51 | | | 13 | | | | |
| Lane Width (ft) | | 13.0 | | | 13.0 | | | 12.0 | | | | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | | |
| Percent Blockage | | 12 | | | 5 | | | 1 | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 576 | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 215 | | | 495 | | | 1061 | 856 | 546 | 920 | 856 | 349 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 215 | | | 495 | | | 1061 | 856 | 546 | 920 | 856 | 349 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 95 | | | 100 | | | 72 | 100 | 95 | 100 | 100 | 88 |
| cM capacity (veh/h) | 1367 | | | 1067 | | | 147 | 278 | 511 | 218 | 278 | 614 |

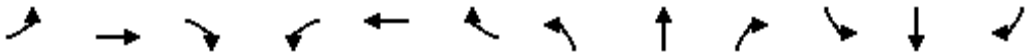
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 555 | 215 | 67 | 71 |
| Volume Left | 73 | 0 | 41 | 0 |
| Volume Right | 0 | 0 | 26 | 71 |
| cSH | 1367 | 1700 | 203 | 614 |
| Volume to Capacity | 0.05 | 0.13 | 0.33 | 0.12 |
| Queue Length 95th (ft) | 4 | 0 | 34 | 10 |
| Control Delay (s) | 1.5 | 0.0 | 31.2 | 11.6 |
| Lane LOS | A | | D | B |
| Approach Delay (s) | 1.5 | 0.0 | 31.2 | 11.6 |
| Approach LOS | | | D | B |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 4.1 | | | |
| Intersection Capacity Utilization | 62.2% | ICU Level of Service | B | |
| Analysis Period (min) | 15 | | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 26 | 392 | 0 | 0 | 183 | 85 | 36 | 37 | 18 | 367 | 0 | 66 |
| Future Volume (vph) | 26 | 392 | 0 | 0 | 183 | 85 | 36 | 37 | 18 | 367 | 0 | 66 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 15 | 12 | 12 | 16 | 12 | 12 | 16 | 12 | 12 | 14 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | | | 0.957 | | | 0.973 | | | 0.979 | |
| Flt Protected | | 0.997 | | | | | | 0.981 | | | 0.959 | |
| Satd. Flow (prot) | 0 | 1630 | 0 | 0 | 1801 | 0 | 0 | 1764 | 0 | 0 | 1705 | 0 |
| Flt Permitted | | 0.997 | | | | | | 0.981 | | | 0.959 | |
| Satd. Flow (perm) | 0 | 1630 | 0 | 0 | 1801 | 0 | 0 | 1764 | 0 | 0 | 1705 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 848 | | | 1822 | | | 402 | | | 2052 | |
| Travel Time (s) | | 19.3 | | | 41.4 | | | 9.1 | | | 46.6 | |
| Confl. Peds. (#/hr) | 4 | | | 5 | | 4 | 1 | | 24 | 24 | | 1 |
| Confl. Bikes (#/hr) | | | 5 | | | 1 | | | 1 | | | 5 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.93 | 0.93 | 0.93 | 0.87 | 0.87 | 0.87 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 12% | 3% | 0% | 0% | 3% | 3% | 3% | 9% | 0% | 0% | 0% | 3% |
| Parking (#/hr) | | 0 | 0 | | | | | | | | | |
| Adj. Flow (vph) | 30 | 445 | 0 | 0 | 197 | 91 | 41 | 43 | 21 | 395 | 0 | 71 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 475 | 0 | 0 | 288 | 0 | 0 | 105 | 0 | 0 | 466 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.16 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 1.05 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |

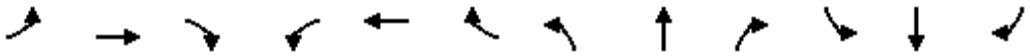
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 84.9% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 26 | 392 | 0 | 0 | 183 | 85 | 36 | 37 | 18 | 367 | 0 | 66 |
| Future Volume (Veh/h) | 26 | 392 | 0 | 0 | 183 | 85 | 36 | 37 | 18 | 367 | 0 | 66 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.93 | 0.93 | 0.93 | 0.87 | 0.87 | 0.87 | 0.93 | 0.93 | 0.93 |
| Hourly flow rate (vph) | 30 | 445 | 0 | 0 | 197 | 91 | 41 | 43 | 21 | 395 | 0 | 71 |
| Pedestrians | | 1 | | | 24 | | | 5 | | | 4 | |
| Lane Width (ft) | | 15.0 | | | 16.0 | | | 16.0 | | | 14.0 | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Percent Blockage | | 0 | | | 3 | | | 1 | | | 0 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 292 | | | 450 | | | 824 | 802 | 474 | 818 | 756 | 248 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 292 | | | 450 | | | 824 | 802 | 474 | 818 | 756 | 248 |
| tC, single (s) | 4.2 | | | 4.1 | | | 7.1 | 6.6 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.3 | | | 2.2 | | | 3.5 | 4.1 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 100 | | | 84 | 86 | 96 | 0 | 100 | 91 |
| cM capacity (veh/h) | 1210 | | | 1115 | | | 256 | 299 | 575 | 241 | 328 | 785 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 475 | 288 | 105 | 466 |
| Volume Left | 30 | 0 | 41 | 395 |
| Volume Right | 0 | 91 | 21 | 71 |
| cSH | 1210 | 1115 | 308 | 269 |
| Volume to Capacity | 0.02 | 0.00 | 0.34 | 1.73 |
| Queue Length 95th (ft) | 2 | 0 | 37 | 759 |
| Control Delay (s) | 0.8 | 0.0 | 22.6 | 376.8 |
| Lane LOS | A | | C | F |
| Approach Delay (s) | 0.8 | 0.0 | 22.6 | 376.8 |
| Approach LOS | | | C | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 133.7 | | |
| Intersection Capacity Utilization | 84.9% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 16 | 21 | 0 | 5 | 21 | 42 | 21 | 564 | 16 | 21 | 567 | 16 |
| Future Volume (vph) | 16 | 21 | 0 | 5 | 21 | 42 | 21 | 564 | 16 | 21 | 567 | 16 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | 0.97 | | | 0.91 | | | 1.00 | | | 0.99 | |
| Frt | | | | | 0.917 | | | 0.996 | | | 0.996 | |
| Flt Protected | | 0.979 | | | 0.996 | | | 0.998 | | | 0.998 | |
| Satd. Flow (prot) | 0 | 1406 | 0 | 0 | 1200 | 0 | 0 | 1408 | 0 | 0 | 1408 | 0 |
| Flt Permitted | | 0.864 | | | 0.981 | | | 0.972 | | | 0.972 | |
| Satd. Flow (perm) | 0 | 1201 | 0 | 0 | 1173 | 0 | 0 | 1369 | 0 | 0 | 1371 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | 66 | | | 2 | | | 2 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 659 | | | 649 | | | 380 | | | 618 | |
| Travel Time (s) | | 15.0 | | | 14.8 | | | 8.6 | | | 14.0 | |
| Confl. Peds. (#/hr) | 33 | | 29 | 29 | | 33 | 143 | | 60 | 60 | | 143 |
| Confl. Bikes (#/hr) | | | | | | | | | 1 | | | 7 |
| Peak Hour Factor | 0.80 | 0.80 | 0.80 | 0.52 | 0.52 | 0.52 | 0.95 | 0.95 | 0.95 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% | 8% | 0% | 1% | 0% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Adj. Flow (vph) | 20 | 26 | 0 | 10 | 40 | 81 | 22 | 594 | 17 | 21 | 579 | 16 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 46 | 0 | 0 | 131 | 0 | 0 | 633 | 0 | 0 | 616 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |

| Lane Group | Ø2 |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | |
| Future Volume (vph) | |
| Ideal Flow (vphpl) | |
| Lane Width (ft) | |
| Lane Util. Factor | |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Right Turn on Red | |
| Satd. Flow (RTOR) | |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | |
| Heavy Vehicles (%) | |
| Parking (#/hr) | |
| Adj. Flow (vph) | |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | |
| Enter Blocked Intersection | |
| Lane Alignment | |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | |
| Turning Speed (mph) | |
| Number of Detectors | |
| Detector Template | |
| Leading Detector (ft) | |
| Trailing Detector (ft) | |
| Detector 1 Position(ft) | |
| Detector 1 Size(ft) | |
| Detector 1 Type | |
| Detector 1 Channel | |
| Detector 1 Extend (s) | |
| Detector 1 Queue (s) | |
| Detector 1 Delay (s) | |
| Detector 2 Position(ft) | |
| Detector 2 Size(ft) | |
| Detector 2 Type | |
| Detector 2 Channel | |
| Detector 2 Extend (s) | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Detector Phase | 5 | 5 | | 5 | 5 | | 1 | 1 | | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | |
| Minimum Split (s) | 12.0 | 12.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Total Split (s) | 18.0 | 18.0 | | 18.0 | 18.0 | | 54.0 | 54.0 | | 54.0 | 54.0 | |
| Total Split (%) | 17.6% | 17.6% | | 17.6% | 17.6% | | 52.9% | 52.9% | | 52.9% | 52.9% | |
| Maximum Green (s) | 14.0 | 14.0 | | 14.0 | 14.0 | | 50.0 | 50.0 | | 50.0 | 50.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Lost Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lead/Lag | | | | | | | Lead | Lead | | Lead | Lead | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | Max | Max | | Max | Max | | Max | Max | | Max | Max | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 14.3 | | | 14.3 | | | 51.0 | | | 51.0 | |
| Actuated g/C Ratio | | 0.15 | | | 0.15 | | | 0.53 | | | 0.53 | |
| v/c Ratio | | 0.26 | | | 0.57 | | | 0.87 | | | 0.84 | |
| Control Delay | | 43.9 | | | 32.9 | | | 37.7 | | | 35.3 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 43.9 | | | 32.9 | | | 37.7 | | | 35.3 | |
| LOS | | D | | | C | | | D | | | D | |
| Approach Delay | | 43.9 | | | 32.9 | | | 37.7 | | | 35.3 | |
| Approach LOS | | D | | | C | | | D | | | D | |

**Intersection Summary**

Area Type: CBD
Cycle Length: 102
Actuated Cycle Length: 96
Natural Cycle: 90
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 36.4 Intersection LOS: D
Intersection Capacity Utilization 58.0% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 11: L Street & E 5th Street



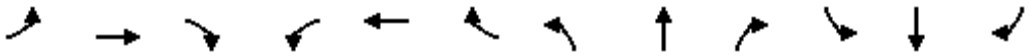
| Lane Group | Ø2 |
|---|---|
| Turn Type | |
| Protected Phases | 2 |
| Permitted Phases | |
| Detector Phase | |
| Switch Phase | |
| Minimum Initial (s) | 4.0 |
| Minimum Split (s) | 30.0 |
| Total Split (s) | 30.0 |
| Total Split (%) | 29% |
| Maximum Green (s) | 26.0 |
| Yellow Time (s) | 3.0 |
| All-Red Time (s) | 1.0 |
| Lost Time Adjust (s) | |
| Total Lost Time (s) | |
| Lead/Lag | Lag |
| Lead-Lag Optimize? | |
| Vehicle Extension (s) | 2.0 |
| Recall Mode | None |
| Walk Time (s) | 14.0 |
| Flash Dont Walk (s) | 12.0 |
| Pedestrian Calls (#/hr) | 66 |
| Act Effct Green (s) | |
| Actuated g/C Ratio | |
| v/c Ratio | |
| Control Delay | |
| Queue Delay | |
| Total Delay | |
| LOS | |
| Approach Delay | |
| Approach LOS | |

| Intersection Summary |
|---|

| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 46 | 131 | 633 | 616 |
| v/c Ratio | 0.26 | 0.57 | 0.87 | 0.84 |
| Control Delay | 43.9 | 32.9 | 37.7 | 35.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 43.9 | 32.9 | 37.7 | 35.3 |
| Queue Length 50th (ft) | 27 | 39 | 375 | 356 |
| Queue Length 95th (ft) | 55 | 36 | #622 | #596 |
| Internal Link Dist (ft) | 579 | 569 | 300 | 538 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 178 | 230 | 728 | 729 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.26 | 0.57 | 0.87 | 0.84 |

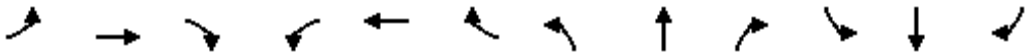
Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 16 | 21 | 0 | 5 | 21 | 42 | 21 | 564 | 16 | 21 | 567 | 16 |
| Future Volume (vph) | 16 | 21 | 0 | 5 | 21 | 42 | 21 | 564 | 16 | 21 | 567 | 16 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Total Lost time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Frpb, ped/bikes | | 1.00 | | | 0.92 | | | 1.00 | | | 1.00 | |
| Flpb, ped/bikes | | 0.97 | | | 0.99 | | | 1.00 | | | 1.00 | |
| Frt | | 1.00 | | | 0.92 | | | 1.00 | | | 1.00 | |
| Flt Protected | | 0.98 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | | 1363 | | | 1198 | | | 1407 | | | 1409 | |
| Flt Permitted | | 0.86 | | | 0.98 | | | 0.97 | | | 0.97 | |
| Satd. Flow (perm) | | 1202 | | | 1179 | | | 1370 | | | 1372 | |
| Peak-hour factor, PHF | 0.80 | 0.80 | 0.80 | 0.52 | 0.52 | 0.52 | 0.95 | 0.95 | 0.95 | 0.98 | 0.98 | 0.98 |
| Adj. Flow (vph) | 20 | 26 | 0 | 10 | 40 | 81 | 22 | 594 | 17 | 21 | 579 | 16 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 56 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| Lane Group Flow (vph) | 0 | 46 | 0 | 0 | 75 | 0 | 0 | 632 | 0 | 0 | 615 | 0 |
| Confl. Peds. (#/hr) | 33 | | 29 | 29 | | 33 | 143 | | 60 | 60 | | 143 |
| Confl. Bikes (#/hr) | | | | | | | | | 1 | | | 7 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% | 8% | 0% | 1% | 0% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 14.3 | | | 14.3 | | | 51.0 | | | 51.0 | |
| Effective Green, g (s) | | 14.3 | | | 14.3 | | | 51.0 | | | 51.0 | |
| Actuated g/C Ratio | | 0.15 | | | 0.15 | | | 0.53 | | | 0.53 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | | | 2.0 | | | 2.0 | |
| Lane Grp Cap (vph) | | 177 | | | 173 | | | 721 | | | 722 | |
| v/s Ratio Prot | | | | | | | | | | | | |
| v/s Ratio Perm | | 0.04 | | | c0.06 | | | c0.46 | | | 0.45 | |
| v/c Ratio | | 0.26 | | | 0.43 | | | 0.88 | | | 0.85 | |
| Uniform Delay, d1 | | 36.6 | | | 37.6 | | | 20.2 | | | 19.7 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 3.5 | | | 7.7 | | | 14.1 | | | 12.1 | |
| Delay (s) | | 40.1 | | | 45.3 | | | 34.3 | | | 31.8 | |
| Level of Service | | D | | | D | | | C | | | C | |
| Approach Delay (s) | | 40.1 | | | 45.3 | | | 34.3 | | | 31.8 | |
| Approach LOS | | D | | | D | | | C | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 34.4 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.60 | | |
| Actuated Cycle Length (s) | 96.9 | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 58.0% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 21 | 26 | 16 | 5 | 16 | 10 | 16 | 512 | 16 | 21 | 468 | 27 |
| Future Volume (vph) | 21 | 26 | 16 | 5 | 16 | 10 | 16 | 512 | 16 | 21 | 468 | 27 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 16 | 12 | 12 | 15 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | 0.96 | | | 0.97 | | | 1.00 | | | 0.99 | |
| Frt | | 0.966 | | | 0.958 | | | 0.996 | | | 0.993 | |
| Flt Protected | | 0.984 | | | 0.992 | | | 0.999 | | | 0.998 | |
| Satd. Flow (prot) | 0 | 1488 | 0 | 0 | 1518 | 0 | 0 | 1584 | 0 | 0 | 1551 | 0 |
| Flt Permitted | | 0.921 | | | 0.968 | | | 0.981 | | | 0.969 | |
| Satd. Flow (perm) | 0 | 1377 | 0 | 0 | 1461 | 0 | 0 | 1553 | 0 | 0 | 1505 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 18 | | | 11 | | | 4 | | | 7 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 602 | | | 677 | | | 676 | | | 535 | |
| Travel Time (s) | | 13.7 | | | 15.4 | | | 15.4 | | | 12.2 | |
| Confl. Peds. (#/hr) | 15 | | 38 | 38 | | 15 | 58 | | 32 | 32 | | 58 |
| Confl. Bikes (#/hr) | | | | | | | | | 1 | | | 2 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.89 | 0.89 | 0.89 | 0.87 | 0.87 | 0.87 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 10% | 12% | 0% | 0% | 8% | 0% | 0% | 0% | 0% | 0% | 1% | 4% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | | | | | |
| Adj. Flow (vph) | 24 | 30 | 18 | 6 | 18 | 11 | 18 | 589 | 18 | 23 | 520 | 30 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 72 | 0 | 0 | 35 | 0 | 0 | 625 | 0 | 0 | 573 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.12 | 1.14 | 1.14 | 1.16 | 1.14 | 1.14 | 1.25 | 1.14 | 1.14 | 1.25 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Detector Phase | 5 | 5 | | 5 | 5 | | 1 | 1 | | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 6.0 | 6.0 | | 6.0 | 6.0 | | 20.0 | 20.0 | | 20.0 | 20.0 | |
| Minimum Split (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 24.0 | 24.0 | | 24.0 | 24.0 | |
| Total Split (s) | 24.0 | 24.0 | | 24.0 | 24.0 | | 54.0 | 54.0 | | 54.0 | 54.0 | |
| Total Split (%) | 30.8% | 30.8% | | 30.8% | 30.8% | | 69.2% | 69.2% | | 69.2% | 69.2% | |
| Maximum Green (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 50.0 | 50.0 | | 50.0 | 50.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Lost Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | Max | Max | | Max | Max | | Max | Max | | Max | Max | |
| Walk Time (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | |
| Flash Dont Walk (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | |
| Pedestrian Calls (#/hr) | 13 | 13 | | 13 | 13 | | 23 | 23 | | 23 | 23 | |
| Act Effct Green (s) | | 20.0 | | | 20.0 | | | 50.0 | | | 50.0 | |
| Actuated g/C Ratio | | 0.26 | | | 0.26 | | | 0.64 | | | 0.64 | |
| v/c Ratio | | 0.20 | | | 0.09 | | | 0.63 | | | 0.59 | |
| Control Delay | | 19.7 | | | 17.8 | | | 11.9 | | | 11.2 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 19.7 | | | 17.8 | | | 11.9 | | | 11.2 | |
| LOS | | B | | | B | | | B | | | B | |
| Approach Delay | | 19.7 | | | 17.8 | | | 11.9 | | | 11.2 | |
| Approach LOS | | B | | | B | | | B | | | B | |

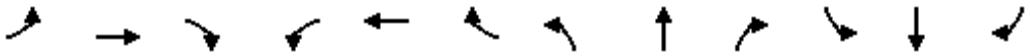
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 78 | | | |
| Actuated Cycle Length: 78 | | | |
| Natural Cycle: 55 | | | |
| Control Type: Semi Act-Uncoord | | | |
| Maximum v/c Ratio: 0.63 | | | |
| Intersection Signal Delay: 12.2 | | Intersection LOS: B | |
| Intersection Capacity Utilization 59.8% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 12: L Street & E 8th Street



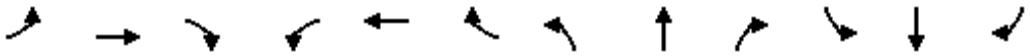
| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 72 | 35 | 625 | 573 |
| v/c Ratio | 0.20 | 0.09 | 0.63 | 0.59 |
| Control Delay | 19.7 | 17.8 | 11.9 | 11.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 19.7 | 17.8 | 11.9 | 11.2 |
| Queue Length 50th (ft) | 20 | 9 | 159 | 139 |
| Queue Length 95th (ft) | 51 | 30 | 242 | 230 |
| Internal Link Dist (ft) | 522 | 597 | 596 | 455 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 366 | 382 | 996 | 967 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.20 | 0.09 | 0.63 | 0.59 |

Intersection Summary



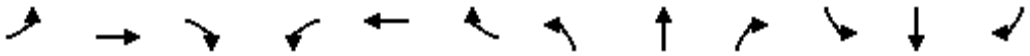
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 21 | 26 | 16 | 5 | 16 | 10 | 16 | 512 | 16 | 21 | 468 | 27 |
| Future Volume (vph) | 21 | 26 | 16 | 5 | 16 | 10 | 16 | 512 | 16 | 21 | 468 | 27 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 16 | 12 | 12 | 15 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Total Lost time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Frpb, ped/bikes | | 0.97 | | | 0.98 | | | 1.00 | | | 0.99 | |
| Flpb, ped/bikes | | 0.99 | | | 0.99 | | | 1.00 | | | 1.00 | |
| Frt | | 0.97 | | | 0.96 | | | 1.00 | | | 0.99 | |
| Flt Protected | | 0.98 | | | 0.99 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | | 1471 | | | 1496 | | | 1581 | | | 1549 | |
| Flt Permitted | | 0.92 | | | 0.97 | | | 0.98 | | | 0.97 | |
| Satd. Flow (perm) | | 1377 | | | 1461 | | | 1554 | | | 1505 | |
| Peak-hour factor, PHF | 0.88 | 0.88 | 0.88 | 0.89 | 0.89 | 0.89 | 0.87 | 0.87 | 0.87 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 24 | 30 | 18 | 6 | 18 | 11 | 18 | 589 | 18 | 23 | 520 | 30 |
| RTOR Reduction (vph) | 0 | 13 | 0 | 0 | 8 | 0 | 0 | 1 | 0 | 0 | 3 | 0 |
| Lane Group Flow (vph) | 0 | 59 | 0 | 0 | 27 | 0 | 0 | 624 | 0 | 0 | 570 | 0 |
| Confl. Peds. (#/hr) | 15 | | 38 | 38 | | 15 | 58 | | 32 | 32 | | 58 |
| Confl. Bikes (#/hr) | | | | | | | | | 1 | | | 2 |
| Heavy Vehicles (%) | 10% | 12% | 0% | 0% | 8% | 0% | 0% | 0% | 0% | 0% | 1% | 4% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 20.0 | | | 20.0 | | | 50.0 | | | 50.0 | |
| Effective Green, g (s) | | 20.0 | | | 20.0 | | | 50.0 | | | 50.0 | |
| Actuated g/C Ratio | | 0.26 | | | 0.26 | | | 0.64 | | | 0.64 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | | | 2.0 | | | 2.0 | |
| Lane Grp Cap (vph) | | 353 | | | 374 | | | 996 | | | 964 | |
| v/s Ratio Prot | | | | | | | | | | | | |
| v/s Ratio Perm | | c0.04 | | | 0.02 | | | c0.40 | | | 0.38 | |
| v/c Ratio | | 0.17 | | | 0.07 | | | 0.63 | | | 0.59 | |
| Uniform Delay, d1 | | 22.5 | | | 22.0 | | | 8.4 | | | 8.1 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 1.0 | | | 0.4 | | | 3.0 | | | 2.7 | |
| Delay (s) | | 23.5 | | | 22.3 | | | 11.4 | | | 10.8 | |
| Level of Service | | C | | | C | | | B | | | B | |
| Approach Delay (s) | | 23.5 | | | 22.3 | | | 11.4 | | | 10.8 | |
| Approach LOS | | C | | | C | | | B | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 12.1 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.49 | | |
| Actuated Cycle Length (s) | 78.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 59.8% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 5 | 5 | 0 | 0 | 16 | 16 | 5 | 507 | 5 | 5 | 442 | 21 |
| Future Volume (vph) | 5 | 5 | 0 | 0 | 16 | 16 | 5 | 507 | 5 | 5 | 442 | 21 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | 0.932 | | | 0.999 | | | 0.994 | |
| Flt Protected | | 0.976 | | | | | | | | | | |
| Satd. Flow (prot) | 0 | 1854 | 0 | 0 | 1771 | 0 | 0 | 1898 | 0 | 0 | 1889 | 0 |
| Flt Permitted | | 0.976 | | | | | | | | | | |
| Satd. Flow (perm) | 0 | 1854 | 0 | 0 | 1771 | 0 | 0 | 1898 | 0 | 0 | 1889 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 239 | | | 189 | | | 91 | | | 676 | |
| Travel Time (s) | | 5.4 | | | 4.3 | | | 2.1 | | | 15.4 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 5 | 5 | 0 | 0 | 17 | 17 | 5 | 551 | 5 | 5 | 480 | 23 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 10 | 0 | 0 | 34 | 0 | 0 | 561 | 0 | 0 | 508 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |

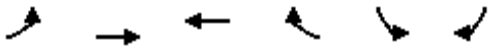
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 41.4% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |



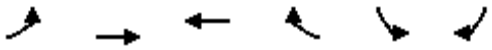
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 5 | 5 | 0 | 0 | 16 | 16 | 5 | 507 | 5 | 5 | 442 | 21 |
| Future Volume (Veh/h) | 5 | 5 | 0 | 0 | 16 | 16 | 5 | 507 | 5 | 5 | 442 | 21 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 5 | 5 | 0 | 0 | 17 | 17 | 5 | 551 | 5 | 5 | 480 | 23 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | 676 | |
| pX, platoon unblocked | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | | 0.85 | | | | | |
| vC, conflicting volume | 1090 | 1068 | 492 | 1068 | 1076 | 554 | 503 | | | 556 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1020 | 993 | 318 | 993 | 1003 | 554 | 331 | | | 556 | | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 97 | 98 | 100 | 100 | 92 | 97 | 100 | | | 100 | | |
| cM capacity (veh/h) | 167 | 209 | 621 | 188 | 206 | 536 | 1057 | | | 1025 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 10 | 34 | 561 | 508 |
| Volume Left | 5 | 0 | 5 | 5 |
| Volume Right | 0 | 17 | 5 | 23 |
| cSH | 185 | 298 | 1057 | 1025 |
| Volume to Capacity | 0.05 | 0.11 | 0.00 | 0.00 |
| Queue Length 95th (ft) | 4 | 10 | 0 | 0 |
| Control Delay (s) | 25.5 | 18.6 | 0.1 | 0.1 |
| Lane LOS | D | C | A | A |
| Approach Delay (s) | 25.5 | 18.6 | 0.1 | 0.1 |
| Approach LOS | D | C | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 0.9 | | | |
| Intersection Capacity Utilization | 41.4% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR | Ø2 |
|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | |
| Traffic Volume (vph) | 507 | 399 | 362 | 10 | 0 | 0 | |
| Future Volume (vph) | 507 | 399 | 362 | 10 | 0 | 0 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Lane Util. Factor | 0.95 | 0.95 | 0.95 | 0.95 | 1.00 | 1.00 | |
| Frt | | | 0.996 | | | | |
| Flt Protected | | 0.973 | | | | | |
| Satd. Flow (prot) | 0 | 3513 | 3596 | 0 | 0 | 0 | |
| Flt Permitted | | 0.630 | | | | | |
| Satd. Flow (perm) | 0 | 2274 | 3596 | 0 | 0 | 0 | |
| Right Turn on Red | | | | Yes | | Yes | |
| Satd. Flow (RTOR) | | | 6 | | | | |
| Link Speed (mph) | | 30 | 30 | | 30 | | |
| Link Distance (ft) | | 336 | 398 | | 184 | | |
| Travel Time (s) | | 7.6 | 9.0 | | 4.2 | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | |
| Adj. Flow (vph) | 551 | 434 | 393 | 11 | 0 | 0 | |
| Shared Lane Traffic (%) | | | | | | | |
| Lane Group Flow (vph) | 0 | 985 | 404 | 0 | 0 | 0 | |
| Enter Blocked Intersection | No | No | No | No | No | No | |
| Lane Alignment | Left | Left | Left | Right | Left | Right | |
| Median Width(ft) | | 0 | 0 | | 0 | | |
| Link Offset(ft) | | 0 | 0 | | 0 | | |
| Crosswalk Width(ft) | | 16 | 16 | | 16 | | |
| Two way Left Turn Lane | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Turning Speed (mph) | 15 | | | 9 | 15 | 9 | |
| Number of Detectors | 1 | 2 | 2 | | | | |
| Detector Template | Left | Thru | Thru | | | | |
| Leading Detector (ft) | 20 | 100 | 100 | | | | |
| Trailing Detector (ft) | 0 | 0 | 0 | | | | |
| Detector 1 Position(ft) | 0 | 0 | 0 | | | | |
| Detector 1 Size(ft) | 20 | 6 | 6 | | | | |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | | | | |
| Detector 1 Channel | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | | | | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | | | | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | | | | |
| Detector 2 Position(ft) | | 94 | 94 | | | | |
| Detector 2 Size(ft) | | 6 | 6 | | | | |
| Detector 2 Type | | Cl+Ex | Cl+Ex | | | | |
| Detector 2 Channel | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | 0.0 | | | | |
| Turn Type | Perm | NA | NA | | | | |
| Protected Phases | | 1 | 1 | | | | 2 |
| Permitted Phases | 1 | | | | | | |
| Detector Phase | 1 | 1 | 1 | | | | |
| Switch Phase | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | 8.0 | | | | 10.0 |



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR | Ø2 |
|---|---|---|---|---|---|---|---|
| Minimum Split (s) | 25.4 | 25.4 | 25.4 | | | | 25.0 |
| Total Split (s) | 70.0 | 70.0 | 70.0 | | | | 25.0 |
| Total Split (%) | 73.7% | 73.7% | 73.7% | | | | 26% |
| Maximum Green (s) | 62.6 | 62.6 | 62.6 | | | | 20.5 |
| Yellow Time (s) | 5.4 | 5.4 | 5.4 | | | | 3.5 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | | | 1.0 |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | | | |
| Total Lost Time (s) | | 7.4 | 7.4 | | | | |
| Lead/Lag | Lead | Lead | Lead | | | | Lag |
| Lead-Lag Optimize? | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | | | | 2.0 |
| Recall Mode | Max | Max | Max | | | | None |
| Walk Time (s) | | | | | | | 18.0 |
| Flash Dont Walk (s) | | | | | | | 1.0 |
| Pedestrian Calls (#/hr) | | | | | | | 28 |
| Act Effct Green (s) | | 83.6 | 83.6 | | | | |
| Actuated g/C Ratio | | 0.89 | 0.89 | | | | |
| v/c Ratio | | 0.49 | 0.13 | | | | |
| Control Delay | | 5.1 | 2.7 | | | | |
| Queue Delay | | 0.0 | 0.0 | | | | |
| Total Delay | | 5.1 | 2.7 | | | | |
| LOS | | A | A | | | | |
| Approach Delay | | 5.1 | 2.7 | | | | |
| Approach LOS | | A | A | | | | |

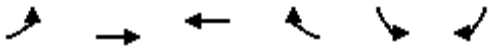
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 95 | | | |
| Actuated Cycle Length: 94.4 | | | |
| Natural Cycle: 60 | | | |
| Control Type: Semi Act-Uncoord | | | |
| Maximum v/c Ratio: 0.49 | | | |
| Intersection Signal Delay: 4.4 | | Intersection LOS: A | |
| Intersection Capacity Utilization 50.7% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 14: Day Blvd Ped



| Lane Group | EBT | WBT |
|---|---|---|
| Lane Group Flow (vph) | 985 | 404 |
| v/c Ratio | 0.49 | 0.13 |
| Control Delay | 5.1 | 2.7 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 5.1 | 2.7 |
| Queue Length 50th (ft) | 0 | 0 |
| Queue Length 95th (ft) | 213 | 56 |
| Internal Link Dist (ft) | 256 | 318 |
| Turn Bay Length (ft) | | |
| Base Capacity (vph) | 2015 | 3187 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.49 | 0.13 |

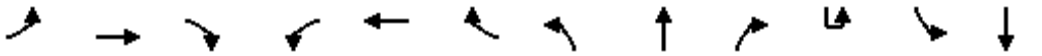
Intersection Summary



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 507 | 399 | 362 | 10 | 0 | 0 |
| Future Volume (vph) | 507 | 399 | 362 | 10 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 7.4 | 7.4 | | | |
| Lane Util. Factor | | 0.95 | 0.95 | | | |
| Frt | | 1.00 | 1.00 | | | |
| Flt Protected | | 0.97 | 1.00 | | | |
| Satd. Flow (prot) | | 3512 | 3595 | | | |
| Flt Permitted | | 0.63 | 1.00 | | | |
| Satd. Flow (perm) | | 2276 | 3595 | | | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 551 | 434 | 393 | 11 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 1 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 985 | 403 | 0 | 0 | 0 |
| Turn Type | Perm | NA | NA | | | |
| Protected Phases | | 1 | 1 | | | |
| Permitted Phases | 1 | | | | | |
| Actuated Green, G (s) | | 78.7 | 78.7 | | | |
| Effective Green, g (s) | | 78.7 | 78.7 | | | |
| Actuated g/C Ratio | | 0.81 | 0.81 | | | |
| Clearance Time (s) | | 7.4 | 7.4 | | | |
| Vehicle Extension (s) | | 2.0 | 2.0 | | | |
| Lane Grp Cap (vph) | | 1842 | 2910 | | | |
| v/s Ratio Prot | | | 0.11 | | | |
| v/s Ratio Perm | | c0.43 | | | | |
| v/c Ratio | | 0.53 | 0.14 | | | |
| Uniform Delay, d1 | | 3.1 | 2.0 | | | |
| Progression Factor | | 1.00 | 1.00 | | | |
| Incremental Delay, d2 | | 1.1 | 0.1 | | | |
| Delay (s) | | 4.2 | 2.1 | | | |
| Level of Service | | A | A | | | |
| Approach Delay (s) | | 4.2 | 2.1 | | 0.0 | |
| Approach LOS | | A | A | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 3.6 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.49 | | |
| Actuated Cycle Length (s) | 97.2 | Sum of lost time (s) | 11.9 |
| Intersection Capacity Utilization | 50.7% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBU | SBL | SBT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 144 | 99 | 5 | 151 | 54 | 115 | 11 | 942 | 336 | 5 | 356 | 485 |
| Future Volume (vph) | 144 | 99 | 5 | 151 | 54 | 115 | 11 | 942 | 336 | 5 | 356 | 485 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 14 | 12 | 12 | 13 | 16 | 10 | 11 | 12 | 12 | 13 | 12 |
| Storage Length (ft) | 0 | | 0 | 350 | | 0 | 70 | | 0 | | 350 | |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 0 | | 1 | |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | | 25 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 1.00 | 0.95 |
| Ped Bike Factor | | 0.98 | | | 0.99 | | 0.96 | 0.99 | | | 1.00 | 0.96 |
| Frt | | 0.997 | | | | 0.850 | | 0.961 | | | | 0.968 |
| Flt Protected | | 0.972 | | | 0.964 | | 0.950 | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 1594 | 0 | 0 | 1540 | 1458 | 1516 | 2796 | 0 | 0 | 1556 | 2716 |
| Flt Permitted | | 0.626 | | | 0.622 | | 0.155 | | | | 0.155 | |
| Satd. Flow (perm) | 0 | 1010 | 0 | 0 | 985 | 1458 | 237 | 2796 | 0 | 0 | 253 | 2716 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | |
| Satd. Flow (RTOR) | | 1 | | | | 134 | | 51 | | | | 43 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | | 30 |
| Link Distance (ft) | | 745 | | | 950 | | | 1523 | | | | 585 |
| Travel Time (s) | | 16.9 | | | 21.6 | | | 34.6 | | | | 13.3 |
| Confl. Peds. (#/hr) | 32 | | 17 | 17 | | 32 | 127 | | 36 | | 36 | |
| Confl. Bikes (#/hr) | | | 7 | | | 3 | | | 7 | | | |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.86 | 0.86 | 0.86 | 0.89 | 0.89 | 0.89 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 11% | 11% | 0% | 8% | 18% | 13% | 0% | 8% | 2% | 0% | 8% | 13% |
| Adj. Flow (vph) | 169 | 116 | 6 | 176 | 63 | 134 | 12 | 1058 | 378 | 5 | 379 | 516 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 291 | 0 | 0 | 239 | 134 | 12 | 1436 | 0 | 0 | 384 | 657 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | R NA | Left | Left |
| Median Width(ft) | | 0 | | | 6 | | | 13 | | | | 17 |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | | 0 |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | | 16 |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.05 | 1.14 | 1.14 | 1.10 | 0.97 | 1.25 | 1.19 | 1.14 | 1.14 | 1.10 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 9 | 15 | |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | | 1 | 1 | 2 |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | | Left | Left | Thru |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | 20 | 20 | 100 | | 20 | 20 | 100 |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | 20 | 20 | 6 | | 20 | 20 | 6 |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | | 94 |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | | 6 |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | Cl+Ex |

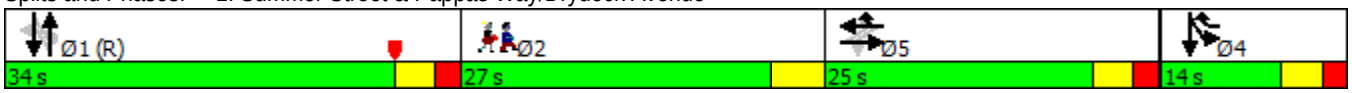


| Lane Group | SBR | Ø2 |
|---|---|---|
| Lane Configurations | | |
| Traffic Volume (vph) | 133 | |
| Future Volume (vph) | 133 | |
| Ideal Flow (vphpl) | 1900 | |
| Lane Width (ft) | 12 | |
| Storage Length (ft) | 0 | |
| Storage Lanes | 0 | |
| Taper Length (ft) | | |
| Lane Util. Factor | 0.95 | |
| Ped Bike Factor | | |
| Frt | | |
| Flt Protected | | |
| Satd. Flow (prot) | 0 | |
| Flt Permitted | | |
| Satd. Flow (perm) | 0 | |
| Right Turn on Red | Yes | |
| Satd. Flow (RTOR) | | |
| Link Speed (mph) | | |
| Link Distance (ft) | | |
| Travel Time (s) | | |
| Confl. Peds. (#/hr) | 127 | |
| Confl. Bikes (#/hr) | 12 | |
| Peak Hour Factor | 0.94 | |
| Heavy Vehicles (%) | 6% | |
| Adj. Flow (vph) | 141 | |
| Shared Lane Traffic (%) | | |
| Lane Group Flow (vph) | 0 | |
| Enter Blocked Intersection | No | |
| Lane Alignment | Right | |
| Median Width(ft) | | |
| Link Offset(ft) | | |
| Crosswalk Width(ft) | | |
| Two way Left Turn Lane | | |
| Headway Factor | 1.14 | |
| Turning Speed (mph) | 9 | |
| Number of Detectors | | |
| Detector Template | | |
| Leading Detector (ft) | | |
| Trailing Detector (ft) | | |
| Detector 1 Position(ft) | | |
| Detector 1 Size(ft) | | |
| Detector 1 Type | | |
| Detector 1 Channel | | |
| Detector 1 Extend (s) | | |
| Detector 1 Queue (s) | | |
| Detector 1 Delay (s) | | |
| Detector 2 Position(ft) | | |
| Detector 2 Size(ft) | | |
| Detector 2 Type | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBU | SBL | SBT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | 0.0 |
| Turn Type | Perm | NA | | Perm | NA | pt+ov | Perm | NA | | D.Pm | D.P+P | NA |
| Protected Phases | | 5 | | | 5 | 5 4 | | 1 | | | 4 | 1 4 |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | 1 | |
| Detector Phase | 5 | 5 | | 5 | 5 | 5 4 | 1 | 1 | | 1 | 4 | 1 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | |
| Minimum Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | | 13.0 | 13.0 | | 13.0 | 13.0 | |
| Total Split (s) | 25.0 | 25.0 | | 25.0 | 25.0 | | 34.0 | 34.0 | | 34.0 | 14.0 | |
| Total Split (%) | 25.0% | 25.0% | | 25.0% | 25.0% | | 34.0% | 34.0% | | 34.0% | 14.0% | |
| Maximum Green (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 29.0 | 29.0 | | 29.0 | 9.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | 0.0 | 0.0 | | | 0.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | 5.0 | 5.0 | | | 5.0 | |
| Lead/Lag | | | | | | | Lead | Lead | | Lead | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | None | None | | None | None | | C-Max | C-Max | | C-Max | None | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 41.6 | | | 41.6 | 55.6 | 29.0 | 29.0 | | | 38.0 | 43.0 |
| Actuated g/C Ratio | | 0.42 | | | 0.42 | 0.56 | 0.29 | 0.29 | | | 0.38 | 0.43 |
| v/c Ratio | | 0.69 | | | 0.58 | 0.15 | 0.18 | 1.70 | | | 1.80 | 0.55 |
| Control Delay | | 37.4 | | | 33.5 | 3.9 | 34.4 | 344.1 | | | 400.2 | 21.9 |
| Queue Delay | | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | | | 0.0 | 0.0 |
| Total Delay | | 37.4 | | | 33.5 | 3.9 | 34.4 | 344.1 | | | 400.2 | 21.9 |
| LOS | | D | | | C | A | C | F | | | F | C |
| Approach Delay | | 37.4 | | | 22.9 | | | 341.6 | | | | 161.5 |
| Approach LOS | | D | | | C | | | F | | | | F |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 100 | | | |
| Actuated Cycle Length: 100 | | | |
| Offset: 0 (0%), Referenced to phase 1:NBSB, Start of Yellow | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 1.80 | | | |
| Intersection Signal Delay: 216.3 | | Intersection LOS: F | |
| Intersection Capacity Utilization 106.4% | | ICU Level of Service G | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 1: Summer Street & Pappas Way/Drydock Avenue





| Lane Group | SBR | Ø2 |
|---|---|---|
| Detector 2 Channel | | |
| Detector 2 Extend (s) | | |
| Turn Type | | |
| Protected Phases | | 2 |
| Permitted Phases | | |
| Detector Phase | | |
| Switch Phase | | |
| Minimum Initial (s) | | 4.0 |
| Minimum Split (s) | | 27.0 |
| Total Split (s) | | 27.0 |
| Total Split (%) | | 27% |
| Maximum Green (s) | | 23.0 |
| Yellow Time (s) | | 4.0 |
| All-Red Time (s) | | 0.0 |
| Lost Time Adjust (s) | | |
| Total Lost Time (s) | | |
| Lead/Lag | | Lag |
| Lead-Lag Optimize? | | |
| Vehicle Extension (s) | | 2.0 |
| Recall Mode | | None |
| Walk Time (s) | | 7.0 |
| Flash Dont Walk (s) | | 16.0 |
| Pedestrian Calls (#/hr) | | 10 |
| Act Effct Green (s) | | |
| Actuated g/C Ratio | | |
| v/c Ratio | | |
| Control Delay | | |
| Queue Delay | | |
| Total Delay | | |
| LOS | | |
| Approach Delay | | |
| Approach LOS | | |

| Intersection Summary |
|---|

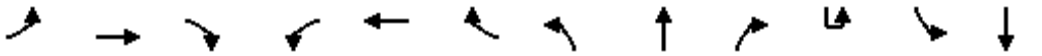


| Lane Group | EBT | WBT | WBR | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 291 | 239 | 134 | 12 | 1436 | 384 | 657 |
| v/c Ratio | 0.69 | 0.58 | 0.15 | 0.18 | 1.70 | 1.80 | 0.55 |
| Control Delay | 37.4 | 33.5 | 3.9 | 34.4 | 344.1 | 400.2 | 21.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 37.4 | 33.5 | 3.9 | 34.4 | 344.1 | 400.2 | 21.9 |
| Queue Length 50th (ft) | 133 | 103 | 0 | 6 | ~706 | ~324 | 149 |
| Queue Length 95th (ft) | #390 | #318 | 35 | 22 | #831 | #507 | 205 |
| Internal Link Dist (ft) | 665 | 870 | | | 1443 | | 505 |
| Turn Bay Length (ft) | | | | 70 | | 350 | |
| Base Capacity (vph) | 420 | 409 | 870 | 68 | 847 | 213 | 1192 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.69 | 0.58 | 0.15 | 0.18 | 1.70 | 1.80 | 0.55 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBU | SBL | SBT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 144 | 99 | 5 | 151 | 54 | 115 | 11 | 942 | 336 | 5 | 356 | 485 |
| Future Volume (vph) | 144 | 99 | 5 | 151 | 54 | 115 | 11 | 942 | 336 | 5 | 356 | 485 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 14 | 12 | 12 | 13 | 16 | 10 | 11 | 12 | 12 | 13 | 12 |
| Total Lost time (s) | | 5.0 | | | 5.0 | 5.0 | 5.0 | 5.0 | | | 5.0 | 5.0 |
| Lane Util. Factor | | 1.00 | | | 1.00 | 1.00 | 1.00 | 0.95 | | | 1.00 | 0.95 |
| Frpb, ped/bikes | | 1.00 | | | 1.00 | 1.00 | 1.00 | 0.98 | | | 1.00 | 0.96 |
| Flpb, ped/bikes | | 0.99 | | | 0.99 | 1.00 | 0.95 | 1.00 | | | 1.00 | 1.00 |
| Frt | | 1.00 | | | 1.00 | 0.85 | 1.00 | 0.96 | | | 1.00 | 0.97 |
| Flt Protected | | 0.97 | | | 0.96 | 1.00 | 0.95 | 1.00 | | | 0.95 | 1.00 |
| Satd. Flow (prot) | | 1580 | | | 1532 | 1458 | 1441 | 2791 | | | 1555 | 2708 |
| Flt Permitted | | 0.63 | | | 0.62 | 1.00 | 0.16 | 1.00 | | | 0.16 | 1.00 |
| Satd. Flow (perm) | | 1018 | | | 989 | 1458 | 235 | 2791 | | | 254 | 2708 |
| Peak-hour factor, PHF | 0.85 | 0.85 | 0.85 | 0.86 | 0.86 | 0.86 | 0.89 | 0.89 | 0.89 | 0.94 | 0.94 | 0.94 |
| Adj. Flow (vph) | 169 | 116 | 6 | 176 | 63 | 134 | 12 | 1058 | 378 | 5 | 379 | 516 |
| RTOR Reduction (vph) | 0 | 1 | 0 | 0 | 0 | 59 | 0 | 38 | 0 | 0 | 0 | 26 |
| Lane Group Flow (vph) | 0 | 290 | 0 | 0 | 239 | 75 | 12 | 1398 | 0 | 0 | 384 | 631 |
| Confl. Peds. (#/hr) | 32 | | 17 | 17 | | 32 | 127 | | 36 | | 36 | |
| Confl. Bikes (#/hr) | | | 7 | | | 3 | | | 7 | | | |
| Heavy Vehicles (%) | 11% | 11% | 0% | 8% | 18% | 13% | 0% | 8% | 2% | 0% | 8% | 13% |
| Turn Type | Perm | NA | | Perm | NA | pt+ov | Perm | NA | | D.Pm | D.P+P | NA |
| Protected Phases | | 5 | | | 5 | 5 4 | | 1 | | | 4 | 1 4 |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | 1 | |
| Actuated Green, G (s) | | 41.6 | | | 41.6 | 55.6 | 25.8 | 25.8 | | | 34.8 | 39.8 |
| Effective Green, g (s) | | 41.6 | | | 41.6 | 55.6 | 25.8 | 25.8 | | | 34.8 | 39.8 |
| Actuated g/C Ratio | | 0.42 | | | 0.42 | 0.56 | 0.26 | 0.26 | | | 0.35 | 0.40 |
| Clearance Time (s) | | 5.0 | | | 5.0 | | 5.0 | 5.0 | | | 5.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | | 2.0 | 2.0 | | | 2.0 | |
| Lane Grp Cap (vph) | | 423 | | | 411 | 810 | 60 | 720 | | | 205 | 1077 |
| v/s Ratio Prot | | | | | | 0.05 | | c0.50 | | | c0.17 | 0.23 |
| v/s Ratio Perm | | c0.29 | | | 0.24 | | 0.05 | | | | 0.48 | |
| v/c Ratio | | 0.69 | | | 0.58 | 0.09 | 0.20 | 1.94 | | | 1.87 | 0.59 |
| Uniform Delay, d1 | | 23.9 | | | 22.5 | 10.4 | 29.0 | 37.1 | | | 28.7 | 23.6 |
| Progression Factor | | 1.00 | | | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 | 1.00 |
| Incremental Delay, d2 | | 3.7 | | | 1.4 | 0.0 | 7.3 | 428.9 | | | 410.9 | 0.5 |
| Delay (s) | | 27.5 | | | 23.8 | 10.4 | 36.4 | 466.0 | | | 439.6 | 24.2 |
| Level of Service | | C | | | C | B | D | F | | | F | C |
| Approach Delay (s) | | 27.5 | | | 19.0 | | | 462.5 | | | | 177.4 |
| Approach LOS | | C | | | B | | | F | | | | F |

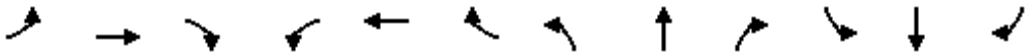
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 275.8 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 1.18 | | |
| Actuated Cycle Length (s) | 100.0 | Sum of lost time (s) | 19.0 |
| Intersection Capacity Utilization | 106.4% | ICU Level of Service | G |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



| Movement | SBR |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | 133 |
| Future Volume (vph) | 133 |
| Ideal Flow (vphpl) | 1900 |
| Lane Width | 12 |
| Total Lost time (s) | |
| Lane Util. Factor | |
| Frpb, ped/bikes | |
| Flpb, ped/bikes | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Peak-hour factor, PHF | 0.94 |
| Adj. Flow (vph) | 141 |
| RTOR Reduction (vph) | 0 |
| Lane Group Flow (vph) | 0 |
| Confl. Peds. (#/hr) | 127 |
| Confl. Bikes (#/hr) | 12 |
| Heavy Vehicles (%) | 6% |
| Turn Type | |
| Protected Phases | |
| Permitted Phases | |
| Actuated Green, G (s) | |
| Effective Green, g (s) | |
| Actuated g/C Ratio | |
| Clearance Time (s) | |
| Vehicle Extension (s) | |
| Lane Grp Cap (vph) | |
| v/s Ratio Prot | |
| v/s Ratio Perm | |
| v/c Ratio | |
| Uniform Delay, d1 | |
| Progression Factor | |
| Incremental Delay, d2 | |
| Delay (s) | |
| Level of Service | |
| Approach Delay (s) | |
| Approach LOS | |

| Intersection Summary |
|---|

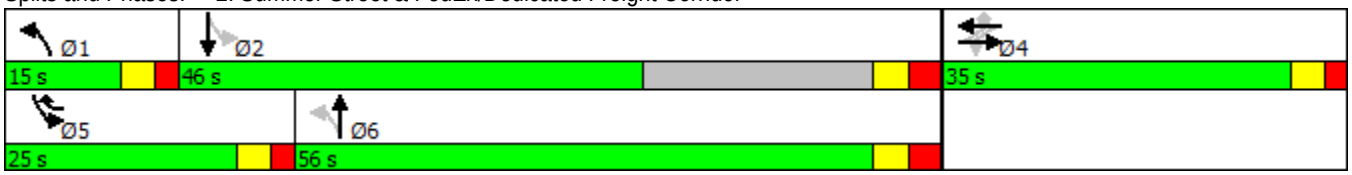


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 32 | 0 | 0 | 16 | 0 | 59 | 0 | 1198 | 21 | 94 | 567 | 0 |
| Future Volume (vph) | 32 | 0 | 0 | 16 | 0 | 59 | 0 | 1198 | 21 | 94 | 567 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 13 | 13 | 13 | 12 | 12 | 12 | 10 | 10 | 10 | 11 | 11 | 11 |
| Storage Length (ft) | 0 | | 0 | 0 | | 60 | 60 | | 0 | 120 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 50 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Frt | | | | | | 0.850 | | 0.997 | | | | |
| Flt Protected | | 0.950 | | | 0.950 | | | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1679 | 0 | 0 | 1624 | 727 | 1596 | 3023 | 0 | 785 | 2991 | 0 |
| Flt Permitted | | 0.746 | | | 0.734 | | | | | 0.128 | | |
| Satd. Flow (perm) | 0 | 1318 | 0 | 0 | 1255 | 727 | 1596 | 3023 | 0 | 106 | 2991 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | | 28 | | 2 | | | | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 203 | | | 352 | | | 675 | | | 1523 | |
| Travel Time (s) | | 4.6 | | | 8.0 | | | 15.3 | | | 34.6 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 100% | 0% | 0% | 0% | 100% | 5% | 0% |
| Adj. Flow (vph) | 35 | 0 | 0 | 17 | 0 | 64 | 0 | 1302 | 23 | 102 | 616 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 35 | 0 | 0 | 17 | 64 | 0 | 1325 | 0 | 102 | 616 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 12 | | | 11 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.10 | 1.10 | 1.10 | 1.14 | 1.14 | 1.14 | 1.25 | 1.25 | 1.25 | 1.19 | 1.19 | 1.19 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | 20 | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | 20 | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | pm+ov | pm+pt | NA | | pm+pt | NA | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Protected Phases | | 4 | | | 4 | 5 | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 4 | | | 4 | | 4 | 6 | 6 | | 2 | | |
| Detector Phase | 4 | 4 | | 4 | 4 | 5 | 1 | 6 | | 5 | 2 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 6.0 | 6.0 | | 6.0 | 6.0 | 6.0 | 6.0 | 10.0 | | 6.0 | 10.0 | |
| Minimum Split (s) | 26.0 | 26.0 | | 26.0 | 26.0 | 11.0 | 11.0 | 24.0 | | 11.0 | 24.0 | |
| Total Split (s) | 35.0 | 35.0 | | 35.0 | 35.0 | 25.0 | 15.0 | 56.0 | | 25.0 | 46.0 | |
| Total Split (%) | 30.2% | 30.2% | | 30.2% | 30.2% | 21.6% | 12.9% | 48.3% | | 21.6% | 39.7% | |
| Maximum Green (s) | 30.0 | 30.0 | | 30.0 | 30.0 | 20.0 | 10.0 | 50.0 | | 20.0 | 40.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 3.0 | | 2.0 | 3.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | 5.0 | 5.0 | 6.0 | | 5.0 | 6.0 | |
| Lead/Lag | | | | | | Lead | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | None | None | | None | None | None | None | Ped | | None | Max | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | | 7.0 | | | | |
| Flash Dont Walk (s) | 14.0 | 14.0 | | 14.0 | 14.0 | | | 9.0 | | | | |
| Pedestrian Calls (#/hr) | 10 | 10 | | 10 | 10 | | | 10 | | | | |
| Act Effct Green (s) | | 9.1 | | | 9.1 | 21.5 | | 49.7 | | 68.9 | 71.0 | |
| Actuated g/C Ratio | | 0.11 | | | 0.11 | 0.26 | | 0.60 | | 0.83 | 0.86 | |
| v/c Ratio | | 0.24 | | | 0.12 | 0.31 | | 0.73 | | 0.53 | 0.24 | |
| Control Delay | | 41.1 | | | 39.1 | 17.2 | | 18.7 | | 20.3 | 3.0 | |
| Queue Delay | | 0.0 | | | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | |
| Total Delay | | 41.1 | | | 39.1 | 17.2 | | 18.7 | | 20.3 | 3.0 | |
| LOS | | D | | | D | B | | B | | C | A | |
| Approach Delay | | 41.1 | | | 21.8 | | | 18.7 | | | 5.5 | |
| Approach LOS | | D | | | C | | | B | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 116 | | | |
| Actuated Cycle Length: 82.8 | | | |
| Natural Cycle: 90 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 0.73 | | | |
| Intersection Signal Delay: 14.8 | | Intersection LOS: B | |
| Intersection Capacity Utilization 65.3% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 2: Summer Street & FedEx/Dedicated Freight Corridor





| Lane Group | EBT | WBT | WBR | NBT | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 35 | 17 | 64 | 1325 | 102 | 616 |
| v/c Ratio | 0.24 | 0.12 | 0.31 | 0.73 | 0.53 | 0.24 |
| Control Delay | 41.1 | 39.1 | 17.2 | 18.7 | 20.3 | 3.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 41.1 | 39.1 | 17.2 | 18.7 | 20.3 | 3.0 |
| Queue Length 50th (ft) | 18 | 9 | 14 | 261 | 9 | 33 |
| Queue Length 95th (ft) | 49 | 29 | 44 | #602 | 76 | 98 |
| Internal Link Dist (ft) | 123 | 272 | | 595 | | 1443 |
| Turn Bay Length (ft) | | | 60 | | 120 | |
| Base Capacity (vph) | 500 | 476 | 277 | 1944 | 260 | 2565 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.07 | 0.04 | 0.23 | 0.68 | 0.39 | 0.24 |

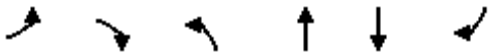
Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 32 | 0 | 0 | 16 | 0 | 59 | 0 | 1198 | 21 | 94 | 567 | 0 |
| Future Volume (vph) | 32 | 0 | 0 | 16 | 0 | 59 | 0 | 1198 | 21 | 94 | 567 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 13 | 13 | 13 | 12 | 12 | 12 | 10 | 10 | 10 | 11 | 11 | 11 |
| Total Lost time (s) | | 5.0 | | | 5.0 | 5.0 | | 6.0 | | 5.0 | 6.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | 1.00 | | 0.95 | | 1.00 | 0.95 | |
| Frt | | 1.00 | | | 1.00 | 0.85 | | 1.00 | | 1.00 | 1.00 | |
| Flt Protected | | 0.95 | | | 0.95 | 1.00 | | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 1679 | | | 1624 | 727 | | 3025 | | 785 | 2991 | |
| Flt Permitted | | 0.75 | | | 0.73 | 1.00 | | 1.00 | | 0.13 | 1.00 | |
| Satd. Flow (perm) | | 1319 | | | 1256 | 727 | | 3025 | | 106 | 2991 | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 35 | 0 | 0 | 17 | 0 | 64 | 0 | 1302 | 23 | 102 | 616 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 22 | 0 | 1 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 35 | 0 | 0 | 17 | 42 | 0 | 1324 | 0 | 102 | 616 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 100% | 0% | 0% | 0% | 100% | 5% | 0% |
| Turn Type | Perm | NA | | Perm | NA | pm+ov | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | | 4 | | | 4 | 5 | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 4 | | | 4 | | 4 | 6 | 6 | | 2 | | |
| Actuated Green, G (s) | | 6.0 | | | 6.0 | 18.9 | | 50.0 | | 67.9 | 67.9 | |
| Effective Green, g (s) | | 6.0 | | | 6.0 | 18.9 | | 50.0 | | 67.9 | 67.9 | |
| Actuated g/C Ratio | | 0.07 | | | 0.07 | 0.22 | | 0.59 | | 0.80 | 0.80 | |
| Clearance Time (s) | | 5.0 | | | 5.0 | 5.0 | | 6.0 | | 5.0 | 6.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | 2.0 | | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | | 93 | | | 88 | 204 | | 1781 | | 187 | 2392 | |
| v/s Ratio Prot | | | | | | 0.03 | | c0.44 | | c0.08 | 0.21 | |
| v/s Ratio Perm | | c0.03 | | | 0.01 | 0.03 | | | | 0.35 | | |
| v/c Ratio | | 0.38 | | | 0.19 | 0.21 | | 0.74 | | 0.55 | 0.26 | |
| Uniform Delay, d1 | | 37.7 | | | 37.2 | 26.9 | | 12.8 | | 8.4 | 2.1 | |
| Progression Factor | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 0.9 | | | 0.4 | 0.2 | | 1.5 | | 1.7 | 0.3 | |
| Delay (s) | | 38.6 | | | 37.6 | 27.1 | | 14.3 | | 10.2 | 2.4 | |
| Level of Service | | D | | | D | C | | B | | B | A | |
| Approach Delay (s) | | 38.6 | | | 29.3 | | | 14.3 | | | 3.5 | |
| Approach LOS | | D | | | C | | | B | | | A | |

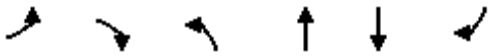
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 11.6 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.68 | | |
| Actuated Cycle Length (s) | 84.9 | Sum of lost time (s) | 16.0 |
| Intersection Capacity Utilization | 65.3% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 16 | 11 | 32 | 1123 | 567 | 48 |
| Future Volume (vph) | 16 | 11 | 32 | 1123 | 567 | 48 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 14 | 12 | 10 | 10 | 10 | 10 |
| Lane Util. Factor | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 0.95 |
| Ped Bike Factor | | | | | | |
| Frt | 0.945 | | | | 0.988 | |
| Flt Protected | 0.971 | | | 0.999 | | |
| Satd. Flow (prot) | 1432 | 0 | 0 | 2998 | 2915 | 0 |
| Flt Permitted | 0.971 | | | 0.999 | | |
| Satd. Flow (perm) | 1432 | 0 | 0 | 2998 | 2915 | 0 |
| Link Speed (mph) | 30 | | | 30 | 30 | |
| Link Distance (ft) | 362 | | | 355 | 675 | |
| Travel Time (s) | 8.2 | | | 8.1 | 15.3 | |
| Confl. Peds. (#/hr) | | | 126 | | | 126 |
| Confl. Bikes (#/hr) | | | | | | 4 |
| Peak Hour Factor | 0.64 | 0.64 | 0.97 | 0.97 | 0.89 | 0.89 |
| Heavy Vehicles (%) | 8% | 30% | 3% | 1% | 3% | 0% |
| Parking (#/hr) | | | 1 | | | 1 |
| Adj. Flow (vph) | 25 | 17 | 33 | 1158 | 637 | 54 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 42 | 0 | 0 | 1191 | 691 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(ft) | 14 | | | 10 | 10 | |
| Link Offset(ft) | 0 | | | 0 | 0 | |
| Crosswalk Width(ft) | 16 | | | 16 | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.05 | 1.14 | 1.25 | 1.25 | 1.25 | 1.25 |
| Turning Speed (mph) | 15 | 9 | 15 | | | 9 |
| Sign Control | Stop | | | Free | Free | |

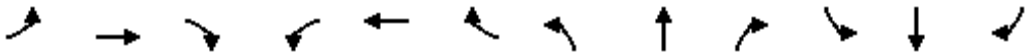
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 68.5% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 16 | 11 | 32 | 1123 | 567 | 48 |
| Future Volume (Veh/h) | 16 | 11 | 32 | 1123 | 567 | 48 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.64 | 0.64 | 0.97 | 0.97 | 0.89 | 0.89 |
| Hourly flow rate (vph) | 25 | 17 | 33 | 1158 | 637 | 54 |
| Pedestrians | 126 | | | | | |
| Lane Width (ft) | 14.0 | | | | | |
| Walking Speed (ft/s) | 4.0 | | | | | |
| Percent Blockage | 12 | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | 355 | 675 | |
| pX, platoon unblocked | 0.81 | | | | | |
| vC, conflicting volume | 1435 | 472 | 817 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 1075 | 472 | 817 | | | |
| tC, single (s) | 7.0 | 7.5 | 4.2 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.6 | 3.6 | 2.2 | | | |
| p0 queue free % | 82 | 96 | 95 | | | |
| cM capacity (veh/h) | 139 | 412 | 702 | | | |

| Direction, Lane # | EB 1 | NB 1 | NB 2 | SB 1 | SB 2 |
|---|---|---|---|---|---|
| Volume Total | 42 | 419 | 772 | 425 | 266 |
| Volume Left | 25 | 33 | 0 | 0 | 0 |
| Volume Right | 17 | 0 | 0 | 0 | 54 |
| cSH | 190 | 702 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.22 | 0.05 | 0.45 | 0.25 | 0.16 |
| Queue Length 95th (ft) | 20 | 4 | 0 | 0 | 0 |
| Control Delay (s) | 29.2 | 1.4 | 0.0 | 0.0 | 0.0 |
| Lane LOS | D | A | | | |
| Approach Delay (s) | 29.2 | 0.5 | | 0.0 | |
| Approach LOS | D | | | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 0.9 | | | |
| Intersection Capacity Utilization | 68.5% | ICU Level of Service | | C |
| Analysis Period (min) | 15 | | | |



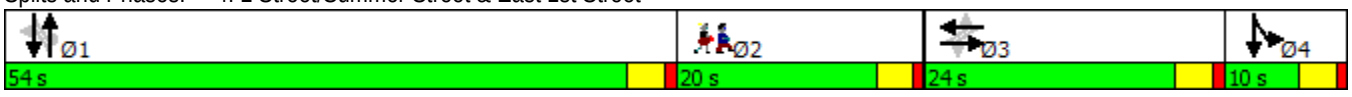
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 45 | 53 | 43 | 11 | 96 | 335 | 43 | 760 | 32 | 127 | 389 | 87 |
| Future Volume (vph) | 45 | 53 | 43 | 11 | 96 | 335 | 43 | 760 | 32 | 127 | 389 | 87 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 15 | 12 | 12 | 16 | 12 | 12 | 9 | 12 | 12 | 12 | 12 |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 100 | | 0 | 100 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Ped Bike Factor | | 0.98 | | | 0.97 | | | 1.00 | | | 0.98 | |
| Frt | | 0.959 | | | 0.898 | | | 0.994 | | | 0.978 | |
| Flt Protected | | 0.984 | | | 0.999 | | | 0.997 | | | 0.990 | |
| Satd. Flow (prot) | 0 | 1606 | 0 | 0 | 1663 | 0 | 0 | 2795 | 0 | 0 | 2909 | 0 |
| Flt Permitted | | 0.402 | | | 0.991 | | | 0.884 | | | 0.590 | |
| Satd. Flow (perm) | 0 | 655 | 0 | 0 | 1649 | 0 | 0 | 2473 | 0 | 0 | 1730 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 18 | | | 128 | | | 5 | | | 26 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 540 | | | 576 | | | 340 | | | 355 | |
| Travel Time (s) | | 12.3 | | | 13.1 | | | 7.7 | | | 8.1 | |
| Confl. Peds. (#/hr) | 16 | | 17 | 17 | | 16 | 104 | | 44 | 44 | | 104 |
| Confl. Bikes (#/hr) | | | 2 | | | 2 | | | 11 | | | 2 |
| Peak Hour Factor | 0.84 | 0.84 | 0.84 | 0.83 | 0.83 | 0.83 | 0.94 | 0.94 | 0.94 | 0.91 | 0.91 | 0.91 |
| Heavy Vehicles (%) | 12% | 6% | 7% | 17% | 1% | 1% | 2% | 2% | 38% | 15% | 3% | 8% |
| Adj. Flow (vph) | 54 | 63 | 51 | 13 | 116 | 404 | 46 | 809 | 34 | 140 | 427 | 96 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 168 | 0 | 0 | 533 | 0 | 0 | 889 | 0 | 0 | 663 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.01 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 1.30 | 1.14 | 1.14 | 1.14 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |

| Lane Group | Ø2 |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | |
| Future Volume (vph) | |
| Ideal Flow (vphpl) | |
| Lane Width (ft) | |
| Storage Length (ft) | |
| Storage Lanes | |
| Taper Length (ft) | |
| Lane Util. Factor | |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Right Turn on Red | |
| Satd. Flow (RTOR) | |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | |
| Heavy Vehicles (%) | |
| Adj. Flow (vph) | |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | |
| Enter Blocked Intersection | |
| Lane Alignment | |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | |
| Turning Speed (mph) | |
| Number of Detectors | |
| Detector Template | |
| Leading Detector (ft) | |
| Trailing Detector (ft) | |
| Detector 1 Position(ft) | |
| Detector 1 Size(ft) | |
| Detector 1 Type | |
| Detector 1 Channel | |
| Detector 1 Extend (s) | |
| Detector 1 Queue (s) | |
| Detector 1 Delay (s) | |
| Detector 2 Position(ft) | |
| Detector 2 Size(ft) | |
| Detector 2 Type | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | D.P+P | NA | |
| Protected Phases | | 3 | | | 3 | | | 1 | | 4 | 1 4 | |
| Permitted Phases | 3 | | | 3 | | | 1 | | | 1 | | |
| Detector Phase | 3 | 3 | | 3 | 3 | | 1 | 1 | | 4 | 1 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 10.0 | 10.0 | | 5.0 | | |
| Minimum Split (s) | 11.0 | 11.0 | | 11.0 | 11.0 | | 14.0 | 14.0 | | 9.0 | | |
| Total Split (s) | 24.0 | 24.0 | | 24.0 | 24.0 | | 54.0 | 54.0 | | 10.0 | | |
| Total Split (%) | 22.2% | 22.2% | | 22.2% | 22.2% | | 50.0% | 50.0% | | 9.3% | | |
| Maximum Green (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 50.0 | 50.0 | | 6.0 | | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | |
| Total Lost Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | | |
| Lead/Lag | Lead | Lead | | Lead | Lead | | Lead | Lead | | Lag | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 1.0 | | |
| Recall Mode | None | None | | None | None | | Max | Max | | None | | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 20.2 | | | 20.2 | | | 50.5 | | | 56.6 | |
| Actuated g/C Ratio | | 0.21 | | | 0.21 | | | 0.53 | | | 0.59 | |
| v/c Ratio | | 1.11 | | | 1.19 | | | 0.68 | | | 0.60 | |
| Control Delay | | 141.2 | | | 134.0 | | | 21.9 | | | 14.3 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 141.2 | | | 134.0 | | | 21.9 | | | 14.3 | |
| LOS | | F | | | F | | | C | | | B | |
| Approach Delay | | 141.2 | | | 134.0 | | | 21.9 | | | 14.3 | |
| Approach LOS | | F | | | F | | | C | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 108 | | | |
| Actuated Cycle Length: 96 | | | |
| Natural Cycle: 90 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 1.19 | | | |
| Intersection Signal Delay: 55.1 | | Intersection LOS: E | |
| Intersection Capacity Utilization 92.0% | | ICU Level of Service F | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 4: L Street/Summer Street & East 1st Street



| Lane Group | Ø2 |
|---|---|
| Detector 2 Channel | |
| Detector 2 Extend (s) | |
| Turn Type | |
| Protected Phases | 2 |
| Permitted Phases | |
| Detector Phase | |
| Switch Phase | |
| Minimum Initial (s) | 4.0 |
| Minimum Split (s) | 20.0 |
| Total Split (s) | 20.0 |
| Total Split (%) | 19% |
| Maximum Green (s) | 16.0 |
| Yellow Time (s) | 3.0 |
| All-Red Time (s) | 1.0 |
| Lost Time Adjust (s) | |
| Total Lost Time (s) | |
| Lead/Lag | Lag |
| Lead-Lag Optimize? | |
| Vehicle Extension (s) | 3.0 |
| Recall Mode | None |
| Walk Time (s) | 7.0 |
| Flash Dont Walk (s) | 9.0 |
| Pedestrian Calls (#/hr) | 22 |
| Act Effct Green (s) | |
| Actuated g/C Ratio | |
| v/c Ratio | |
| Control Delay | |
| Queue Delay | |
| Total Delay | |
| LOS | |
| Approach Delay | |
| Approach LOS | |

| Intersection Summary |
|---|

| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 168 | 533 | 889 | 663 |
| v/c Ratio | 1.11 | 1.19 | 0.68 | 0.60 |
| Control Delay | 141.2 | 134.0 | 21.9 | 14.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 141.2 | 134.0 | 21.9 | 14.3 |
| Queue Length 50th (ft) | ~93 | ~287 | 161 | 65 |
| Queue Length 95th (ft) | #246 | #533 | 347 | 168 |
| Internal Link Dist (ft) | 460 | 496 | 260 | 275 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 151 | 447 | 1303 | 1104 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 1.11 | 1.19 | 0.68 | 0.60 |

Intersection Summary

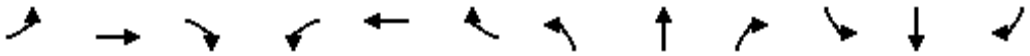
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 45 | 53 | 43 | 11 | 96 | 335 | 43 | 760 | 32 | 127 | 389 | 87 |
| Future Volume (vph) | 45 | 53 | 43 | 11 | 96 | 335 | 43 | 760 | 32 | 127 | 389 | 87 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 15 | 12 | 12 | 16 | 12 | 12 | 9 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | | | 0.95 | | | 0.95 | |
| Frpb, ped/bikes | | 0.98 | | | 0.97 | | | 1.00 | | | 0.98 | |
| Flpb, ped/bikes | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Frt | | 0.96 | | | 0.90 | | | 0.99 | | | 0.98 | |
| Flt Protected | | 0.98 | | | 1.00 | | | 1.00 | | | 0.99 | |
| Satd. Flow (prot) | | 1606 | | | 1665 | | | 2792 | | | 2909 | |
| Flt Permitted | | 0.40 | | | 0.99 | | | 0.88 | | | 0.59 | |
| Satd. Flow (perm) | | 656 | | | 1652 | | | 2475 | | | 1733 | |
| Peak-hour factor, PHF | 0.84 | 0.84 | 0.84 | 0.83 | 0.83 | 0.83 | 0.94 | 0.94 | 0.94 | 0.91 | 0.91 | 0.91 |
| Adj. Flow (vph) | 54 | 63 | 51 | 13 | 116 | 404 | 46 | 809 | 34 | 140 | 427 | 96 |
| RTOR Reduction (vph) | 0 | 14 | 0 | 0 | 102 | 0 | 0 | 2 | 0 | 0 | 11 | 0 |
| Lane Group Flow (vph) | 0 | 154 | 0 | 0 | 431 | 0 | 0 | 887 | 0 | 0 | 652 | 0 |
| Confl. Peds. (#/hr) | 16 | | 17 | 17 | | 16 | 104 | | 44 | 44 | | 104 |
| Confl. Bikes (#/hr) | | | 2 | | | 2 | | | 11 | | | 2 |
| Heavy Vehicles (%) | 12% | 6% | 7% | 17% | 1% | 1% | 2% | 2% | 38% | 15% | 3% | 8% |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | D.P+P | NA | |
| Protected Phases | | 3 | | | 3 | | | 1 | | 4 | 1 4 | |
| Permitted Phases | 3 | | | 3 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 20.2 | | | 20.2 | | | 50.5 | | | 56.6 | |
| Effective Green, g (s) | | 20.2 | | | 20.2 | | | 50.5 | | | 56.6 | |
| Actuated g/C Ratio | | 0.21 | | | 0.21 | | | 0.51 | | | 0.57 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | | | 3.0 | | | | |
| Lane Grp Cap (vph) | | 134 | | | 338 | | | 1268 | | | 1068 | |
| v/s Ratio Prot | | | | | | | | | | | c0.04 | |
| v/s Ratio Perm | | 0.23 | | | c0.26 | | | c0.36 | | | 0.31 | |
| v/c Ratio | | 1.15 | | | 1.28 | | | 0.70 | | | 0.61 | |
| Uniform Delay, d1 | | 39.1 | | | 39.1 | | | 18.2 | | | 13.7 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 122.7 | | | 145.2 | | | 3.2 | | | 0.7 | |
| Delay (s) | | 161.8 | | | 184.4 | | | 21.5 | | | 14.5 | |
| Level of Service | | F | | | F | | | C | | | B | |
| Approach Delay (s) | | 161.8 | | | 184.4 | | | 21.5 | | | 14.5 | |
| Approach LOS | | F | | | F | | | C | | | B | |

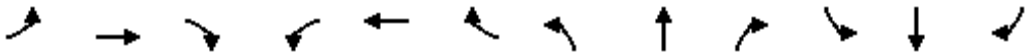
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 68.4 | HCM 2000 Level of Service | E |
| HCM 2000 Volume to Capacity ratio | 0.78 | | |
| Actuated Cycle Length (s) | 98.5 | Sum of lost time (s) | 16.0 |
| Intersection Capacity Utilization | 92.0% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 16 | 5 | 21 | 11 | 16 | 62 | 43 | 736 | 32 | 11 | 421 | 21 |
| Future Volume (vph) | 16 | 5 | 21 | 11 | 16 | 62 | 43 | 736 | 32 | 11 | 421 | 21 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 16 | 12 | 12 | 16 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.932 | | | 0.906 | | | 0.995 | | | 0.994 | |
| Flt Protected | | 0.981 | | | 0.994 | | | 0.997 | | | 0.999 | |
| Satd. Flow (prot) | 0 | 1459 | 0 | 0 | 1402 | 0 | 0 | 1835 | 0 | 0 | 1851 | 0 |
| Flt Permitted | | 0.981 | | | 0.994 | | | 0.997 | | | 0.999 | |
| Satd. Flow (perm) | 0 | 1459 | 0 | 0 | 1402 | 0 | 0 | 1835 | 0 | 0 | 1851 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 429 | | | 453 | | | 298 | | | 340 | |
| Travel Time (s) | | 9.8 | | | 10.3 | | | 6.8 | | | 7.7 | |
| Confl. Peds. (#/hr) | 15 | | 20 | 20 | | 15 | 90 | | 41 | 41 | | 90 |
| Confl. Bikes (#/hr) | | | | | | 1 | | | 9 | | | |
| Peak Hour Factor | 0.57 | 0.57 | 0.57 | 0.88 | 0.88 | 0.88 | 0.94 | 0.94 | 0.94 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 10% | 7% | 0% | 3% | 4% | 25% | 0% | 4% | 5% |
| Adj. Flow (vph) | 28 | 9 | 37 | 13 | 18 | 70 | 46 | 783 | 34 | 11 | 439 | 22 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 74 | 0 | 0 | 101 | 0 | 0 | 863 | 0 | 0 | 472 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.25 | 1.14 | 1.14 | 1.25 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 0.97 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 85.5% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 16 | 5 | 21 | 11 | 16 | 62 | 43 | 736 | 32 | 11 | 421 | 21 |
| Future Volume (Veh/h) | 16 | 5 | 21 | 11 | 16 | 62 | 43 | 736 | 32 | 11 | 421 | 21 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.57 | 0.57 | 0.57 | 0.88 | 0.88 | 0.88 | 0.94 | 0.94 | 0.94 | 0.96 | 0.96 | 0.96 |
| Hourly flow rate (vph) | 28 | 9 | 37 | 13 | 18 | 70 | 46 | 783 | 34 | 11 | 439 | 22 |
| Pedestrians | | 90 | | | 41 | | | 20 | | | 15 | |
| Lane Width (ft) | | 10.0 | | | 10.0 | | | 16.0 | | | 16.0 | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Percent Blockage | | 6 | | | 3 | | | 2 | | | 2 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | 602 | | | 340 | |
| pX, platoon unblocked | 0.84 | 0.84 | 0.87 | 0.84 | 0.84 | 0.77 | 0.87 | | | 0.77 | | |
| vC, conflicting volume | 1548 | 1512 | 560 | 1466 | 1506 | 856 | 551 | | | 858 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1217 | 1174 | 424 | 1119 | 1167 | 667 | 414 | | | 669 | | |
| tC, single (s) | *4.0 | *4.0 | *5.0 | *4.0 | *4.0 | *4.0 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.6 | 4.1 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 89 | 97 | 94 | 96 | 94 | 86 | 95 | | | 98 | | |
| cM capacity (veh/h) | 256 | 312 | 585 | 310 | 311 | 513 | 934 | | | 699 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 74 | 101 | 863 | 472 |
| Volume Left | 28 | 13 | 46 | 11 |
| Volume Right | 37 | 70 | 34 | 22 |
| cSH | 367 | 427 | 934 | 699 |
| Volume to Capacity | 0.20 | 0.24 | 0.05 | 0.02 |
| Queue Length 95th (ft) | 19 | 23 | 4 | 1 |
| Control Delay (s) | 17.3 | 16.0 | 1.3 | 0.5 |
| Lane LOS | C | C | A | A |
| Approach Delay (s) | 17.3 | 16.0 | 1.3 | 0.5 |
| Approach LOS | C | C | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 2.8 | | | |
| Intersection Capacity Utilization | 85.5% | ICU Level of Service | E | |
| Analysis Period (min) | 15 | | | |

* User Entered Value



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBU | NBL | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 17 | 0 | 21 | 5 | 16 | 32 | 5 | 21 | 735 | 32 | 16 | 410 |
| Future Volume (vph) | 17 | 0 | 21 | 5 | 16 | 32 | 5 | 21 | 735 | 32 | 16 | 410 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 12 | 16 | 12 | 12 | 16 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.925 | | | 0.918 | | | | 0.995 | | | 0.993 |
| Flt Protected | | 0.978 | | | 0.996 | | | | 0.998 | | | 0.998 |
| Satd. Flow (prot) | 0 | 1258 | 0 | 0 | 1313 | 0 | 0 | 0 | 1853 | 0 | 0 | 1833 |
| Flt Permitted | | 0.978 | | | 0.996 | | | | 0.998 | | | 0.998 |
| Satd. Flow (perm) | 0 | 1258 | 0 | 0 | 1313 | 0 | 0 | 0 | 1853 | 0 | 0 | 1833 |
| Link Speed (mph) | | 30 | | | 30 | | | | 30 | | | 30 |
| Link Distance (ft) | | 638 | | | 716 | | | | 304 | | | 298 |
| Travel Time (s) | | 14.5 | | | 16.3 | | | | 6.9 | | | 6.8 |
| Confl. Peds. (#/hr) | 22 | | 31 | 31 | | 22 | | 75 | | 46 | 46 | |
| Confl. Bikes (#/hr) | | | | | | | | | | 9 | | |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.67 | 0.67 | 0.67 | 0.92 | 0.94 | 0.94 | 0.94 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 0% | 0% | 6% | 0% | 0% | 0% | 0% | 5% | 4% | 0% | 6% | 5% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | | | | | |
| Adj. Flow (vph) | 20 | 0 | 25 | 7 | 24 | 48 | 5 | 22 | 782 | 34 | 17 | 441 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 45 | 0 | 0 | 79 | 0 | 0 | 0 | 843 | 0 | 0 | 482 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | R NA | Left | Left | Right | Left | Left |
| Median Width(ft) | | 0 | | | 0 | | | | 0 | | | 0 |
| Link Offset(ft) | | 0 | | | 0 | | | | 0 | | | 0 |
| Crosswalk Width(ft) | | 16 | | | 16 | | | | 16 | | | 16 |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 0.97 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 9 | 15 | | 9 | 15 | |
| Sign Control | | Stop | | | Stop | | | | Free | | | Free |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 75.3% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |



| Lane Group | SBR |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | 22 |
| Future Volume (vph) | 22 |
| Ideal Flow (vphpl) | 1900 |
| Lane Width (ft) | 12 |
| Lane Util. Factor | 1.00 |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | 0 |
| Flt Permitted | |
| Satd. Flow (perm) | 0 |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | 75 |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | 0.93 |
| Heavy Vehicles (%) | 0% |
| Parking (#/hr) | |
| Adj. Flow (vph) | 24 |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | 0 |
| Enter Blocked Intersection | No |
| Lane Alignment | Right |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | 1.14 |
| Turning Speed (mph) | 9 |
| Sign Control | |

| Intersection Summary |
|---|



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBU | NBL | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 17 | 0 | 21 | 5 | 16 | 32 | 5 | 21 | 735 | 32 | 16 | 410 |
| Future Volume (Veh/h) | 17 | 0 | 21 | 5 | 16 | 32 | 5 | 21 | 735 | 32 | 16 | 410 |
| Sign Control | | Stop | | | Stop | | | | Free | | | Free |
| Grade | | 0% | | | 0% | | | | 0% | | | 0% |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.67 | 0.67 | 0.67 | 0.92 | 0.94 | 0.94 | 0.94 | 0.93 | 0.93 |
| Hourly flow rate (vph) | 20 | 0 | 25 | 7 | 24 | 48 | 0 | 22 | 782 | 34 | 17 | 441 |
| Pedestrians | | 75 | | | 46 | | | | 31 | | | 22 |
| Lane Width (ft) | | 10.0 | | | 10.0 | | | | 16.0 | | | 16.0 |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | | 4.0 | | | 4.0 |
| Percent Blockage | | 5 | | | 3 | | | | 3 | | | 2 |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | | None | | | None |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | 304 | | | 638 |
| pX, platoon unblocked | 0.84 | 0.84 | 0.89 | 0.84 | 0.84 | 0.78 | 0.00 | 0.89 | | | 0.78 | |
| vC, conflicting volume | 1487 | 1468 | 559 | 1432 | 1463 | 867 | 0 | 540 | | | 862 | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1186 | 1163 | 441 | 1120 | 1157 | 690 | 0 | 420 | | | 683 | |
| tC, single (s) | *4.0 | 6.5 | *5.0 | *4.0 | *4.0 | *4.0 | 0.0 | 4.1 | | | 4.2 | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.4 | 3.5 | 4.0 | 3.3 | 0.0 | 2.2 | | | 2.3 | |
| p0 queue free % | 93 | 100 | 96 | 98 | 93 | 90 | 0 | 98 | | | 97 | |
| cM capacity (veh/h) | 277 | 144 | 577 | 329 | 323 | 505 | 0 | 946 | | | 674 | |

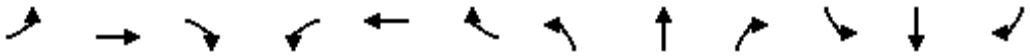
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 45 | 79 | 838 | 482 |
| Volume Left | 20 | 7 | 22 | 17 |
| Volume Right | 25 | 48 | 34 | 24 |
| cSH | 390 | 414 | 946 | 674 |
| Volume to Capacity | 0.12 | 0.19 | 0.02 | 0.03 |
| Queue Length 95th (ft) | 10 | 17 | 2 | 2 |
| Control Delay (s) | 15.4 | 15.7 | 0.6 | 0.7 |
| Lane LOS | C | C | A | A |
| Approach Delay (s) | 15.4 | 15.7 | 0.6 | 0.7 |
| Approach LOS | C | C | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.9 | | |
| Intersection Capacity Utilization | 75.3% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

* User Entered Value



| Movement | SBR |
|---|---|
| Lane Configurations | |
| Traffic Volume (veh/h) | 22 |
| Future Volume (Veh/h) | 22 |
| Sign Control | |
| Grade | |
| Peak Hour Factor | 0.93 |
| Hourly flow rate (vph) | 24 |
| Pedestrians | |
| Lane Width (ft) | |
| Walking Speed (ft/s) | |
| Percent Blockage | |
| Right turn flare (veh) | |
| Median type | |
| Median storage veh) | |
| Upstream signal (ft) | |
| pX, platoon unblocked | |
| vC, conflicting volume | |
| vC1, stage 1 conf vol | |
| vC2, stage 2 conf vol | |
| vCu, unblocked vol | |
| tC, single (s) | |
| tC, 2 stage (s) | |
| tF (s) | |
| p0 queue free % | |
| cM capacity (veh/h) | |
| Direction, Lane # | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 90 | 101 | 48 | 32 | 155 | 72 | 69 | 637 | 11 | 54 | 280 | 97 |
| Future Volume (vph) | 90 | 101 | 48 | 32 | 155 | 72 | 69 | 637 | 11 | 54 | 280 | 97 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 11 | 12 | 12 | 16 | 12 | 10 | 10 | 10 | 10 | 10 | 10 |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 0 | | 250 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 0 | | 1 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 0.95 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Ped Bike Factor | | 0.93 | | | 0.91 | | | 1.00 | | | 0.97 | |
| Frt | | 0.970 | | | 0.963 | | | 0.998 | | | 0.966 | |
| Flt Protected | | 0.981 | | | 0.994 | | | 0.995 | | | 0.994 | |
| Satd. Flow (prot) | 0 | 2510 | 0 | 0 | 1361 | 0 | 0 | 2823 | 0 | 0 | 2583 | 0 |
| Flt Permitted | | 0.576 | | | 0.927 | | | 0.788 | | | 0.672 | |
| Satd. Flow (perm) | 0 | 1416 | 0 | 0 | 1248 | 0 | 0 | 2228 | 0 | 0 | 1740 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 642 | | | 138 | | | 618 | | | 304 | |
| Travel Time (s) | | 14.6 | | | 3.1 | | | 14.0 | | | 6.9 | |
| Confl. Peds. (#/hr) | 104 | | 84 | 84 | | 104 | 117 | | 118 | 118 | | 117 |
| Confl. Bikes (#/hr) | | | | | | 3 | | | 9 | | | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.97 | 0.97 | 0.97 | 0.95 | 0.95 | 0.95 | 0.85 | 0.85 | 0.85 |
| Heavy Vehicles (%) | 16% | 7% | 0% | 6% | 10% | 25% | 3% | 1% | 0% | 2% | 3% | 10% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Adj. Flow (vph) | 100 | 112 | 53 | 33 | 160 | 74 | 73 | 671 | 12 | 64 | 329 | 114 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 265 | 0 | 0 | 267 | 0 | 0 | 756 | 0 | 0 | 507 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.27 | 1.14 | 1.14 | 1.12 | 1.14 | 1.25 | 1.33 | 1.25 | 1.25 | 1.33 | 1.25 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |

| Lane Group | Ø2 |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | |
| Future Volume (vph) | |
| Ideal Flow (vphpl) | |
| Lane Width (ft) | |
| Storage Length (ft) | |
| Storage Lanes | |
| Taper Length (ft) | |
| Lane Util. Factor | |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Right Turn on Red | |
| Satd. Flow (RTOR) | |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | |
| Heavy Vehicles (%) | |
| Parking (#/hr) | |
| Adj. Flow (vph) | |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | |
| Enter Blocked Intersection | |
| Lane Alignment | |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | |
| Turning Speed (mph) | |
| Number of Detectors | |
| Detector Template | |
| Leading Detector (ft) | |
| Trailing Detector (ft) | |
| Detector 1 Position(ft) | |
| Detector 1 Size(ft) | |
| Detector 1 Type | |
| Detector 1 Channel | |
| Detector 1 Extend (s) | |
| Detector 1 Queue (s) | |
| Detector 1 Delay (s) | |
| Detector 2 Position(ft) | |
| Detector 2 Size(ft) | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | D.P+P | NA | | Perm | NA | | D.P+P | NA | | Perm | NA | |
| Protected Phases | 3 | 3 4 | | | 4 | | 5 | 1 5 | | | 1 | |
| Permitted Phases | 4 | | | 4 | | | 1 | | | 1 | | |
| Detector Phase | 3 | 3 4 | | 4 | 4 | | 5 | 1 5 | | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | | | 10.0 | 10.0 | | 6.0 | | | 30.0 | 30.0 | |
| Minimum Split (s) | 10.0 | | | 14.0 | 14.0 | | 10.0 | | | 34.0 | 34.0 | |
| Total Split (s) | 11.0 | | | 34.0 | 34.0 | | 19.0 | | | 54.0 | 54.0 | |
| Total Split (%) | 7.7% | | | 23.9% | 23.9% | | 13.4% | | | 38.0% | 38.0% | |
| Maximum Green (s) | 6.0 | | | 30.0 | 30.0 | | 15.0 | | | 50.0 | 50.0 | |
| Yellow Time (s) | 3.0 | | | 3.0 | 3.0 | | 3.0 | | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | | | 1.0 | 1.0 | | 1.0 | | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | | | | | 0.0 | | | | | | 0.0 | |
| Total Lost Time (s) | | | | | 4.0 | | | | | | 4.0 | |
| Lead/Lag | Lead | | | Lag | Lag | | | | | Lead | Lead | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | | | 2.0 | 2.0 | | 2.0 | | | 2.0 | 2.0 | |
| Recall Mode | Max | | | Max | Max | | Max | | | Max | Max | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 35.0 | | | 30.0 | | | 65.0 | | | 50.0 | |
| Actuated g/C Ratio | | 0.25 | | | 0.21 | | | 0.46 | | | 0.35 | |
| v/c Ratio | | 0.67 | | | 1.02 | | | 0.70 | | | 0.83 | |
| Control Delay | | 54.0 | | | 114.1 | | | 31.9 | | | 55.0 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 54.0 | | | 114.1 | | | 31.9 | | | 55.0 | |
| LOS | | D | | | F | | | C | | | E | |
| Approach Delay | | 54.0 | | | 114.1 | | | 31.9 | | | 55.0 | |
| Approach LOS | | D | | | F | | | C | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 142 | | | |
| Actuated Cycle Length: 142 | | | |
| Natural Cycle: 105 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 1.02 | | | |
| Intersection Signal Delay: 53.9 | | Intersection LOS: D | |
| Intersection Capacity Utilization 90.6% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |

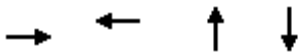
Description: L Street is very wide and during peak hours vehicles form two lanes.

Splits and Phases: 7: L Street & E Broadway



| Lane Group | Ø2 |
|---|---|
| Detector 2 Type | |
| Detector 2 Channel | |
| Detector 2 Extend (s) | |
| Turn Type | |
| Protected Phases | 2 |
| Permitted Phases | |
| Detector Phase | |
| Switch Phase | |
| Minimum Initial (s) | 4.0 |
| Minimum Split (s) | 24.0 |
| Total Split (s) | 24.0 |
| Total Split (%) | 17% |
| Maximum Green (s) | 20.0 |
| Yellow Time (s) | 3.0 |
| All-Red Time (s) | 1.0 |
| Lost Time Adjust (s) | |
| Total Lost Time (s) | |
| Lead/Lag | Lag |
| Lead-Lag Optimize? | |
| Vehicle Extension (s) | 2.0 |
| Recall Mode | None |
| Walk Time (s) | 8.0 |
| Flash Dont Walk (s) | 12.0 |
| Pedestrian Calls (#/hr) | 121 |
| Act Effct Green (s) | |
| Actuated g/C Ratio | |
| v/c Ratio | |
| Control Delay | |
| Queue Delay | |
| Total Delay | |
| LOS | |
| Approach Delay | |
| Approach LOS | |

| Intersection Summary |
|---|



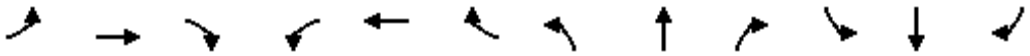
| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 265 | 267 | 756 | 507 |
| v/c Ratio | 0.67 | 1.02 | 0.70 | 0.83 |
| Control Delay | 54.0 | 114.1 | 31.9 | 55.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 54.0 | 114.1 | 31.9 | 55.0 |
| Queue Length 50th (ft) | 104 | ~254 | 253 | 225 |
| Queue Length 95th (ft) | 147 | #441 | 316 | 280 |
| Internal Link Dist (ft) | 562 | 58 | 538 | 224 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 395 | 263 | 1082 | 612 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.67 | 1.02 | 0.70 | 0.83 |

Intersection Summary

Description: L Street is very wide and during peak hours vehicles form two lanes.

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

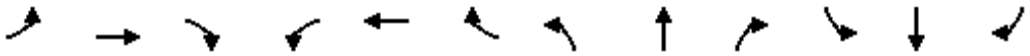
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 90 | 101 | 48 | 32 | 155 | 72 | 69 | 637 | 11 | 54 | 280 | 97 |
| Future Volume (vph) | 90 | 101 | 48 | 32 | 155 | 72 | 69 | 637 | 11 | 54 | 280 | 97 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 11 | 12 | 12 | 16 | 12 | 10 | 10 | 10 | 10 | 10 | 10 |
| Total Lost time (s) | | 5.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 0.95 | | | 1.00 | | | 0.95 | | | 0.95 | |
| Frpb, ped/bikes | | 0.96 | | | 0.93 | | | 1.00 | | | 0.98 | |
| Flpb, ped/bikes | | 0.98 | | | 0.98 | | | 1.00 | | | 1.00 | |
| Frt | | 0.97 | | | 0.96 | | | 1.00 | | | 0.97 | |
| Flt Protected | | 0.98 | | | 0.99 | | | 1.00 | | | 0.99 | |
| Satd. Flow (prot) | | 2456 | | | 1337 | | | 2815 | | | 2574 | |
| Flt Permitted | | 0.58 | | | 0.93 | | | 0.79 | | | 0.67 | |
| Satd. Flow (perm) | | 1442 | | | 1248 | | | 2228 | | | 1741 | |
| Peak-hour factor, PHF | 0.90 | 0.90 | 0.90 | 0.97 | 0.97 | 0.97 | 0.95 | 0.95 | 0.95 | 0.85 | 0.85 | 0.85 |
| Adj. Flow (vph) | 100 | 112 | 53 | 33 | 160 | 74 | 73 | 671 | 12 | 64 | 329 | 114 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 265 | 0 | 0 | 267 | 0 | 0 | 756 | 0 | 0 | 507 | 0 |
| Confl. Peds. (#/hr) | 104 | | 84 | 84 | | 104 | 117 | | 118 | 118 | | 117 |
| Confl. Bikes (#/hr) | | | | | | 3 | | | 9 | | | |
| Heavy Vehicles (%) | 16% | 7% | 0% | 6% | 10% | 25% | 3% | 1% | 0% | 2% | 3% | 10% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Turn Type | D.P+P | NA | | Perm | NA | | D.P+P | NA | | Perm | NA | |
| Protected Phases | 3 | 3 4 | | | 4 | | 5 | 1 5 | | | 1 | |
| Permitted Phases | 4 | | | 4 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 36.0 | | | 30.0 | | | 65.0 | | | 50.0 | |
| Effective Green, g (s) | | 36.0 | | | 30.0 | | | 65.0 | | | 50.0 | |
| Actuated g/C Ratio | | 0.25 | | | 0.21 | | | 0.46 | | | 0.35 | |
| Clearance Time (s) | | | | | 4.0 | | | | | | 4.0 | |
| Vehicle Extension (s) | | | | | 2.0 | | | | | | 2.0 | |
| Lane Grp Cap (vph) | | 408 | | | 263 | | | 1081 | | | 613 | |
| v/s Ratio Prot | | c0.03 | | | | | | c0.07 | | | | |
| v/s Ratio Perm | | 0.14 | | | c0.21 | | | 0.25 | | | c0.29 | |
| v/c Ratio | | 0.65 | | | 1.02 | | | 0.70 | | | 0.83 | |
| Uniform Delay, d1 | | 47.4 | | | 56.0 | | | 30.7 | | | 42.0 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 7.8 | | | 59.4 | | | 3.8 | | | 12.1 | |
| Delay (s) | | 55.2 | | | 115.4 | | | 34.5 | | | 54.2 | |
| Level of Service | | E | | | F | | | C | | | D | |
| Approach Delay (s) | | 55.2 | | | 115.4 | | | 34.5 | | | 54.2 | |
| Approach LOS | | E | | | F | | | C | | | D | |

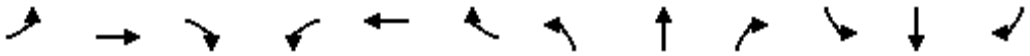
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 55.1 | HCM 2000 Level of Service | E |
| HCM 2000 Volume to Capacity ratio | 0.71 | | |
| Actuated Cycle Length (s) | 142.0 | Sum of lost time (s) | 21.0 |
| Intersection Capacity Utilization | 90.6% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |
| Description: L Street is very wide and during peak hours vehicles form two lanes. | | | |

c Critical Lane Group



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 27 | 109 | 0 | 0 | 214 | 5 | 128 | 11 | 27 | 5 | 0 | 59 |
| Future Volume (vph) | 27 | 109 | 0 | 0 | 214 | 5 | 128 | 11 | 27 | 5 | 0 | 59 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 13 | 12 | 10 | 10 | 12 | 12 | 16 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | | | 0.997 | | | 0.892 | | | 0.876 | |
| Flt Protected | | 0.990 | | | | | 0.950 | | | | 0.996 | |
| Satd. Flow (prot) | 0 | 1378 | 0 | 0 | 1547 | 0 | 1325 | 1243 | 0 | 0 | 1215 | 0 |
| Flt Permitted | | 0.990 | | | | | 0.950 | | | | 0.996 | |
| Satd. Flow (perm) | 0 | 1378 | 0 | 0 | 1547 | 0 | 1325 | 1243 | 0 | 0 | 1215 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 1822 | | | 540 | | | 382 | | | 350 | |
| Travel Time (s) | | 41.4 | | | 12.3 | | | 8.7 | | | 8.0 | |
| Confl. Peds. (#/hr) | 8 | | 18 | 18 | | 8 | 13 | | 28 | 28 | | 13 |
| Confl. Bikes (#/hr) | | | 1 | | | 3 | | | 1 | | | |
| Peak Hour Factor | 0.70 | 0.70 | 0.70 | 0.68 | 0.68 | 0.68 | 0.71 | 0.71 | 0.71 | 0.50 | 0.50 | 0.50 |
| Heavy Vehicles (%) | 9% | 11% | 2% | 0% | 2% | 25% | 3% | 11% | 0% | 17% | 0% | 26% |
| Parking (#/hr) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Adj. Flow (vph) | 39 | 156 | 0 | 0 | 315 | 7 | 180 | 15 | 38 | 10 | 0 | 118 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 195 | 0 | 0 | 322 | 0 | 180 | 53 | 0 | 0 | 128 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 10 | | | 10 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.30 | 1.14 | 1.14 | 1.25 | 1.14 | 1.42 | 1.42 | 1.14 | 1.14 | 1.12 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 47.9% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 27 | 109 | 0 | 0 | 214 | 5 | 128 | 11 | 27 | 5 | 0 | 59 |
| Future Volume (Veh/h) | 27 | 109 | 0 | 0 | 214 | 5 | 128 | 11 | 27 | 5 | 0 | 59 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.70 | 0.70 | 0.70 | 0.68 | 0.68 | 0.68 | 0.71 | 0.71 | 0.71 | 0.50 | 0.50 | 0.50 |
| Hourly flow rate (vph) | 39 | 156 | 0 | 0 | 315 | 7 | 180 | 15 | 38 | 10 | 0 | 118 |
| Pedestrians | | 13 | | | 28 | | | 18 | | | 8 | |
| Lane Width (ft) | | 12.0 | | | 13.0 | | | 10.0 | | | 16.0 | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Percent Blockage | | 1 | | | 3 | | | 1 | | | 1 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 540 | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 330 | | | 174 | | | 702 | 582 | 202 | 634 | 578 | 340 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 330 | | | 174 | | | 702 | 582 | 202 | 634 | 578 | 340 |
| tC, single (s) | 4.2 | | | 4.1 | | | *6.5 | 6.6 | 6.2 | 7.3 | 6.5 | 6.5 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.3 | | | 2.2 | | | 3.5 | 4.1 | 3.3 | 3.7 | 4.0 | 3.5 |
| p0 queue free % | 97 | | | 100 | | | 41 | 96 | 95 | 97 | 100 | 82 |
| cM capacity (veh/h) | 1181 | | | 1397 | | | 304 | 390 | 812 | 318 | 406 | 639 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | SB 1 |
|---|---|---|---|---|---|
| Volume Total | 195 | 322 | 180 | 53 | 128 |
| Volume Left | 39 | 0 | 180 | 0 | 10 |
| Volume Right | 0 | 7 | 0 | 38 | 118 |
| cSH | 1181 | 1700 | 304 | 622 | 592 |
| Volume to Capacity | 0.03 | 0.19 | 0.59 | 0.09 | 0.22 |
| Queue Length 95th (ft) | 3 | 0 | 89 | 7 | 20 |
| Control Delay (s) | 1.9 | 0.0 | 32.7 | 11.3 | 12.7 |
| Lane LOS | A | | D | B | B |
| Approach Delay (s) | 1.9 | 0.0 | 27.9 | | 12.7 |
| Approach LOS | | | D | | B |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 9.7 | | | |
| Intersection Capacity Utilization | 47.9% | ICU Level of Service | | A |
| Analysis Period (min) | 15 | | | |

* User Entered Value



| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 197 | 0 | 0 | 344 | 98 | 11 |
| Future Volume (vph) | 197 | 0 | 0 | 344 | 98 | 11 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 13 | 12 | 12 | 13 | 10 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | | | | | 0.986 | |
| Flt Protected | | | | | 0.957 | |
| Satd. Flow (prot) | 1537 | 0 | 0 | 1750 | 1479 | 0 |
| Flt Permitted | | | | | 0.957 | |
| Satd. Flow (perm) | 1537 | 0 | 0 | 1750 | 1479 | 0 |
| Link Speed (mph) | 30 | | | 30 | 30 | |
| Link Distance (ft) | 576 | | | 561 | 457 | |
| Travel Time (s) | 13.1 | | | 12.8 | 10.4 | |
| Confl. Peds. (#/hr) | | 13 | 13 | | 4 | |
| Confl. Bikes (#/hr) | | 1 | | | | 3 |
| Peak Hour Factor | 0.84 | 0.84 | 0.77 | 0.77 | 0.70 | 0.70 |
| Heavy Vehicles (%) | 15% | 0% | 0% | 1% | 2% | 0% |
| Adj. Flow (vph) | 235 | 0 | 0 | 447 | 140 | 16 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 235 | 0 | 0 | 447 | 156 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(ft) | 0 | | | 0 | 10 | |
| Link Offset(ft) | 0 | | | 0 | 0 | |
| Crosswalk Width(ft) | 16 | | | 16 | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.10 | 1.14 | 1.14 | 1.10 | 1.25 | 1.14 |
| Turning Speed (mph) | | 9 | 15 | | 15 | 9 |
| Sign Control | Free | | | Free | Stop | |

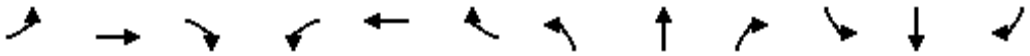
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 33.6% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 197 | 0 | 0 | 344 | 98 | 11 |
| Future Volume (Veh/h) | 197 | 0 | 0 | 344 | 98 | 11 |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.84 | 0.84 | 0.77 | 0.77 | 0.70 | 0.70 |
| Hourly flow rate (vph) | 235 | 0 | 0 | 447 | 140 | 16 |
| Pedestrians | 4 | | | | 13 | |
| Lane Width (ft) | 13.0 | | | | 10.0 | |
| Walking Speed (ft/s) | 4.0 | | | | 4.0 | |
| Percent Blockage | 0 | | | | 1 | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | None | | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | 576 | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | | | 248 | | 699 | 248 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 248 | | 699 | 248 |
| tC, single (s) | | | 4.1 | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.2 | | 3.5 | 3.3 |
| p0 queue free % | | | 100 | | 65 | 98 |
| cM capacity (veh/h) | | | 1318 | | 401 | 788 |

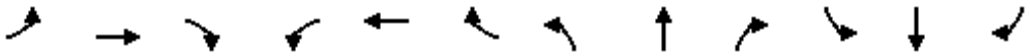
| Direction, Lane # | EB 1 | WB 1 | NB 1 |
|---|---|---|---|
| Volume Total | 235 | 447 | 156 |
| Volume Left | 0 | 0 | 140 |
| Volume Right | 0 | 0 | 16 |
| cSH | 1700 | 1700 | 422 |
| Volume to Capacity | 0.14 | 0.26 | 0.37 |
| Queue Length 95th (ft) | 0 | 0 | 42 |
| Control Delay (s) | 0.0 | 0.0 | 18.4 |
| Lane LOS | | | C |
| Approach Delay (s) | 0.0 | 0.0 | 18.4 |
| Approach LOS | | | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 3.4 | | |
| Intersection Capacity Utilization | 33.6% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 30 | 204 | 0 | 0 | 397 | 224 | 80 | 59 | 5 | 130 | 0 | 73 |
| Future Volume (vph) | 30 | 204 | 0 | 0 | 397 | 224 | 80 | 59 | 5 | 130 | 0 | 73 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 15 | 12 | 12 | 16 | 12 | 12 | 16 | 12 | 12 | 14 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | | | 0.951 | | | 0.995 | | | 0.951 | |
| Flt Protected | | 0.994 | | | | | | 0.973 | | | 0.969 | |
| Satd. Flow (prot) | 0 | 1388 | 0 | 0 | 1752 | 0 | 0 | 1829 | 0 | 0 | 1440 | 0 |
| Flt Permitted | | 0.994 | | | | | | 0.973 | | | 0.969 | |
| Satd. Flow (perm) | 0 | 1388 | 0 | 0 | 1752 | 0 | 0 | 1829 | 0 | 0 | 1440 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 848 | | | 1822 | | | 402 | | | 2052 | |
| Travel Time (s) | | 19.3 | | | 41.4 | | | 9.1 | | | 46.6 | |
| Confl. Peds. (#/hr) | 4 | | | 5 | | 4 | 1 | | 24 | 24 | | 1 |
| Confl. Bikes (#/hr) | | | 2 | | | 6 | | | 9 | | | |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.70 | 0.70 | 0.70 | 0.74 | 0.74 | 0.74 | 0.88 | 0.88 | 0.88 |
| Heavy Vehicles (%) | 9% | 23% | 0% | 0% | 7% | 2% | 1% | 2% | 33% | 11% | 0% | 27% |
| Parking (#/hr) | | 0 | 0 | | | | | | | | | |
| Adj. Flow (vph) | 34 | 232 | 0 | 0 | 567 | 320 | 108 | 80 | 7 | 148 | 0 | 83 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 266 | 0 | 0 | 887 | 0 | 0 | 195 | 0 | 0 | 231 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.16 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 1.05 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |

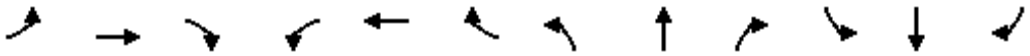
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 63.5% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 30 | 204 | 0 | 0 | 397 | 224 | 80 | 59 | 5 | 130 | 0 | 73 |
| Future Volume (Veh/h) | 30 | 204 | 0 | 0 | 397 | 224 | 80 | 59 | 5 | 130 | 0 | 73 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.70 | 0.70 | 0.70 | 0.74 | 0.74 | 0.74 | 0.88 | 0.88 | 0.88 |
| Hourly flow rate (vph) | 34 | 232 | 0 | 0 | 567 | 320 | 108 | 80 | 7 | 148 | 0 | 83 |
| Pedestrians | | 1 | | | 24 | | | 5 | | | 4 | |
| Lane Width (ft) | | 15.0 | | | 16.0 | | | 16.0 | | | 14.0 | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Percent Blockage | | 0 | | | 3 | | | 1 | | | 0 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 891 | | | 237 | | | 1116 | 1196 | 261 | 1102 | 1036 | 732 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 891 | | | 237 | | | 1116 | 1196 | 261 | 1102 | 1036 | 732 |
| tC, single (s) | 4.2 | | | 4.1 | | | 7.1 | 6.5 | 6.5 | 7.2 | 6.5 | 6.5 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.3 | | | 2.2 | | | 3.5 | 4.0 | 3.6 | 3.6 | 4.0 | 3.5 |
| p0 queue free % | 95 | | | 100 | | | 22 | 54 | 99 | 0 | 100 | 78 |
| cM capacity (veh/h) | 729 | | | 1334 | | | 138 | 176 | 685 | 108 | 220 | 381 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 266 | 887 | 195 | 231 |
| Volume Left | 34 | 0 | 108 | 148 |
| Volume Right | 0 | 320 | 7 | 83 |
| cSH | 729 | 1334 | 156 | 145 |
| Volume to Capacity | 0.05 | 0.00 | 1.25 | 1.59 |
| Queue Length 95th (ft) | 4 | 0 | 283 | 403 |
| Control Delay (s) | 1.8 | 0.0 | 210.2 | 351.3 |
| Lane LOS | A | | F | F |
| Approach Delay (s) | 1.8 | 0.0 | 210.2 | 351.3 |
| Approach LOS | | | F | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 77.6 | | |
| Intersection Capacity Utilization | 63.5% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 32 | 21 | 5 | 5 | 32 | 11 | 21 | 599 | 11 | 21 | 268 | 38 |
| Future Volume (vph) | 32 | 21 | 5 | 5 | 32 | 11 | 21 | 599 | 11 | 21 | 268 | 38 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | 0.95 | | | 0.97 | | | 1.00 | | | 0.98 | |
| Frt | | 0.988 | | | 0.969 | | | 0.998 | | | 0.984 | |
| Flt Protected | | 0.973 | | | 0.995 | | | 0.998 | | | 0.997 | |
| Satd. Flow (prot) | 0 | 1108 | 0 | 0 | 1346 | 0 | 0 | 1410 | 0 | 0 | 1339 | 0 |
| Flt Permitted | | 0.832 | | | 0.974 | | | 0.982 | | | 0.946 | |
| Satd. Flow (perm) | 0 | 902 | 0 | 0 | 1314 | 0 | 0 | 1384 | 0 | 0 | 1269 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 4 | | | 12 | | | 1 | | | 9 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 659 | | | 649 | | | 380 | | | 618 | |
| Travel Time (s) | | 15.0 | | | 14.8 | | | 8.6 | | | 14.0 | |
| Confl. Peds. (#/hr) | 28 | | 11 | 11 | | 28 | 108 | | 63 | 63 | | 108 |
| Confl. Bikes (#/hr) | | | | | | | | | 5 | | | |
| Peak Hour Factor | 0.74 | 0.74 | 0.74 | 0.87 | 0.87 | 0.87 | 0.97 | 0.97 | 0.97 | 0.87 | 0.87 | 0.87 |
| Heavy Vehicles (%) | 31% | 18% | 4% | 0% | 0% | 0% | 6% | 1% | 11% | 0% | 4% | 3% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Adj. Flow (vph) | 43 | 28 | 7 | 6 | 37 | 13 | 22 | 618 | 11 | 24 | 308 | 44 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 78 | 0 | 0 | 56 | 0 | 0 | 651 | 0 | 0 | 376 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |

| Lane Group | Ø2 |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | |
| Future Volume (vph) | |
| Ideal Flow (vphpl) | |
| Lane Width (ft) | |
| Lane Util. Factor | |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Right Turn on Red | |
| Satd. Flow (RTOR) | |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | |
| Heavy Vehicles (%) | |
| Parking (#/hr) | |
| Adj. Flow (vph) | |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | |
| Enter Blocked Intersection | |
| Lane Alignment | |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | |
| Turning Speed (mph) | |
| Number of Detectors | |
| Detector Template | |
| Leading Detector (ft) | |
| Trailing Detector (ft) | |
| Detector 1 Position(ft) | |
| Detector 1 Size(ft) | |
| Detector 1 Type | |
| Detector 1 Channel | |
| Detector 1 Extend (s) | |
| Detector 1 Queue (s) | |
| Detector 1 Delay (s) | |
| Detector 2 Position(ft) | |
| Detector 2 Size(ft) | |
| Detector 2 Type | |
| Detector 2 Channel | |
| Detector 2 Extend (s) | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Detector Phase | 5 | 5 | | 5 | 5 | | 1 | 1 | | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | |
| Minimum Split (s) | 12.0 | 12.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Total Split (s) | 18.0 | 18.0 | | 18.0 | 18.0 | | 54.0 | 54.0 | | 54.0 | 54.0 | |
| Total Split (%) | 17.6% | 17.6% | | 17.6% | 17.6% | | 52.9% | 52.9% | | 52.9% | 52.9% | |
| Maximum Green (s) | 14.0 | 14.0 | | 14.0 | 14.0 | | 50.0 | 50.0 | | 50.0 | 50.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Lost Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lead/Lag | | | | | | | Lead | Lead | | Lead | Lead | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | Max | Max | | Max | Max | | Max | Max | | Max | Max | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 14.3 | | | 14.3 | | | 51.0 | | | 51.0 | |
| Actuated g/C Ratio | | 0.15 | | | 0.15 | | | 0.53 | | | 0.53 | |
| v/c Ratio | | 0.57 | | | 0.27 | | | 0.89 | | | 0.55 | |
| Control Delay | | 57.5 | | | 36.6 | | | 39.5 | | | 21.1 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 57.5 | | | 36.6 | | | 39.5 | | | 21.1 | |
| LOS | | E | | | D | | | D | | | C | |
| Approach Delay | | 57.5 | | | 36.6 | | | 39.5 | | | 21.1 | |
| Approach LOS | | E | | | D | | | D | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 102 | | | |
| Actuated Cycle Length: 96 | | | |
| Natural Cycle: 90 | | | |
| Control Type: Semi Act-Uncoord | | | |
| Maximum v/c Ratio: 0.89 | | | |
| Intersection Signal Delay: 34.6 | | Intersection LOS: C | |
| Intersection Capacity Utilization 59.4% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 11: L Street & E 5th Street



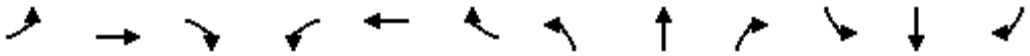
| Lane Group | Ø2 |
|---|---|
| Turn Type | |
| Protected Phases | 2 |
| Permitted Phases | |
| Detector Phase | |
| Switch Phase | |
| Minimum Initial (s) | 4.0 |
| Minimum Split (s) | 30.0 |
| Total Split (s) | 30.0 |
| Total Split (%) | 29% |
| Maximum Green (s) | 26.0 |
| Yellow Time (s) | 3.0 |
| All-Red Time (s) | 1.0 |
| Lost Time Adjust (s) | |
| Total Lost Time (s) | |
| Lead/Lag | Lag |
| Lead-Lag Optimize? | |
| Vehicle Extension (s) | 2.0 |
| Recall Mode | None |
| Walk Time (s) | 14.0 |
| Flash Dont Walk (s) | 12.0 |
| Pedestrian Calls (#/hr) | 53 |
| Act Effct Green (s) | |
| Actuated g/C Ratio | |
| v/c Ratio | |
| Control Delay | |
| Queue Delay | |
| Total Delay | |
| LOS | |
| Approach Delay | |
| Approach LOS | |

| Intersection Summary |
|---|

| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 78 | 56 | 651 | 376 |
| v/c Ratio | 0.57 | 0.27 | 0.89 | 0.55 |
| Control Delay | 57.5 | 36.6 | 39.5 | 21.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 57.5 | 36.6 | 39.5 | 21.1 |
| Queue Length 50th (ft) | 46 | 26 | 392 | 166 |
| Queue Length 95th (ft) | 77 | 62 | #644 | 252 |
| Internal Link Dist (ft) | 579 | 569 | 300 | 538 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 137 | 205 | 735 | 678 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.57 | 0.27 | 0.89 | 0.55 |

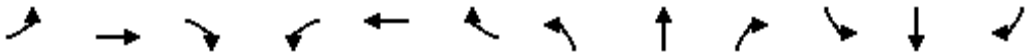
Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 32 | 21 | 5 | 5 | 32 | 11 | 21 | 599 | 11 | 21 | 268 | 38 |
| Future Volume (vph) | 32 | 21 | 5 | 5 | 32 | 11 | 21 | 599 | 11 | 21 | 268 | 38 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Total Lost time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Frpb, ped/bikes | | 0.99 | | | 0.97 | | | 1.00 | | | 0.99 | |
| Flpb, ped/bikes | | 0.95 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Frt | | 0.99 | | | 0.97 | | | 1.00 | | | 0.98 | |
| Flt Protected | | 0.97 | | | 0.99 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | | 1058 | | | 1343 | | | 1407 | | | 1339 | |
| Flt Permitted | | 0.83 | | | 0.97 | | | 0.98 | | | 0.95 | |
| Satd. Flow (perm) | | 904 | | | 1315 | | | 1384 | | | 1271 | |
| Peak-hour factor, PHF | 0.74 | 0.74 | 0.74 | 0.87 | 0.87 | 0.87 | 0.97 | 0.97 | 0.97 | 0.87 | 0.87 | 0.87 |
| Adj. Flow (vph) | 43 | 28 | 7 | 6 | 37 | 13 | 22 | 618 | 11 | 24 | 308 | 44 |
| RTOR Reduction (vph) | 0 | 3 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 4 | 0 |
| Lane Group Flow (vph) | 0 | 75 | 0 | 0 | 46 | 0 | 0 | 651 | 0 | 0 | 372 | 0 |
| Confl. Peds. (#/hr) | 28 | | 11 | 11 | | 28 | 108 | | 63 | 63 | | 108 |
| Confl. Bikes (#/hr) | | | | | | | | | 5 | | | |
| Heavy Vehicles (%) | 31% | 18% | 4% | 0% | 0% | 0% | 6% | 1% | 11% | 0% | 4% | 3% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 14.3 | | | 14.3 | | | 51.0 | | | 51.0 | |
| Effective Green, g (s) | | 14.3 | | | 14.3 | | | 51.0 | | | 51.0 | |
| Actuated g/C Ratio | | 0.15 | | | 0.15 | | | 0.53 | | | 0.53 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | | | 2.0 | | | 2.0 | |
| Lane Grp Cap (vph) | | 133 | | | 194 | | | 728 | | | 668 | |
| v/s Ratio Prot | | | | | | | | | | | | |
| v/s Ratio Perm | | c0.08 | | | 0.03 | | | c0.47 | | | 0.29 | |
| v/c Ratio | | 0.56 | | | 0.24 | | | 0.89 | | | 0.56 | |
| Uniform Delay, d1 | | 38.4 | | | 36.5 | | | 20.5 | | | 15.4 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 16.0 | | | 2.8 | | | 15.6 | | | 3.3 | |
| Delay (s) | | 54.4 | | | 39.3 | | | 36.2 | | | 18.7 | |
| Level of Service | | D | | | D | | | D | | | B | |
| Approach Delay (s) | | 54.4 | | | 39.3 | | | 36.2 | | | 18.7 | |
| Approach LOS | | D | | | D | | | D | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 31.9 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.63 | | |
| Actuated Cycle Length (s) | 96.9 | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 59.4% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 27 | 16 | 5 | 5 | 27 | 11 | 16 | 540 | 5 | 11 | 204 | 16 |
| Future Volume (vph) | 27 | 16 | 5 | 5 | 27 | 11 | 16 | 540 | 5 | 11 | 204 | 16 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 16 | 12 | 12 | 15 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | 0.98 | | | 0.99 | | | 1.00 | | | 0.99 | |
| Frt | | 0.987 | | | 0.966 | | | 0.999 | | | 0.991 | |
| Flt Protected | | 0.973 | | | 0.994 | | | 0.999 | | | 0.998 | |
| Satd. Flow (prot) | 0 | 1491 | 0 | 0 | 1328 | 0 | 0 | 1577 | 0 | 0 | 1500 | 0 |
| Flt Permitted | | 0.847 | | | 0.977 | | | 0.990 | | | 0.974 | |
| Satd. Flow (perm) | 0 | 1280 | 0 | 0 | 1304 | 0 | 0 | 1560 | 0 | 0 | 1463 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 6 | | | 18 | | | 1 | | | 10 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 602 | | | 677 | | | 676 | | | 535 | |
| Travel Time (s) | | 13.7 | | | 15.4 | | | 15.4 | | | 12.2 | |
| Confl. Peds. (#/hr) | 11 | | 3 | 3 | | 11 | 32 | | 19 | 19 | | 32 |
| Confl. Bikes (#/hr) | | | | | | 2 | | | 1 | | | |
| Peak Hour Factor | 0.78 | 0.78 | 0.78 | 0.60 | 0.60 | 0.60 | 0.94 | 0.94 | 0.94 | 0.89 | 0.89 | 0.89 |
| Heavy Vehicles (%) | 4% | 29% | 0% | 0% | 33% | 0% | 0% | 1% | 0% | 9% | 4% | 8% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | | | | | |
| Adj. Flow (vph) | 35 | 21 | 6 | 8 | 45 | 18 | 17 | 574 | 5 | 12 | 229 | 18 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 62 | 0 | 0 | 71 | 0 | 0 | 596 | 0 | 0 | 259 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.12 | 1.14 | 1.14 | 1.16 | 1.14 | 1.14 | 1.25 | 1.14 | 1.14 | 1.25 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Detector Phase | 5 | 5 | | 5 | 5 | | 1 | 1 | | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 6.0 | 6.0 | | 6.0 | 6.0 | | 20.0 | 20.0 | | 20.0 | 20.0 | |
| Minimum Split (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 24.0 | 24.0 | | 24.0 | 24.0 | |
| Total Split (s) | 24.0 | 24.0 | | 24.0 | 24.0 | | 54.0 | 54.0 | | 54.0 | 54.0 | |
| Total Split (%) | 30.8% | 30.8% | | 30.8% | 30.8% | | 69.2% | 69.2% | | 69.2% | 69.2% | |
| Maximum Green (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 50.0 | 50.0 | | 50.0 | 50.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Lost Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | Max | Max | | Max | Max | | Max | Max | | Max | Max | |
| Walk Time (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | |
| Flash Dont Walk (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | |
| Pedestrian Calls (#/hr) | 4 | 4 | | 4 | 4 | | 13 | 13 | | 13 | 13 | |
| Act Effct Green (s) | | 20.0 | | | 20.0 | | | 50.0 | | | 50.0 | |
| Actuated g/C Ratio | | 0.26 | | | 0.26 | | | 0.64 | | | 0.64 | |
| v/c Ratio | | 0.19 | | | 0.20 | | | 0.60 | | | 0.28 | |
| Control Delay | | 22.7 | | | 19.9 | | | 11.2 | | | 6.8 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 22.7 | | | 19.9 | | | 11.2 | | | 6.8 | |
| LOS | | C | | | B | | | B | | | A | |
| Approach Delay | | 22.7 | | | 19.9 | | | 11.2 | | | 6.8 | |
| Approach LOS | | C | | | B | | | B | | | A | |

**Intersection Summary**

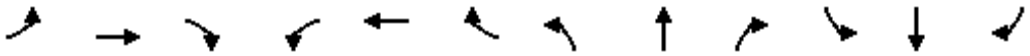
Area Type: CBD
Cycle Length: 78
Actuated Cycle Length: 78
Natural Cycle: 55
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.60
Intersection Signal Delay: 11.4 Intersection LOS: B
Intersection Capacity Utilization 58.0% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 12: L Street & E 8th Street



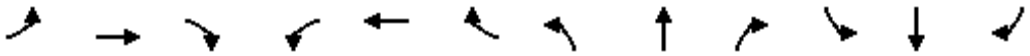
| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 62 | 71 | 596 | 259 |
| v/c Ratio | 0.19 | 0.20 | 0.60 | 0.28 |
| Control Delay | 22.7 | 19.9 | 11.2 | 6.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 22.7 | 19.9 | 11.2 | 6.8 |
| Queue Length 50th (ft) | 21 | 20 | 147 | 46 |
| Queue Length 95th (ft) | 44 | 31 | 240 | 79 |
| Internal Link Dist (ft) | 522 | 597 | 596 | 455 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 332 | 347 | 1000 | 941 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.19 | 0.20 | 0.60 | 0.28 |

Intersection Summary



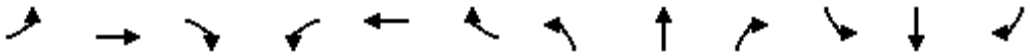
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 27 | 16 | 5 | 5 | 27 | 11 | 16 | 540 | 5 | 11 | 204 | 16 |
| Future Volume (vph) | 27 | 16 | 5 | 5 | 27 | 11 | 16 | 540 | 5 | 11 | 204 | 16 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 16 | 12 | 12 | 15 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Total Lost time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Frpb, ped/bikes | | 1.00 | | | 0.99 | | | 1.00 | | | 0.99 | |
| Flpb, ped/bikes | | 0.99 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Frt | | 0.99 | | | 0.97 | | | 1.00 | | | 0.99 | |
| Flt Protected | | 0.97 | | | 0.99 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | | 1470 | | | 1327 | | | 1574 | | | 1498 | |
| Flt Permitted | | 0.85 | | | 0.98 | | | 0.99 | | | 0.97 | |
| Satd. Flow (perm) | | 1280 | | | 1304 | | | 1560 | | | 1463 | |
| Peak-hour factor, PHF | 0.78 | 0.78 | 0.78 | 0.60 | 0.60 | 0.60 | 0.94 | 0.94 | 0.94 | 0.89 | 0.89 | 0.89 |
| Adj. Flow (vph) | 35 | 21 | 6 | 8 | 45 | 18 | 17 | 574 | 5 | 12 | 229 | 18 |
| RTOR Reduction (vph) | 0 | 4 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 4 | 0 |
| Lane Group Flow (vph) | 0 | 58 | 0 | 0 | 58 | 0 | 0 | 596 | 0 | 0 | 255 | 0 |
| Confl. Peds. (#/hr) | 11 | | 3 | 3 | | 11 | 32 | | 19 | 19 | | 32 |
| Confl. Bikes (#/hr) | | | | | | 2 | | | 1 | | | |
| Heavy Vehicles (%) | 4% | 29% | 0% | 0% | 33% | 0% | 0% | 1% | 0% | 9% | 4% | 8% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 20.0 | | | 20.0 | | | 50.0 | | | 50.0 | |
| Effective Green, g (s) | | 20.0 | | | 20.0 | | | 50.0 | | | 50.0 | |
| Actuated g/C Ratio | | 0.26 | | | 0.26 | | | 0.64 | | | 0.64 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | | | 2.0 | | | 2.0 | |
| Lane Grp Cap (vph) | | 328 | | | 334 | | | 1000 | | | 937 | |
| v/s Ratio Prot | | | | | | | | | | | | |
| v/s Ratio Perm | | c0.04 | | | 0.04 | | | c0.38 | | | 0.17 | |
| v/c Ratio | | 0.18 | | | 0.17 | | | 0.60 | | | 0.27 | |
| Uniform Delay, d1 | | 22.6 | | | 22.6 | | | 8.1 | | | 6.1 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 1.2 | | | 1.1 | | | 2.6 | | | 0.7 | |
| Delay (s) | | 23.7 | | | 23.7 | | | 10.7 | | | 6.8 | |
| Level of Service | | C | | | C | | | B | | | A | |
| Approach Delay (s) | | 23.7 | | | 23.7 | | | 10.7 | | | 6.8 | |
| Approach LOS | | C | | | C | | | B | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 11.5 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.48 | | |
| Actuated Cycle Length (s) | 78.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 58.0% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 5 | 5 | 5 | 16 | 5 | 27 | 492 | 5 | 0 | 156 | 16 |
| Future Volume (vph) | 0 | 5 | 5 | 5 | 16 | 5 | 27 | 492 | 5 | 0 | 156 | 16 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | 0.932 | | | 0.975 | | | 0.999 | | | 0.988 | |
| Flt Protected | | | | | 0.991 | | | 0.997 | | | | |
| Satd. Flow (prot) | 0 | 1771 | 0 | 0 | 1836 | 0 | 0 | 1892 | 0 | 0 | 1877 | 0 |
| Flt Permitted | | | | | 0.991 | | | 0.997 | | | | |
| Satd. Flow (perm) | 0 | 1771 | 0 | 0 | 1836 | 0 | 0 | 1892 | 0 | 0 | 1877 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 487 | | | 392 | | | 93 | | | 676 | |
| Travel Time (s) | | 11.1 | | | 8.9 | | | 2.1 | | | 15.4 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 0 | 5 | 5 | 5 | 17 | 5 | 29 | 535 | 5 | 0 | 170 | 17 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 10 | 0 | 0 | 27 | 0 | 0 | 569 | 0 | 0 | 187 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |

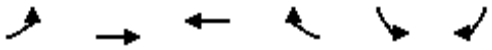
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 52.4% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |



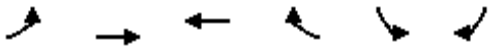
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 5 | 5 | 5 | 16 | 5 | 27 | 492 | 5 | 0 | 156 | 16 |
| Future Volume (Veh/h) | 0 | 5 | 5 | 5 | 16 | 5 | 27 | 492 | 5 | 0 | 156 | 16 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 0 | 5 | 5 | 5 | 17 | 5 | 29 | 535 | 5 | 0 | 170 | 17 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | 676 | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 788 | 776 | 178 | 782 | 782 | 538 | 187 | | | 540 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 788 | 776 | 178 | 782 | 782 | 538 | 187 | | | 540 | | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 100 | 98 | 99 | 98 | 95 | 99 | 98 | | | 100 | | |
| cM capacity (veh/h) | 292 | 324 | 870 | 304 | 321 | 547 | 1399 | | | 1039 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 10 | 27 | 569 | 187 |
| Volume Left | 0 | 5 | 29 | 0 |
| Volume Right | 5 | 5 | 5 | 17 |
| cSH | 472 | 344 | 1399 | 1039 |
| Volume to Capacity | 0.02 | 0.08 | 0.02 | 0.00 |
| Queue Length 95th (ft) | 2 | 6 | 2 | 0 |
| Control Delay (s) | 12.8 | 16.4 | 0.6 | 0.0 |
| Lane LOS | B | C | A | |
| Approach Delay (s) | 12.8 | 16.4 | 0.6 | 0.0 |
| Approach LOS | B | C | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 1.2 | | | |
| Intersection Capacity Utilization | 52.4% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR | Ø2 |
|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | |
| Traffic Volume (vph) | 517 | 357 | 304 | 7 | 0 | 0 | |
| Future Volume (vph) | 517 | 357 | 304 | 7 | 0 | 0 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Lane Util. Factor | 0.95 | 0.95 | 0.95 | 0.95 | 1.00 | 1.00 | |
| Frt | | | 0.996 | | | | |
| Flt Protected | | 0.971 | | | | | |
| Satd. Flow (prot) | 0 | 3505 | 3596 | 0 | 0 | 0 | |
| Flt Permitted | | 0.618 | | | | | |
| Satd. Flow (perm) | 0 | 2231 | 3596 | 0 | 0 | 0 | |
| Right Turn on Red | | | | Yes | | Yes | |
| Satd. Flow (RTOR) | | | 5 | | | | |
| Link Speed (mph) | | 30 | 30 | | 30 | | |
| Link Distance (ft) | | 289 | 295 | | 140 | | |
| Travel Time (s) | | 6.6 | 6.7 | | 3.2 | | |
| Peak Hour Factor | 0.85 | 0.85 | 0.73 | 0.73 | 0.92 | 0.92 | |
| Adj. Flow (vph) | 608 | 420 | 416 | 10 | 0 | 0 | |
| Shared Lane Traffic (%) | | | | | | | |
| Lane Group Flow (vph) | 0 | 1028 | 426 | 0 | 0 | 0 | |
| Enter Blocked Intersection | No | No | No | No | No | No | |
| Lane Alignment | Left | Left | Left | Right | Left | Right | |
| Median Width(ft) | | 0 | 0 | | 0 | | |
| Link Offset(ft) | | 0 | 0 | | 0 | | |
| Crosswalk Width(ft) | | 16 | 16 | | 16 | | |
| Two way Left Turn Lane | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Turning Speed (mph) | 15 | | | 9 | 15 | 9 | |
| Number of Detectors | 1 | 2 | 2 | | | | |
| Detector Template | Left | Thru | Thru | | | | |
| Leading Detector (ft) | 20 | 100 | 100 | | | | |
| Trailing Detector (ft) | 0 | 0 | 0 | | | | |
| Detector 1 Position(ft) | 0 | 0 | 0 | | | | |
| Detector 1 Size(ft) | 20 | 6 | 6 | | | | |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | | | | |
| Detector 1 Channel | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | | | | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | | | | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | | | | |
| Detector 2 Position(ft) | | 94 | 94 | | | | |
| Detector 2 Size(ft) | | 6 | 6 | | | | |
| Detector 2 Type | | Cl+Ex | Cl+Ex | | | | |
| Detector 2 Channel | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | 0.0 | | | | |
| Turn Type | Perm | NA | NA | | | | |
| Protected Phases | | 1 | 1 | | | | 2 |
| Permitted Phases | 1 | | | | | | |
| Detector Phase | 1 | 1 | 1 | | | | |
| Switch Phase | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | 8.0 | | | | 10.0 |



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR | Ø2 |
|---|---|---|---|---|---|---|---|
| Minimum Split (s) | 22.0 | 22.0 | 22.0 | | | | 25.0 |
| Total Split (s) | 70.0 | 70.0 | 70.0 | | | | 25.0 |
| Total Split (%) | 73.7% | 73.7% | 73.7% | | | | 26% |
| Maximum Green (s) | 62.6 | 62.6 | 62.6 | | | | 20.5 |
| Yellow Time (s) | 5.4 | 5.4 | 5.4 | | | | 3.5 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | | | 1.0 |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | | | |
| Total Lost Time (s) | | 7.4 | 7.4 | | | | |
| Lead/Lag | Lead | Lead | Lead | | | | Lag |
| Lead-Lag Optimize? | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | | | | 2.0 |
| Recall Mode | Max | Max | Max | | | | None |
| Walk Time (s) | | | | | | | 18.0 |
| Flash Dont Walk (s) | | | | | | | 1.0 |
| Pedestrian Calls (#/hr) | | | | | | | 24 |
| Act Effct Green (s) | | 83.6 | 83.6 | | | | |
| Actuated g/C Ratio | | 0.89 | 0.89 | | | | |
| v/c Ratio | | 0.52 | 0.13 | | | | |
| Control Delay | | 5.5 | 2.7 | | | | |
| Queue Delay | | 0.0 | 0.0 | | | | |
| Total Delay | | 5.5 | 2.7 | | | | |
| LOS | | A | A | | | | |
| Approach Delay | | 5.5 | 2.7 | | | | |
| Approach LOS | | A | A | | | | |

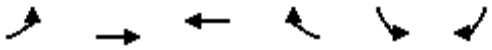
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 95 | | | |
| Actuated Cycle Length: 94.4 | | | |
| Natural Cycle: 65 | | | |
| Control Type: Semi Act-Uncoord | | | |
| Maximum v/c Ratio: 0.52 | | | |
| Intersection Signal Delay: 4.6 | | Intersection LOS: A | |
| Intersection Capacity Utilization 49.6% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 14: Day Blvd Ped



| Lane Group | EBT | WBT |
|---|---|---|
| Lane Group Flow (vph) | 1028 | 426 |
| v/c Ratio | 0.52 | 0.13 |
| Control Delay | 5.5 | 2.7 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 5.5 | 2.7 |
| Queue Length 50th (ft) | 0 | 0 |
| Queue Length 95th (ft) | 209 | 46 |
| Internal Link Dist (ft) | 209 | 215 |
| Turn Bay Length (ft) | | |
| Base Capacity (vph) | 1977 | 3187 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.52 | 0.13 |

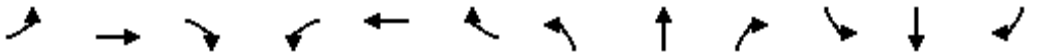
Intersection Summary



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 517 | 357 | 304 | 7 | 0 | 0 |
| Future Volume (vph) | 517 | 357 | 304 | 7 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 7.4 | 7.4 | | | |
| Lane Util. Factor | | 0.95 | 0.95 | | | |
| Frt | | 1.00 | 1.00 | | | |
| Flt Protected | | 0.97 | 1.00 | | | |
| Satd. Flow (prot) | | 3506 | 3597 | | | |
| Flt Permitted | | 0.62 | 1.00 | | | |
| Satd. Flow (perm) | | 2231 | 3597 | | | |
| Peak-hour factor, PHF | 0.85 | 0.85 | 0.73 | 0.73 | 0.92 | 0.92 |
| Adj. Flow (vph) | 608 | 420 | 416 | 10 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 1 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 1028 | 425 | 0 | 0 | 0 |
| Turn Type | Perm | NA | NA | | | |
| Protected Phases | | 1 | 1 | | | |
| Permitted Phases | 1 | | | | | |
| Actuated Green, G (s) | | 78.7 | 78.7 | | | |
| Effective Green, g (s) | | 78.7 | 78.7 | | | |
| Actuated g/C Ratio | | 0.81 | 0.81 | | | |
| Clearance Time (s) | | 7.4 | 7.4 | | | |
| Vehicle Extension (s) | | 2.0 | 2.0 | | | |
| Lane Grp Cap (vph) | | 1806 | 2912 | | | |
| v/s Ratio Prot | | | 0.12 | | | |
| v/s Ratio Perm | | c0.46 | | | | |
| v/c Ratio | | 0.57 | 0.15 | | | |
| Uniform Delay, d1 | | 3.3 | 2.0 | | | |
| Progression Factor | | 1.00 | 1.00 | | | |
| Incremental Delay, d2 | | 1.3 | 0.1 | | | |
| Delay (s) | | 4.6 | 2.1 | | | |
| Level of Service | | A | A | | | |
| Approach Delay (s) | | 4.6 | 2.1 | | 0.0 | |
| Approach LOS | | A | A | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 3.8 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.53 | | |
| Actuated Cycle Length (s) | 97.2 | Sum of lost time (s) | 11.9 |
| Intersection Capacity Utilization | 49.6% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



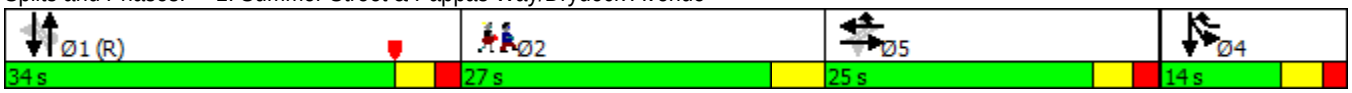
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 69 | 40 | 16 | 278 | 125 | 328 | 11 | 647 | 145 | 93 | 968 | 235 |
| Future Volume (vph) | 69 | 40 | 16 | 278 | 125 | 328 | 11 | 647 | 145 | 93 | 968 | 235 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 14 | 12 | 12 | 13 | 16 | 10 | 11 | 12 | 13 | 12 | 12 |
| Storage Length (ft) | 0 | | 0 | 350 | | 0 | 70 | | 0 | 350 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor | | 0.99 | | | 0.98 | | 0.98 | 0.99 | | 0.99 | 0.96 | |
| Frt | | 0.983 | | | | 0.850 | | 0.973 | | | 0.971 | |
| Flt Protected | | 0.973 | | | 0.967 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1644 | 0 | 0 | 1703 | 1569 | 1516 | 2946 | 0 | 1569 | 2940 | 0 |
| Flt Permitted | | 0.338 | | | 0.708 | | 0.146 | | | 0.146 | | |
| Satd. Flow (perm) | 0 | 568 | 0 | 0 | 1218 | 1569 | 228 | 2946 | 0 | 240 | 2940 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 7 | | | | 360 | | 27 | | | 37 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 745 | | | 950 | | | 1510 | | | 501 | |
| Travel Time (s) | | 16.9 | | | 21.6 | | | 34.3 | | | 11.4 | |
| Confl. Peds. (#/hr) | 21 | | 33 | 33 | | 21 | 138 | | 34 | 34 | | 138 |
| Confl. Bikes (#/hr) | | | 1 | | | 1 | | | 2 | | | 25 |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.91 | 0.91 | 0.91 | 0.90 | 0.90 | 0.90 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 6% | 3% | 8% | 0% | 1% | 5% | 0% | 3% | 2% | 7% | 3% | 4% |
| Adj. Flow (vph) | 81 | 47 | 19 | 305 | 137 | 360 | 12 | 719 | 161 | 100 | 1041 | 253 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 147 | 0 | 0 | 442 | 360 | 12 | 880 | 0 | 100 | 1294 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 6 | | | 13 | | | 17 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.05 | 1.14 | 1.14 | 1.10 | 0.97 | 1.25 | 1.19 | 1.14 | 1.10 | 1.14 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | 20 | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | 20 | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |

| Lane Group | Ø2 |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | |
| Future Volume (vph) | |
| Ideal Flow (vphpl) | |
| Lane Width (ft) | |
| Storage Length (ft) | |
| Storage Lanes | |
| Taper Length (ft) | |
| Lane Util. Factor | |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Right Turn on Red | |
| Satd. Flow (RTOR) | |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | |
| Heavy Vehicles (%) | |
| Adj. Flow (vph) | |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | |
| Enter Blocked Intersection | |
| Lane Alignment | |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | |
| Turning Speed (mph) | |
| Number of Detectors | |
| Detector Template | |
| Leading Detector (ft) | |
| Trailing Detector (ft) | |
| Detector 1 Position(ft) | |
| Detector 1 Size(ft) | |
| Detector 1 Type | |
| Detector 1 Channel | |
| Detector 1 Extend (s) | |
| Detector 1 Queue (s) | |
| Detector 1 Delay (s) | |
| Detector 2 Position(ft) | |
| Detector 2 Size(ft) | |
| Detector 2 Type | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | pt+ov | Perm | NA | | D.P+P | NA | |
| Protected Phases | | 5 | | | 5 | 5 4 | | 1 | | 4 | 1 4 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Detector Phase | 5 | 5 | | 5 | 5 | 5 4 | 1 | 1 | | 4 | 1 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | | |
| Minimum Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | | 13.0 | 13.0 | | 13.0 | | |
| Total Split (s) | 25.0 | 25.0 | | 25.0 | 25.0 | | 34.0 | 34.0 | | 14.0 | | |
| Total Split (%) | 25.0% | 25.0% | | 25.0% | 25.0% | | 34.0% | 34.0% | | 14.0% | | |
| Maximum Green (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 29.0 | 29.0 | | 9.0 | | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | 0.0 | 0.0 | | 0.0 | | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | 5.0 | 5.0 | | 5.0 | | |
| Lead/Lag | | | | | | | Lead | Lead | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | | |
| Recall Mode | None | None | | None | None | | C-Max | C-Max | | None | | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 30.8 | | | 30.8 | 44.8 | 29.0 | 29.0 | | 38.0 | 43.0 | |
| Actuated g/C Ratio | | 0.31 | | | 0.31 | 0.45 | 0.29 | 0.29 | | 0.38 | 0.43 | |
| v/c Ratio | | 0.82 | | | 1.18 | 0.40 | 0.18 | 1.01 | | 0.48 | 1.01 | |
| Control Delay | | 71.7 | | | 140.3 | 4.1 | 34.9 | 67.7 | | 25.5 | 55.4 | |
| Queue Delay | | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | | 71.7 | | | 140.3 | 4.1 | 34.9 | 67.7 | | 25.5 | 55.4 | |
| LOS | | E | | | F | A | C | E | | C | E | |
| Approach Delay | | 71.7 | | | 79.1 | | | 67.3 | | | 53.3 | |
| Approach LOS | | E | | | E | | | E | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 100 | | | |
| Actuated Cycle Length: 100 | | | |
| Offset: 0 (0%), Referenced to phase 1:NBSB, Start of Yellow | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 1.18 | | | |
| Intersection Signal Delay: 64.4 | | Intersection LOS: E | |
| Intersection Capacity Utilization 95.2% | | ICU Level of Service F | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 1: Summer Street & Pappas Way/Drydock Avenue



| Lane Group | Ø2 |
|---|---|
| Detector 2 Channel | |
| Detector 2 Extend (s) | |
| Turn Type | |
| Protected Phases | 2 |
| Permitted Phases | |
| Detector Phase | |
| Switch Phase | |
| Minimum Initial (s) | 4.0 |
| Minimum Split (s) | 27.0 |
| Total Split (s) | 27.0 |
| Total Split (%) | 27% |
| Maximum Green (s) | 23.0 |
| Yellow Time (s) | 4.0 |
| All-Red Time (s) | 0.0 |
| Lost Time Adjust (s) | |
| Total Lost Time (s) | |
| Lead/Lag | Lag |
| Lead-Lag Optimize? | |
| Vehicle Extension (s) | 2.0 |
| Recall Mode | None |
| Walk Time (s) | 7.0 |
| Flash Dont Walk (s) | 16.0 |
| Pedestrian Calls (#/hr) | 28 |
| Act Effct Green (s) | |
| Actuated g/C Ratio | |
| v/c Ratio | |
| Control Delay | |
| Queue Delay | |
| Total Delay | |
| LOS | |
| Approach Delay | |
| Approach LOS | |

| Intersection Summary |
|---|



| Lane Group | EBT | WBT | WBR | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 147 | 442 | 360 | 12 | 880 | 100 | 1294 |
| v/c Ratio | 0.82 | 1.18 | 0.40 | 0.18 | 1.01 | 0.48 | 1.01 |
| Control Delay | 71.7 | 140.3 | 4.1 | 34.9 | 67.7 | 25.5 | 55.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 71.7 | 140.3 | 4.1 | 34.9 | 67.7 | 25.5 | 55.4 |
| Queue Length 50th (ft) | ~113 | ~427 | 0 | 6 | ~291 | 38 | ~423 |
| Queue Length 95th (ft) | #222 | #618 | 60 | 23 | #430 | 72 | #585 |
| Internal Link Dist (ft) | 665 | 870 | | | 1430 | | 421 |
| Turn Bay Length (ft) | | | | 70 | | 350 | |
| Base Capacity (vph) | 179 | 375 | 901 | 66 | 873 | 210 | 1285 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.82 | 1.18 | 0.40 | 0.18 | 1.01 | 0.48 | 1.01 |

Intersection Summary

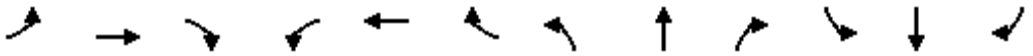
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 69 | 40 | 16 | 278 | 125 | 328 | 11 | 647 | 145 | 93 | 968 | 235 |
| Future Volume (vph) | 69 | 40 | 16 | 278 | 125 | 328 | 11 | 647 | 145 | 93 | 968 | 235 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 14 | 12 | 12 | 13 | 16 | 10 | 11 | 12 | 13 | 12 | 12 |
| Total Lost time (s) | | 5.0 | | | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | 1.00 | 1.00 | 0.95 | | 1.00 | 0.95 | |
| Frpb, ped/bikes | | 0.99 | | | 1.00 | 1.00 | 1.00 | 0.99 | | 1.00 | 0.96 | |
| Flpb, ped/bikes | | 1.00 | | | 0.98 | 1.00 | 0.98 | 1.00 | | 1.00 | 1.00 | |
| Frt | | 0.98 | | | 1.00 | 0.85 | 1.00 | 0.97 | | 1.00 | 0.97 | |
| Flt Protected | | 0.97 | | | 0.97 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 1640 | | | 1674 | 1569 | 1485 | 2944 | | 1568 | 2935 | |
| Flt Permitted | | 0.34 | | | 0.71 | 1.00 | 0.15 | 1.00 | | 0.15 | 1.00 | |
| Satd. Flow (perm) | | 570 | | | 1226 | 1569 | 228 | 2944 | | 241 | 2935 | |
| Peak-hour factor, PHF | 0.85 | 0.85 | 0.85 | 0.91 | 0.91 | 0.91 | 0.90 | 0.90 | 0.90 | 0.93 | 0.93 | 0.93 |
| Adj. Flow (vph) | 81 | 47 | 19 | 305 | 137 | 360 | 12 | 719 | 161 | 100 | 1041 | 253 |
| RTOR Reduction (vph) | 0 | 5 | 0 | 0 | 0 | 199 | 0 | 20 | 0 | 0 | 22 | 0 |
| Lane Group Flow (vph) | 0 | 142 | 0 | 0 | 442 | 161 | 12 | 860 | 0 | 100 | 1272 | 0 |
| Confl. Peds. (#/hr) | 21 | | 33 | 33 | | 21 | 138 | | 34 | 34 | | 138 |
| Confl. Bikes (#/hr) | | | 1 | | | 1 | | | 2 | | | 25 |
| Heavy Vehicles (%) | 6% | 3% | 8% | 0% | 1% | 5% | 0% | 3% | 2% | 7% | 3% | 4% |
| Turn Type | Perm | NA | | Perm | NA | pt+ov | Perm | NA | | D.P+P | NA | |
| Protected Phases | | 5 | | | 5 | 5 4 | | 1 | | 4 | 1 4 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 30.8 | | | 30.8 | 44.8 | 27.4 | 27.4 | | 36.4 | 41.4 | |
| Effective Green, g (s) | | 30.8 | | | 30.8 | 44.8 | 27.4 | 27.4 | | 36.4 | 41.4 | |
| Actuated g/C Ratio | | 0.31 | | | 0.31 | 0.45 | 0.27 | 0.27 | | 0.36 | 0.41 | |
| Clearance Time (s) | | 5.0 | | | 5.0 | | 5.0 | 5.0 | | 5.0 | | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | | 2.0 | 2.0 | | 2.0 | | |
| Lane Grp Cap (vph) | | 175 | | | 377 | 702 | 62 | 806 | | 207 | 1215 | |
| v/s Ratio Prot | | | | | | 0.10 | | 0.29 | | 0.04 | c0.43 | |
| v/s Ratio Perm | | 0.25 | | | c0.36 | | 0.05 | | | 0.13 | | |
| v/c Ratio | | 0.81 | | | 1.17 | 0.23 | 0.19 | 1.07 | | 0.48 | 1.05 | |
| Uniform Delay, d1 | | 31.9 | | | 34.6 | 17.0 | 27.8 | 36.3 | | 23.9 | 29.3 | |
| Progression Factor | | 1.00 | | | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 23.0 | | | 102.2 | 0.1 | 6.8 | 51.3 | | 0.6 | 39.1 | |
| Delay (s) | | 55.0 | | | 136.8 | 17.0 | 34.7 | 87.6 | | 24.5 | 68.4 | |
| Level of Service | | D | | | F | B | C | F | | C | E | |
| Approach Delay (s) | | 55.0 | | | 83.1 | | | 86.9 | | | 65.2 | |
| Approach LOS | | D | | | F | | | F | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 75.2 | HCM 2000 Level of Service | E |
| HCM 2000 Volume to Capacity ratio | 0.98 | | |
| Actuated Cycle Length (s) | 100.0 | Sum of lost time (s) | 19.0 |
| Intersection Capacity Utilization | 95.2% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

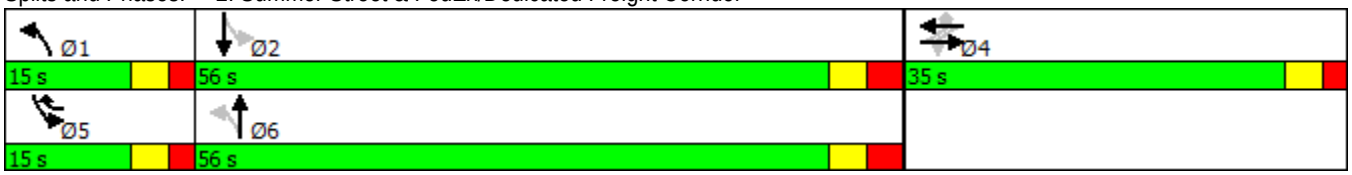


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 21 | 0 | 5 | 16 | 0 | 10 | 5 | 770 | 5 | 0 | 1246 | 16 |
| Future Volume (vph) | 21 | 0 | 5 | 16 | 0 | 10 | 5 | 770 | 5 | 0 | 1246 | 16 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 13 | 13 | 13 | 12 | 12 | 12 | 10 | 10 | 10 | 11 | 11 | 11 |
| Storage Length (ft) | 0 | | 0 | 0 | | 60 | 60 | | 0 | 120 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 50 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Frt | | 0.976 | | | | 0.850 | | 0.999 | | | 0.998 | |
| Flt Protected | | 0.961 | | | 0.950 | | 0.950 | | | | | |
| Satd. Flow (prot) | 0 | 1657 | 0 | 0 | 1624 | 727 | 1516 | 3029 | 0 | 826 | 3044 | 0 |
| Flt Permitted | | 0.752 | | | 0.739 | | 0.165 | | | | | |
| Satd. Flow (perm) | 0 | 1297 | 0 | 0 | 1264 | 727 | 263 | 3029 | 0 | 826 | 3044 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 82 | | | | 31 | | 1 | | | 2 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 228 | | | 352 | | | 665 | | | 1510 | |
| Travel Time (s) | | 5.2 | | | 8.0 | | | 15.1 | | | 34.3 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 100% | 0% | 0% | 0% | 100% | 3% | 0% |
| Adj. Flow (vph) | 23 | 0 | 5 | 17 | 0 | 11 | 5 | 837 | 5 | 0 | 1354 | 17 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 28 | 0 | 0 | 17 | 11 | 5 | 842 | 0 | 0 | 1371 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 12 | | | 11 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.10 | 1.10 | 1.10 | 1.14 | 1.14 | 1.14 | 1.25 | 1.25 | 1.25 | 1.19 | 1.19 | 1.19 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | 20 | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | 20 | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | pm+ov | pm+pt | NA | | pm+pt | NA | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Protected Phases | | 4 | | | 4 | 5 | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 4 | | | 4 | | 4 | 6 | 6 | | 2 | | |
| Detector Phase | 4 | 4 | | 4 | 4 | 5 | 1 | 6 | | 5 | 2 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 6.0 | 6.0 | | 6.0 | 6.0 | 6.0 | 6.0 | 10.0 | | 6.0 | 10.0 | |
| Minimum Split (s) | 26.0 | 26.0 | | 26.0 | 26.0 | 11.0 | 11.0 | 24.0 | | 11.0 | 24.0 | |
| Total Split (s) | 35.0 | 35.0 | | 35.0 | 35.0 | 15.0 | 15.0 | 56.0 | | 15.0 | 56.0 | |
| Total Split (%) | 33.0% | 33.0% | | 33.0% | 33.0% | 14.2% | 14.2% | 52.8% | | 14.2% | 52.8% | |
| Maximum Green (s) | 30.0 | 30.0 | | 30.0 | 30.0 | 10.0 | 10.0 | 50.0 | | 10.0 | 50.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 3.0 | | 2.0 | 3.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | 5.0 | 5.0 | 6.0 | | 5.0 | 6.0 | |
| Lead/Lag | | | | | | Lead | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | None | None | | None | None | None | None | Ped | | None | Max | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | | 7.0 | | | | |
| Flash Dont Walk (s) | 14.0 | 14.0 | | 14.0 | 14.0 | | | 9.0 | | | | |
| Pedestrian Calls (#/hr) | 10 | 10 | | 10 | 10 | | | 10 | | | | |
| Act Effct Green (s) | | 8.5 | | | 8.5 | 15.1 | 59.0 | 59.5 | | | 59.5 | |
| Actuated g/C Ratio | | 0.12 | | | 0.12 | 0.20 | 0.80 | 0.81 | | | 0.81 | |
| v/c Ratio | | 0.13 | | | 0.12 | 0.06 | 0.02 | 0.34 | | | 0.56 | |
| Control Delay | | 1.2 | | | 30.4 | 2.4 | 4.0 | 5.6 | | | 8.1 | |
| Queue Delay | | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | | | 0.0 | |
| Total Delay | | 1.2 | | | 30.4 | 2.4 | 4.0 | 5.6 | | | 8.1 | |
| LOS | | A | | | C | A | A | A | | | A | |
| Approach Delay | | 1.2 | | | 19.4 | | | 5.6 | | | 8.1 | |
| Approach LOS | | A | | | B | | | A | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 106 | | | |
| Actuated Cycle Length: 73.8 | | | |
| Natural Cycle: 80 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 0.56 | | | |
| Intersection Signal Delay: 7.2 | | Intersection LOS: A | |
| Intersection Capacity Utilization 56.3% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

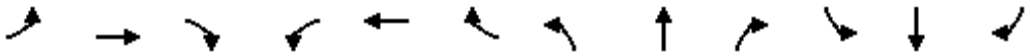
Splits and Phases: 2: Summer Street & FedEx/Dedicated Freight Corridor





| Lane Group | EBT | WBT | WBR | NBL | NBT | SBT |
|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 28 | 17 | 11 | 5 | 842 | 1371 |
| v/c Ratio | 0.13 | 0.12 | 0.06 | 0.02 | 0.34 | 0.56 |
| Control Delay | 1.2 | 30.4 | 2.4 | 4.0 | 5.6 | 8.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 1.2 | 30.4 | 2.4 | 4.0 | 5.6 | 8.1 |
| Queue Length 50th (ft) | 0 | 7 | 0 | 1 | 46 | 100 |
| Queue Length 95th (ft) | 0 | 25 | 4 | 4 | 209 | 441 |
| Internal Link Dist (ft) | 148 | 272 | | | 585 | 1430 |
| Turn Bay Length (ft) | | | 60 | 60 | | |
| Base Capacity (vph) | 583 | 521 | 211 | 384 | 2441 | 2454 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.05 | 0.03 | 0.05 | 0.01 | 0.34 | 0.56 |

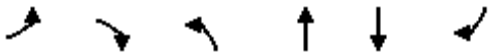
Intersection Summary



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 21 | 0 | 5 | 16 | 0 | 10 | 5 | 770 | 5 | 0 | 1246 | 16 |
| Future Volume (vph) | 21 | 0 | 5 | 16 | 0 | 10 | 5 | 770 | 5 | 0 | 1246 | 16 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 13 | 13 | 13 | 12 | 12 | 12 | 10 | 10 | 10 | 11 | 11 | 11 |
| Total Lost time (s) | | 5.0 | | | 5.0 | 5.0 | 5.0 | 6.0 | | | 6.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | 1.00 | 1.00 | 0.95 | | | 0.95 | |
| Frt | | 0.98 | | | 1.00 | 0.85 | 1.00 | 1.00 | | | 1.00 | |
| Flt Protected | | 0.96 | | | 0.95 | 1.00 | 0.95 | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | | 1656 | | | 1624 | 727 | 1516 | 3030 | | | 3045 | |
| Flt Permitted | | 0.75 | | | 0.74 | 1.00 | 0.17 | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | | 1298 | | | 1264 | 727 | 263 | 3030 | | | 3045 | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 23 | 0 | 5 | 17 | 0 | 11 | 5 | 837 | 5 | 0 | 1354 | 17 |
| RTOR Reduction (vph) | 0 | 26 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 1 | 0 |
| Lane Group Flow (vph) | 0 | 2 | 0 | 0 | 17 | 1 | 5 | 842 | 0 | 0 | 1370 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 100% | 0% | 0% | 0% | 100% | 3% | 0% |
| Turn Type | Perm | NA | | Perm | NA | pm+ov | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | | 4 | | | 4 | 5 | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 4 | | | 4 | | 4 | 6 | 6 | | 2 | | |
| Actuated Green, G (s) | | 6.0 | | | 6.0 | 7.0 | 58.0 | 57.0 | | | 57.0 | |
| Effective Green, g (s) | | 6.0 | | | 6.0 | 7.0 | 58.0 | 57.0 | | | 57.0 | |
| Actuated g/C Ratio | | 0.08 | | | 0.08 | 0.09 | 0.72 | 0.71 | | | 0.71 | |
| Clearance Time (s) | | 5.0 | | | 5.0 | 5.0 | 5.0 | 6.0 | | | 6.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | 2.0 | 2.0 | 2.0 | | | 2.0 | |
| Lane Grp Cap (vph) | | 97 | | | 94 | 109 | 206 | 2158 | | | 2169 | |
| v/s Ratio Prot | | | | | | c0.00 | 0.00 | 0.28 | | | c0.45 | |
| v/s Ratio Perm | | 0.00 | | | c0.01 | 0.00 | 0.02 | | | | | |
| v/c Ratio | | 0.02 | | | 0.18 | 0.01 | 0.02 | 0.39 | | | 0.63 | |
| Uniform Delay, d1 | | 34.3 | | | 34.7 | 33.3 | 3.6 | 4.6 | | | 6.0 | |
| Progression Factor | | 1.00 | | | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 0.0 | | | 0.3 | 0.0 | 0.0 | 0.0 | | | 1.4 | |
| Delay (s) | | 34.3 | | | 35.0 | 33.3 | 3.6 | 4.6 | | | 7.4 | |
| Level of Service | | C | | | D | C | A | A | | | A | |
| Approach Delay (s) | | 34.3 | | | 34.4 | | | 4.6 | | | 7.4 | |
| Approach LOS | | C | | | C | | | A | | | A | |

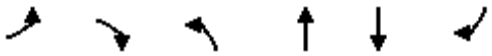
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 7.0 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.58 | | |
| Actuated Cycle Length (s) | 80.0 | Sum of lost time (s) | 16.0 |
| Intersection Capacity Utilization | 56.3% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 16 | 11 | 0 | 754 | 1225 | 11 |
| Future Volume (vph) | 16 | 11 | 0 | 754 | 1225 | 11 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 14 | 12 | 10 | 10 | 10 | 10 |
| Lane Util. Factor | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 0.95 |
| Ped Bike Factor | | | | | | |
| Frt | 0.945 | | | | 0.999 | |
| Flt Protected | 0.971 | | | | | |
| Satd. Flow (prot) | 1616 | 0 | 0 | 2973 | 2970 | 0 |
| Flt Permitted | 0.971 | | | | | |
| Satd. Flow (perm) | 1616 | 0 | 0 | 2973 | 2970 | 0 |
| Link Speed (mph) | 30 | | | 30 | 30 | |
| Link Distance (ft) | 384 | | | 365 | 665 | |
| Travel Time (s) | 8.7 | | | 8.3 | 15.1 | |
| Confl. Peds. (#/hr) | | | 153 | | | 153 |
| Confl. Bikes (#/hr) | | | | | | 34 |
| Peak Hour Factor | 0.65 | 0.65 | 0.85 | 0.85 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 6% | 0% | 0% | 2% | 2% | 0% |
| Parking (#/hr) | | | 1 | | | 1 |
| Adj. Flow (vph) | 25 | 17 | 0 | 887 | 1276 | 11 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 42 | 0 | 0 | 887 | 1287 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(ft) | 14 | | | 10 | 10 | |
| Link Offset(ft) | 0 | | | 0 | 0 | |
| Crosswalk Width(ft) | 16 | | | 16 | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.05 | 1.14 | 1.25 | 1.25 | 1.25 | 1.25 |
| Turning Speed (mph) | 15 | 9 | 15 | | | 9 |
| Sign Control | Stop | | | Free | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 48.1% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

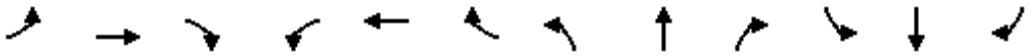


| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 16 | 11 | 0 | 754 | 1225 | 11 |
| Future Volume (Veh/h) | 16 | 11 | 0 | 754 | 1225 | 11 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.65 | 0.65 | 0.85 | 0.85 | 0.96 | 0.96 |
| Hourly flow rate (vph) | 25 | 17 | 0 | 887 | 1276 | 11 |
| Pedestrians | 153 | | | | | |
| Lane Width (ft) | 14.0 | | | | | |
| Walking Speed (ft/s) | 4.0 | | | | | |
| Percent Blockage | 15 | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | 365 | 665 | |
| pX, platoon unblocked | 0.86 | 0.79 | 0.79 | | | |
| vC, conflicting volume | 1878 | 796 | 1440 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 1013 | 222 | 1033 | | | |
| tC, single (s) | *7.1 | *6.9 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.6 | 3.3 | 2.2 | | | |
| p0 queue free % | 84 | 97 | 100 | | | |
| cM capacity (veh/h) | 159 | 532 | 459 | | | |

| Direction, Lane # | EB 1 | NB 1 | NB 2 | SB 1 | SB 2 |
|---|---|---|---|---|---|
| Volume Total | 42 | 296 | 591 | 851 | 436 |
| Volume Left | 25 | 0 | 0 | 0 | 0 |
| Volume Right | 17 | 0 | 0 | 0 | 11 |
| cSH | 222 | 459 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.19 | 0.00 | 0.35 | 0.50 | 0.26 |
| Queue Length 95th (ft) | 17 | 0 | 0 | 0 | 0 |
| Control Delay (s) | 25.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane LOS | D | | | | |
| Approach Delay (s) | 25.0 | 0.0 | | 0.0 | |
| Approach LOS | D | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.5 | | |
| Intersection Capacity Utilization | 48.1% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

* User Entered Value



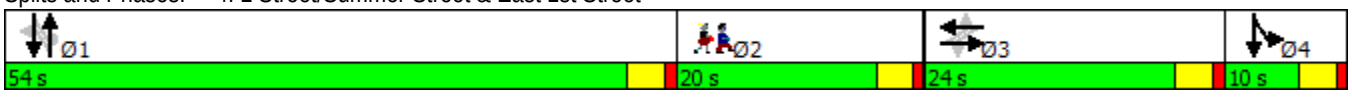
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 34 | 107 | 64 | 21 | 43 | 163 | 27 | 552 | 21 | 294 | 800 | 141 |
| Future Volume (vph) | 34 | 107 | 64 | 21 | 43 | 163 | 27 | 552 | 21 | 294 | 800 | 141 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 15 | 12 | 12 | 16 | 12 | 12 | 9 | 12 | 12 | 12 | 12 |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 100 | | 0 | 100 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Ped Bike Factor | | 0.95 | | | 0.95 | | | 1.00 | | | 0.98 | |
| Frt | | 0.958 | | | 0.903 | | | 0.995 | | | 0.983 | |
| Flt Protected | | 0.992 | | | 0.995 | | | 0.998 | | | 0.988 | |
| Satd. Flow (prot) | 0 | 1656 | 0 | 0 | 1584 | 0 | 0 | 2891 | 0 | 0 | 3038 | 0 |
| Flt Permitted | | 0.785 | | | 0.931 | | | 0.789 | | | 0.613 | |
| Satd. Flow (perm) | 0 | 1306 | 0 | 0 | 1476 | 0 | 0 | 2284 | 0 | 0 | 1877 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 18 | | | 103 | | | 4 | | | 19 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 540 | | | 576 | | | 340 | | | 365 | |
| Travel Time (s) | | 12.3 | | | 13.1 | | | 7.7 | | | 8.3 | |
| Confl. Peds. (#/hr) | 29 | | 36 | 36 | | 29 | 134 | | 51 | 51 | | 134 |
| Confl. Bikes (#/hr) | | | 12 | | | 1 | | | | | | 19 |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.85 | 0.85 | 0.85 | 0.88 | 0.88 | 0.88 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 13% | 1% | 2% | 0% | 5% | 6% | 0% | 0% | 5% | 1% | 2% | 4% |
| Adj. Flow (vph) | 40 | 124 | 74 | 25 | 51 | 192 | 31 | 627 | 24 | 327 | 889 | 157 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 238 | 0 | 0 | 268 | 0 | 0 | 682 | 0 | 0 | 1373 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.01 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 1.30 | 1.14 | 1.14 | 1.14 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |

| Lane Group | Ø2 |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | |
| Future Volume (vph) | |
| Ideal Flow (vphpl) | |
| Lane Width (ft) | |
| Storage Length (ft) | |
| Storage Lanes | |
| Taper Length (ft) | |
| Lane Util. Factor | |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Right Turn on Red | |
| Satd. Flow (RTOR) | |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | |
| Heavy Vehicles (%) | |
| Adj. Flow (vph) | |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | |
| Enter Blocked Intersection | |
| Lane Alignment | |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | |
| Turning Speed (mph) | |
| Number of Detectors | |
| Detector Template | |
| Leading Detector (ft) | |
| Trailing Detector (ft) | |
| Detector 1 Position(ft) | |
| Detector 1 Size(ft) | |
| Detector 1 Type | |
| Detector 1 Channel | |
| Detector 1 Extend (s) | |
| Detector 1 Queue (s) | |
| Detector 1 Delay (s) | |
| Detector 2 Position(ft) | |
| Detector 2 Size(ft) | |
| Detector 2 Type | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | D.P+P | NA | |
| Protected Phases | | 3 | | | 3 | | | 1 | | 4 | 1 4 | |
| Permitted Phases | 3 | | | 3 | | | 1 | | | 1 | | |
| Detector Phase | 3 | 3 | | 3 | 3 | | 1 | 1 | | 4 | 1 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 10.0 | 10.0 | | 5.0 | | |
| Minimum Split (s) | 11.0 | 11.0 | | 11.0 | 11.0 | | 14.0 | 14.0 | | 9.0 | | |
| Total Split (s) | 24.0 | 24.0 | | 24.0 | 24.0 | | 54.0 | 54.0 | | 10.0 | | |
| Total Split (%) | 22.2% | 22.2% | | 22.2% | 22.2% | | 50.0% | 50.0% | | 9.3% | | |
| Maximum Green (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 50.0 | 50.0 | | 6.0 | | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | |
| Total Lost Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | | |
| Lead/Lag | Lead | Lead | | Lead | Lead | | Lead | Lead | | Lag | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 1.0 | | |
| Recall Mode | None | None | | None | None | | Max | Max | | None | | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 20.2 | | | 20.2 | | | 50.5 | | | 56.6 | |
| Actuated g/C Ratio | | 0.20 | | | 0.20 | | | 0.50 | | | 0.57 | |
| v/c Ratio | | 0.86 | | | 0.71 | | | 0.59 | | | 1.20 | |
| Control Delay | | 66.3 | | | 35.4 | | | 21.7 | | | 122.8 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 66.3 | | | 35.4 | | | 21.7 | | | 122.8 | |
| LOS | | E | | | D | | | C | | | F | |
| Approach Delay | | 66.3 | | | 35.4 | | | 21.7 | | | 122.8 | |
| Approach LOS | | E | | | D | | | C | | | F | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 108 | | | |
| Actuated Cycle Length: 100 | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 1.20 | | | |
| Intersection Signal Delay: 81.5 | | Intersection LOS: F | |
| Intersection Capacity Utilization 90.1% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 4: L Street/Summer Street & East 1st Street



| Lane Group | Ø2 |
|---|---|
| Detector 2 Channel | |
| Detector 2 Extend (s) | |
| Turn Type | |
| Protected Phases | 2 |
| Permitted Phases | |
| Detector Phase | |
| Switch Phase | |
| Minimum Initial (s) | 4.0 |
| Minimum Split (s) | 20.0 |
| Total Split (s) | 20.0 |
| Total Split (%) | 19% |
| Maximum Green (s) | 16.0 |
| Yellow Time (s) | 3.0 |
| All-Red Time (s) | 1.0 |
| Lost Time Adjust (s) | |
| Total Lost Time (s) | |
| Lead/Lag | Lag |
| Lead-Lag Optimize? | |
| Vehicle Extension (s) | 3.0 |
| Recall Mode | None |
| Walk Time (s) | 7.0 |
| Flash Dont Walk (s) | 9.0 |
| Pedestrian Calls (#/hr) | 31 |
| Act Effct Green (s) | |
| Actuated g/C Ratio | |
| v/c Ratio | |
| Control Delay | |
| Queue Delay | |
| Total Delay | |
| LOS | |
| Approach Delay | |
| Approach LOS | |

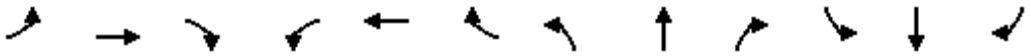
| Intersection Summary |
|---|

| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 238 | 268 | 682 | 1373 |
| v/c Ratio | 0.86 | 0.71 | 0.59 | 1.20 |
| Control Delay | 66.3 | 35.4 | 21.7 | 122.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 66.3 | 35.4 | 21.7 | 122.8 |
| Queue Length 50th (ft) | 152 | 110 | 183 | ~613 |
| Queue Length 95th (ft) | #284 | #191 | 241 | #786 |
| Internal Link Dist (ft) | 460 | 496 | 260 | 285 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 278 | 380 | 1155 | 1140 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.86 | 0.71 | 0.59 | 1.20 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



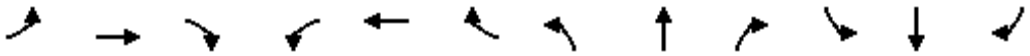
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 34 | 107 | 64 | 21 | 43 | 163 | 27 | 552 | 21 | 294 | 800 | 141 |
| Future Volume (vph) | 34 | 107 | 64 | 21 | 43 | 163 | 27 | 552 | 21 | 294 | 800 | 141 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 15 | 12 | 12 | 16 | 12 | 12 | 9 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | | | 0.95 | | | 0.95 | |
| Frpb, ped/bikes | | 0.96 | | | 0.96 | | | 1.00 | | | 0.98 | |
| Flpb, ped/bikes | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Frt | | 0.96 | | | 0.90 | | | 0.99 | | | 0.98 | |
| Flt Protected | | 0.99 | | | 1.00 | | | 1.00 | | | 0.99 | |
| Satd. Flow (prot) | | 1655 | | | 1583 | | | 2888 | | | 3034 | |
| Flt Permitted | | 0.78 | | | 0.93 | | | 0.79 | | | 0.61 | |
| Satd. Flow (perm) | | 1309 | | | 1480 | | | 2283 | | | 1883 | |
| Peak-hour factor, PHF | 0.86 | 0.86 | 0.86 | 0.85 | 0.85 | 0.85 | 0.88 | 0.88 | 0.88 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 40 | 124 | 74 | 25 | 51 | 192 | 31 | 627 | 24 | 327 | 889 | 157 |
| RTOR Reduction (vph) | 0 | 14 | 0 | 0 | 83 | 0 | 0 | 2 | 0 | 0 | 8 | 0 |
| Lane Group Flow (vph) | 0 | 224 | 0 | 0 | 185 | 0 | 0 | 680 | 0 | 0 | 1365 | 0 |
| Confl. Peds. (#/hr) | 29 | | 36 | 36 | | 29 | 134 | | 51 | 51 | | 134 |
| Confl. Bikes (#/hr) | | | 12 | | | 1 | | | | | | 19 |
| Heavy Vehicles (%) | 13% | 1% | 2% | 0% | 5% | 6% | 0% | 0% | 5% | 1% | 2% | 4% |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | D.P+P | NA | |
| Protected Phases | | 3 | | | 3 | | | 1 | | 4 | 1 4 | |
| Permitted Phases | 3 | | | 3 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 20.2 | | | 20.2 | | | 50.5 | | | 56.6 | |
| Effective Green, g (s) | | 20.2 | | | 20.2 | | | 50.5 | | | 56.6 | |
| Actuated g/C Ratio | | 0.20 | | | 0.20 | | | 0.50 | | | 0.56 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | | | 3.0 | | | | |
| Lane Grp Cap (vph) | | 259 | | | 293 | | | 1133 | | | 1117 | |
| v/s Ratio Prot | | | | | | | | | | | c0.07 | |
| v/s Ratio Perm | | c0.17 | | | 0.13 | | | 0.30 | | | c0.61 | |
| v/c Ratio | | 0.86 | | | 0.63 | | | 0.60 | | | 1.22 | |
| Uniform Delay, d1 | | 39.4 | | | 37.4 | | | 18.4 | | | 22.6 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 24.4 | | | 4.4 | | | 2.4 | | | 107.9 | |
| Delay (s) | | 63.8 | | | 41.8 | | | 20.7 | | | 130.5 | |
| Level of Service | | E | | | D | | | C | | | F | |
| Approach Delay (s) | | 63.8 | | | 41.8 | | | 20.7 | | | 130.5 | |
| Approach LOS | | E | | | D | | | C | | | F | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 85.8 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 1.01 | | |
| Actuated Cycle Length (s) | 101.7 | Sum of lost time (s) | 16.0 |
| Intersection Capacity Utilization | 90.1% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 11 | 0 | 11 | 16 | 0 | 5 | 21 | 589 | 11 | 21 | 838 | 27 |
| Future Volume (vph) | 11 | 0 | 11 | 16 | 0 | 5 | 21 | 589 | 11 | 21 | 838 | 27 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 16 | 12 | 12 | 16 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.932 | | | 0.968 | | | 0.998 | | | 0.996 | |
| Flt Protected | | 0.976 | | | 0.963 | | | 0.998 | | | 0.999 | |
| Satd. Flow (prot) | 0 | 1452 | 0 | 0 | 1488 | 0 | 0 | 1912 | 0 | 0 | 1890 | 0 |
| Flt Permitted | | 0.976 | | | 0.963 | | | 0.998 | | | 0.999 | |
| Satd. Flow (perm) | 0 | 1452 | 0 | 0 | 1488 | 0 | 0 | 1912 | 0 | 0 | 1890 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 429 | | | 453 | | | 298 | | | 340 | |
| Travel Time (s) | | 9.8 | | | 10.3 | | | 6.8 | | | 7.7 | |
| Confl. Peds. (#/hr) | 33 | | 15 | 15 | | 33 | 131 | | 44 | 44 | | 131 |
| Confl. Bikes (#/hr) | | | 1 | | | | | | 1 | | | 18 |
| Peak Hour Factor | 0.50 | 0.50 | 0.50 | 0.86 | 0.86 | 0.86 | 0.89 | 0.89 | 0.89 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% | 0% | 0% | 2% | 4% |
| Adj. Flow (vph) | 22 | 0 | 22 | 19 | 0 | 6 | 24 | 662 | 12 | 23 | 911 | 29 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 44 | 0 | 0 | 25 | 0 | 0 | 698 | 0 | 0 | 963 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.25 | 1.14 | 1.14 | 1.25 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 0.97 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 77.2% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |

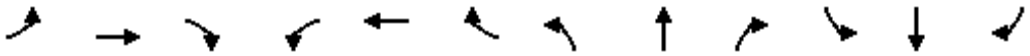


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 11 | 0 | 11 | 16 | 0 | 5 | 21 | 589 | 11 | 21 | 838 | 27 |
| Future Volume (Veh/h) | 11 | 0 | 11 | 16 | 0 | 5 | 21 | 589 | 11 | 21 | 838 | 27 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.50 | 0.50 | 0.50 | 0.86 | 0.86 | 0.86 | 0.89 | 0.89 | 0.89 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 22 | 0 | 22 | 19 | 0 | 6 | 24 | 662 | 12 | 23 | 911 | 29 |
| Pedestrians | | 131 | | | 44 | | | 15 | | | 33 | |
| Lane Width (ft) | | 10.0 | | | 10.0 | | | 16.0 | | | 16.0 | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Percent Blockage | | 9 | | | 3 | | | 2 | | | 4 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | 602 | | | 340 | |
| pX, platoon unblocked | 0.69 | 0.69 | 0.60 | 0.69 | 0.69 | 0.81 | 0.60 | | | 0.81 | | |
| vC, conflicting volume | 1858 | 1868 | 1072 | 1768 | 1877 | 745 | 1071 | | | 718 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1397 | 1413 | 785 | 1269 | 1425 | 567 | 784 | | | 534 | | |
| tC, single (s) | *4.0 | 6.5 | *4.0 | *4.0 | 6.5 | *4.0 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 89 | 100 | 94 | 92 | 100 | 99 | 95 | | | 97 | | |
| cM capacity (veh/h) | 205 | 78 | 343 | 232 | 77 | 563 | 459 | | | 819 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 44 | 25 | 698 | 963 |
| Volume Left | 22 | 19 | 24 | 23 |
| Volume Right | 22 | 6 | 12 | 29 |
| cSH | 257 | 270 | 459 | 819 |
| Volume to Capacity | 0.17 | 0.09 | 0.05 | 0.03 |
| Queue Length 95th (ft) | 15 | 8 | 4 | 2 |
| Control Delay (s) | 21.9 | 19.7 | 1.6 | 0.8 |
| Lane LOS | C | C | A | A |
| Approach Delay (s) | 21.9 | 19.7 | 1.6 | 0.8 |
| Approach LOS | C | C | | |

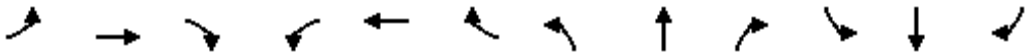
| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.9 | | |
| Intersection Capacity Utilization | 77.2% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

* User Entered Value



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 21 | 11 | 16 | 0 | 11 | 16 | 11 | 579 | 11 | 16 | 827 | 21 |
| Future Volume (vph) | 21 | 11 | 16 | 0 | 11 | 16 | 11 | 579 | 11 | 16 | 827 | 21 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 16 | 12 | 12 | 16 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.954 | | | 0.920 | | | 0.997 | | | 0.997 | |
| Flt Protected | | 0.979 | | | | | | 0.999 | | | 0.999 | |
| Satd. Flow (prot) | 0 | 1342 | 0 | 0 | 1321 | 0 | 0 | 1907 | 0 | 0 | 1894 | 0 |
| Flt Permitted | | 0.979 | | | | | | 0.999 | | | 0.999 | |
| Satd. Flow (perm) | 0 | 1342 | 0 | 0 | 1321 | 0 | 0 | 1907 | 0 | 0 | 1894 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 638 | | | 716 | | | 304 | | | 298 | |
| Travel Time (s) | | 14.5 | | | 16.3 | | | 6.9 | | | 6.8 | |
| Confl. Peds. (#/hr) | 23 | | 27 | 27 | | 23 | 117 | | 70 | 70 | | 117 |
| Confl. Bikes (#/hr) | | | | | | | | | 1 | | | 15 |
| Peak Hour Factor | 0.67 | 0.67 | 0.67 | 0.63 | 0.63 | 0.63 | 0.86 | 0.86 | 0.86 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% | 13% | 0% | 2% | 0% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | | | | | |
| Adj. Flow (vph) | 31 | 16 | 24 | 0 | 17 | 25 | 13 | 673 | 13 | 17 | 871 | 22 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 71 | 0 | 0 | 42 | 0 | 0 | 699 | 0 | 0 | 910 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 0.97 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 78.1% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |

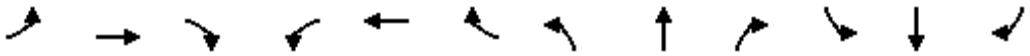


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 21 | 11 | 16 | 0 | 11 | 16 | 11 | 579 | 11 | 16 | 827 | 21 |
| Future Volume (Veh/h) | 21 | 11 | 16 | 0 | 11 | 16 | 11 | 579 | 11 | 16 | 827 | 21 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.67 | 0.67 | 0.67 | 0.63 | 0.63 | 0.63 | 0.86 | 0.86 | 0.86 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 31 | 16 | 24 | 0 | 17 | 25 | 13 | 673 | 13 | 17 | 871 | 22 |
| Pedestrians | | 117 | | | 70 | | | 27 | | | 23 | |
| Lane Width (ft) | | 10.0 | | | 10.0 | | | 16.0 | | | 16.0 | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Percent Blockage | | 8 | | | 5 | | | 3 | | | 3 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | 304 | | | 638 | |
| pX, platoon unblocked | 0.70 | 0.70 | 0.61 | 0.70 | 0.70 | 0.81 | 0.61 | | | 0.81 | | |
| vC, conflicting volume | 1795 | 1815 | 1026 | 1750 | 1820 | 772 | 1010 | | | 756 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1321 | 1350 | 718 | 1258 | 1356 | 606 | 692 | | | 585 | | |
| tC, single (s) | *4.0 | *4.0 | *4.0 | 7.1 | *4.0 | *4.0 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 85 | 93 | 93 | 100 | 92 | 95 | 97 | | | 98 | | |
| cM capacity (veh/h) | 207 | 226 | 362 | 74 | 225 | 547 | 508 | | | 773 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 71 | 42 | 699 | 910 |
| Volume Left | 31 | 0 | 13 | 17 |
| Volume Right | 24 | 25 | 13 | 22 |
| cSH | 248 | 346 | 508 | 773 |
| Volume to Capacity | 0.29 | 0.12 | 0.03 | 0.02 |
| Queue Length 95th (ft) | 29 | 10 | 2 | 2 |
| Control Delay (s) | 25.3 | 16.8 | 0.7 | 0.6 |
| Lane LOS | D | C | A | A |
| Approach Delay (s) | 25.3 | 16.8 | 0.7 | 0.6 |
| Approach LOS | D | C | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 2.1 | | | |
| Intersection Capacity Utilization | 78.1% | ICU Level of Service | D | |
| Analysis Period (min) | 15 | | | |

* User Entered Value



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 53 | 144 | 53 | 11 | 155 | 44 | 80 | 492 | 27 | 71 | 561 | 205 |
| Future Volume (vph) | 53 | 144 | 53 | 11 | 155 | 44 | 80 | 492 | 27 | 71 | 561 | 205 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 11 | 12 | 12 | 16 | 12 | 10 | 10 | 10 | 10 | 10 | 10 |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 0 | | 250 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 0 | | 1 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 0.95 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Ped Bike Factor | | 0.94 | | | 0.96 | | | 0.99 | | | 0.96 | |
| Frt | | 0.968 | | | 0.972 | | | 0.993 | | | 0.963 | |
| Flt Protected | | 0.989 | | | 0.997 | | | 0.993 | | | 0.996 | |
| Satd. Flow (prot) | 0 | 2590 | 0 | 0 | 1564 | 0 | 0 | 2830 | 0 | 0 | 2631 | 0 |
| Flt Permitted | | 0.696 | | | 0.975 | | | 0.577 | | | 0.718 | |
| Satd. Flow (perm) | 0 | 1797 | 0 | 0 | 1517 | 0 | 0 | 1640 | 0 | 0 | 1894 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 642 | | | 187 | | | 618 | | | 304 | |
| Travel Time (s) | | 14.6 | | | 4.3 | | | 14.0 | | | 6.9 | |
| Confl. Peds. (#/hr) | 61 | | 89 | 89 | | 61 | 154 | | 61 | 61 | | 154 |
| Confl. Bikes (#/hr) | | | 7 | | | 1 | | | 1 | | | 6 |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.88 | 0.88 | 0.88 | 0.86 | 0.86 | 0.86 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 2% | 9% | 0% | 0% | 6% | 0% | 0% | 0% | 3% | 13% | 0% | 1% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Adj. Flow (vph) | 60 | 162 | 60 | 13 | 176 | 50 | 93 | 572 | 31 | 76 | 603 | 220 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 282 | 0 | 0 | 239 | 0 | 0 | 696 | 0 | 0 | 899 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.27 | 1.14 | 1.14 | 1.12 | 1.14 | 1.25 | 1.33 | 1.25 | 1.25 | 1.33 | 1.25 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |

| Lane Group | Ø2 |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | |
| Future Volume (vph) | |
| Ideal Flow (vphpl) | |
| Lane Width (ft) | |
| Storage Length (ft) | |
| Storage Lanes | |
| Taper Length (ft) | |
| Lane Util. Factor | |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Right Turn on Red | |
| Satd. Flow (RTOR) | |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | |
| Heavy Vehicles (%) | |
| Parking (#/hr) | |
| Adj. Flow (vph) | |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | |
| Enter Blocked Intersection | |
| Lane Alignment | |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | |
| Turning Speed (mph) | |
| Number of Detectors | |
| Detector Template | |
| Leading Detector (ft) | |
| Trailing Detector (ft) | |
| Detector 1 Position(ft) | |
| Detector 1 Size(ft) | |
| Detector 1 Type | |
| Detector 1 Channel | |
| Detector 1 Extend (s) | |
| Detector 1 Queue (s) | |
| Detector 1 Delay (s) | |
| Detector 2 Position(ft) | |
| Detector 2 Size(ft) | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | D.P+P | NA | | Perm | NA | | D.P+P | NA | | Perm | NA | |
| Protected Phases | 3 | 3 4 | | | 4 | | 5 | 1 5 | | | 1 | |
| Permitted Phases | 4 | | | 4 | | | 1 | | | 1 | | |
| Detector Phase | 3 | 3 4 | | 4 | 4 | | 5 | 1 5 | | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | | | 10.0 | 10.0 | | 6.0 | | | 30.0 | 30.0 | |
| Minimum Split (s) | 10.0 | | | 14.0 | 14.0 | | 10.0 | | | 34.0 | 34.0 | |
| Total Split (s) | 11.0 | | | 34.0 | 34.0 | | 19.0 | | | 54.0 | 54.0 | |
| Total Split (%) | 7.7% | | | 23.9% | 23.9% | | 13.4% | | | 38.0% | 38.0% | |
| Maximum Green (s) | 6.0 | | | 30.0 | 30.0 | | 15.0 | | | 50.0 | 50.0 | |
| Yellow Time (s) | 3.0 | | | 3.0 | 3.0 | | 3.0 | | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | | | 1.0 | 1.0 | | 1.0 | | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | | | | | 0.0 | | | | | | 0.0 | |
| Total Lost Time (s) | | | | | 4.0 | | | | | | 4.0 | |
| Lead/Lag | Lead | | | Lag | Lag | | | | | Lead | Lead | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | | | 2.0 | 2.0 | | 2.0 | | | 2.0 | 2.0 | |
| Recall Mode | Max | | | Max | Max | | Max | | | Max | Max | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 35.2 | | | 30.2 | | | 65.4 | | | 50.3 | |
| Actuated g/C Ratio | | 0.26 | | | 0.22 | | | 0.48 | | | 0.37 | |
| v/c Ratio | | 0.57 | | | 0.72 | | | 0.76 | | | 1.30 | |
| Control Delay | | 48.0 | | | 64.3 | | | 32.8 | | | 180.5 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 48.0 | | | 64.3 | | | 32.8 | | | 180.5 | |
| LOS | | D | | | E | | | C | | | F | |
| Approach Delay | | 48.0 | | | 64.3 | | | 32.8 | | | 180.5 | |
| Approach LOS | | D | | | E | | | C | | | F | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 142 | | | |
| Actuated Cycle Length: 137.2 | | | |
| Natural Cycle: 125 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 1.30 | | | |
| Intersection Signal Delay: 101.1 | | Intersection LOS: F | |
| Intersection Capacity Utilization 90.6% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 7: L Street & E Broadway



| Lane Group | Ø2 |
|---|---|
| Detector 2 Type | |
| Detector 2 Channel | |
| Detector 2 Extend (s) | |
| Turn Type | |
| Protected Phases | 2 |
| Permitted Phases | |
| Detector Phase | |
| Switch Phase | |
| Minimum Initial (s) | 4.0 |
| Minimum Split (s) | 24.0 |
| Total Split (s) | 24.0 |
| Total Split (%) | 17% |
| Maximum Green (s) | 20.0 |
| Yellow Time (s) | 3.0 |
| All-Red Time (s) | 1.0 |
| Lost Time Adjust (s) | |
| Total Lost Time (s) | |
| Lead/Lag | Lag |
| Lead-Lag Optimize? | |
| Vehicle Extension (s) | 2.0 |
| Recall Mode | None |
| Walk Time (s) | 8.0 |
| Flash Dont Walk (s) | 12.0 |
| Pedestrian Calls (#/hr) | 46 |
| Act Effct Green (s) | |
| Actuated g/C Ratio | |
| v/c Ratio | |
| Control Delay | |
| Queue Delay | |
| Total Delay | |
| LOS | |
| Approach Delay | |
| Approach LOS | |

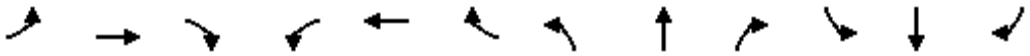
| Intersection Summary |
|---|

| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 282 | 239 | 696 | 899 |
| v/c Ratio | 0.57 | 0.72 | 0.76 | 1.30 |
| Control Delay | 48.0 | 64.3 | 32.8 | 180.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 48.0 | 64.3 | 32.8 | 180.5 |
| Queue Length 50th (ft) | 111 | 209 | 226 | ~570 |
| Queue Length 95th (ft) | 153 | #305 | 266 | #704 |
| Internal Link Dist (ft) | 562 | 107 | 538 | 224 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 495 | 333 | 912 | 693 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.57 | 0.72 | 0.76 | 1.30 |

Intersection Summary

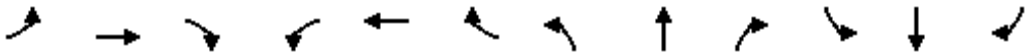
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



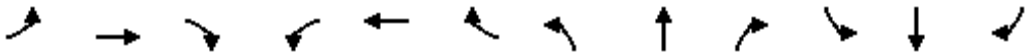
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 53 | 144 | 53 | 11 | 155 | 44 | 80 | 492 | 27 | 71 | 561 | 205 |
| Future Volume (vph) | 53 | 144 | 53 | 11 | 155 | 44 | 80 | 492 | 27 | 71 | 561 | 205 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 11 | 12 | 12 | 16 | 12 | 10 | 10 | 10 | 10 | 10 | 10 |
| Total Lost time (s) | | 5.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 0.95 | | | 1.00 | | | 0.95 | | | 0.95 | |
| Frpb, ped/bikes | | 0.96 | | | 0.97 | | | 1.00 | | | 0.97 | |
| Flpb, ped/bikes | | 0.99 | | | 0.99 | | | 1.00 | | | 1.00 | |
| Frt | | 0.97 | | | 0.97 | | | 0.99 | | | 0.96 | |
| Flt Protected | | 0.99 | | | 1.00 | | | 0.99 | | | 1.00 | |
| Satd. Flow (prot) | | 2570 | | | 1554 | | | 2828 | | | 2630 | |
| Flt Permitted | | 0.70 | | | 0.97 | | | 0.58 | | | 0.72 | |
| Satd. Flow (perm) | | 1809 | | | 1518 | | | 1642 | | | 1896 | |
| Peak-hour factor, PHF | 0.89 | 0.89 | 0.89 | 0.88 | 0.88 | 0.88 | 0.86 | 0.86 | 0.86 | 0.93 | 0.93 | 0.93 |
| Adj. Flow (vph) | 60 | 162 | 60 | 12 | 176 | 50 | 93 | 572 | 31 | 76 | 603 | 220 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 282 | 0 | 0 | 239 | 0 | 0 | 696 | 0 | 0 | 899 | 0 |
| Confl. Peds. (#/hr) | 61 | | 89 | 89 | | 61 | 154 | | 61 | 61 | | 154 |
| Confl. Bikes (#/hr) | | | 7 | | | 1 | | | 1 | | | 6 |
| Heavy Vehicles (%) | 2% | 9% | 0% | 0% | 6% | 0% | 0% | 0% | 3% | 13% | 0% | 1% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Turn Type | D.P+P | NA | | Perm | NA | | D.P+P | NA | | Perm | NA | |
| Protected Phases | 3 | 3 4 | | | 4 | | 5 | 1 5 | | | 1 | |
| Permitted Phases | 4 | | | 4 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 36.2 | | | 30.2 | | | 65.4 | | | 50.3 | |
| Effective Green, g (s) | | 36.2 | | | 30.2 | | | 65.4 | | | 50.3 | |
| Actuated g/C Ratio | | 0.26 | | | 0.22 | | | 0.47 | | | 0.36 | |
| Clearance Time (s) | | | | | 4.0 | | | | | | 4.0 | |
| Vehicle Extension (s) | | | | | 2.0 | | | | | | 2.0 | |
| Lane Grp Cap (vph) | | 507 | | | 331 | | | 907 | | | 690 | |
| v/s Ratio Prot | | c0.02 | | | | | | c0.08 | | | | |
| v/s Ratio Perm | | 0.12 | | | c0.16 | | | 0.28 | | | c0.47 | |
| v/c Ratio | | 0.56 | | | 0.72 | | | 0.77 | | | 1.30 | |
| Uniform Delay, d1 | | 44.0 | | | 50.1 | | | 30.1 | | | 43.9 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 4.4 | | | 12.8 | | | 6.2 | | | 146.7 | |
| Delay (s) | | 48.4 | | | 62.9 | | | 36.2 | | | 190.6 | |
| Level of Service | | D | | | E | | | D | | | F | |
| Approach Delay (s) | | 48.4 | | | 62.9 | | | 36.2 | | | 190.6 | |
| Approach LOS | | D | | | E | | | D | | | F | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 106.5 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 0.87 | | |
| Actuated Cycle Length (s) | 138.1 | Sum of lost time (s) | 21.0 |
| Intersection Capacity Utilization | 90.6% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 21 | 199 | 0 | 0 | 205 | 5 | 48 | 11 | 16 | 5 | 0 | 53 |
| Future Volume (vph) | 21 | 199 | 0 | 0 | 205 | 5 | 48 | 11 | 16 | 5 | 0 | 53 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 13 | 12 | 10 | 10 | 12 | 12 | 16 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | | | 0.997 | | | 0.912 | | | 0.876 | |
| Flt Protected | | 0.995 | | | | | 0.950 | | | | 0.996 | |
| Satd. Flow (prot) | 0 | 1460 | 0 | 0 | 1555 | 0 | 1338 | 1243 | 0 | 0 | 1494 | 0 |
| Flt Permitted | | 0.995 | | | | | 0.950 | | | | 0.996 | |
| Satd. Flow (perm) | 0 | 1460 | 0 | 0 | 1555 | 0 | 1338 | 1243 | 0 | 0 | 1494 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 1822 | | | 540 | | | 382 | | | 354 | |
| Travel Time (s) | | 41.4 | | | 12.3 | | | 8.7 | | | 8.0 | |
| Confl. Peds. (#/hr) | 8 | | 18 | 18 | | 8 | 13 | | 28 | 28 | | 13 |
| Confl. Bikes (#/hr) | | | 5 | | | 2 | | | 1 | | | |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.88 | 0.88 | 0.88 | 0.81 | 0.81 | 0.81 | 0.70 | 0.70 | 0.70 |
| Heavy Vehicles (%) | 32% | 2% | 0% | 0% | 2% | 0% | 2% | 13% | 0% | 0% | 0% | 2% |
| Parking (#/hr) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Adj. Flow (vph) | 25 | 234 | 0 | 0 | 233 | 6 | 59 | 14 | 20 | 7 | 0 | 76 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 259 | 0 | 0 | 239 | 0 | 59 | 34 | 0 | 0 | 83 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 10 | | | 10 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.30 | 1.14 | 1.14 | 1.25 | 1.14 | 1.42 | 1.42 | 1.14 | 1.14 | 1.12 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 47.6% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 21 | 199 | 0 | 0 | 205 | 5 | 48 | 11 | 16 | 5 | 0 | 53 |
| Future Volume (Veh/h) | 21 | 199 | 0 | 0 | 205 | 5 | 48 | 11 | 16 | 5 | 0 | 53 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.88 | 0.88 | 0.88 | 0.81 | 0.81 | 0.81 | 0.70 | 0.70 | 0.70 |
| Hourly flow rate (vph) | 25 | 234 | 0 | 0 | 233 | 6 | 59 | 14 | 20 | 7 | 0 | 76 |
| Pedestrians | | 13 | | | 28 | | | 18 | | | 8 | |
| Lane Width (ft) | | 12.0 | | | 13.0 | | | 10.0 | | | 16.0 | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Percent Blockage | | 1 | | | 3 | | | 1 | | | 1 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 540 | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 247 | | | 252 | | | 627 | 549 | 280 | 583 | 546 | 257 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 247 | | | 252 | | | 627 | 549 | 280 | 583 | 546 | 257 |
| tC, single (s) | 4.4 | | | 4.1 | | | *6.5 | 6.6 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.5 | | | 2.2 | | | 3.5 | 4.1 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 100 | | | 84 | 97 | 97 | 98 | 100 | 90 |
| cM capacity (veh/h) | 1152 | | | 1309 | | | 376 | 410 | 735 | 378 | 429 | 766 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | SB 1 |
|---|---|---|---|---|---|
| Volume Total | 259 | 239 | 59 | 34 | 83 |
| Volume Left | 25 | 0 | 59 | 0 | 7 |
| Volume Right | 0 | 6 | 0 | 20 | 76 |
| cSH | 1152 | 1700 | 376 | 554 | 705 |
| Volume to Capacity | 0.02 | 0.14 | 0.16 | 0.06 | 0.12 |
| Queue Length 95th (ft) | 2 | 0 | 14 | 5 | 10 |
| Control Delay (s) | 1.0 | 0.0 | 16.4 | 11.9 | 10.8 |
| Lane LOS | A | | C | B | B |
| Approach Delay (s) | 1.0 | 0.0 | 14.7 | | 10.8 |
| Approach LOS | | | B | | B |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 3.7 | | | |
| Intersection Capacity Utilization | 47.6% | ICU Level of Service | | A |
| Analysis Period (min) | 15 | | | |

* User Entered Value



| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 422 | 0 | 0 | 195 | 37 | 21 |
| Future Volume (vph) | 422 | 0 | 0 | 195 | 37 | 21 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 13 | 12 | 12 | 13 | 10 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | | | | | 0.951 | |
| Flt Protected | | | | | 0.969 | |
| Satd. Flow (prot) | 1750 | 0 | 0 | 1667 | 1443 | 0 |
| Flt Permitted | | | | | 0.969 | |
| Satd. Flow (perm) | 1750 | 0 | 0 | 1667 | 1443 | 0 |
| Link Speed (mph) | 30 | | | 30 | 30 | |
| Link Distance (ft) | 576 | | | 561 | 457 | |
| Travel Time (s) | 13.1 | | | 12.8 | 10.4 | |
| Confl. Peds. (#/hr) | | 13 | 13 | | 134 | 51 |
| Confl. Bikes (#/hr) | | 17 | | | | 2 |
| Peak Hour Factor | 0.85 | 0.85 | 0.88 | 0.88 | 0.81 | 0.81 |
| Heavy Vehicles (%) | 1% | 0% | 0% | 6% | 3% | 0% |
| Adj. Flow (vph) | 496 | 0 | 0 | 222 | 46 | 26 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 496 | 0 | 0 | 222 | 72 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(ft) | 0 | | | 0 | 10 | |
| Link Offset(ft) | 0 | | | 0 | 0 | |
| Crosswalk Width(ft) | 16 | | | 16 | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.10 | 1.14 | 1.14 | 1.10 | 1.25 | 1.14 |
| Turning Speed (mph) | | 9 | 15 | | 15 | 9 |
| Sign Control | Free | | | Free | Stop | |

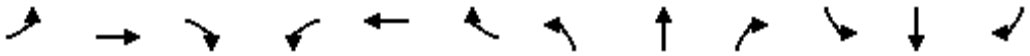
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 43.2% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 422 | 0 | 0 | 195 | 37 | 21 |
| Future Volume (Veh/h) | 422 | 0 | 0 | 195 | 37 | 21 |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.85 | 0.85 | 0.88 | 0.88 | 0.81 | 0.81 |
| Hourly flow rate (vph) | 496 | 0 | 0 | 222 | 46 | 26 |
| Pedestrians | 134 | | | 51 | 13 | |
| Lane Width (ft) | 13.0 | | | 13.0 | 10.0 | |
| Walking Speed (ft/s) | 4.0 | | | 4.0 | 4.0 | |
| Percent Blockage | 12 | | | 5 | 1 | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | None | | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | 576 | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | | | 509 | | 865 | 560 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 509 | | 865 | 560 |
| tC, single (s) | | | 4.1 | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.2 | | 3.5 | 3.3 |
| p0 queue free % | | | 100 | | 84 | 95 |
| cM capacity (veh/h) | | | 1057 | | 281 | 503 |

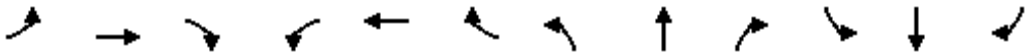
| Direction, Lane # | EB 1 | WB 1 | NB 1 |
|---|---|---|---|
| Volume Total | 496 | 222 | 72 |
| Volume Left | 0 | 0 | 46 |
| Volume Right | 0 | 0 | 26 |
| cSH | 1700 | 1700 | 334 |
| Volume to Capacity | 0.29 | 0.13 | 0.22 |
| Queue Length 95th (ft) | 0 | 0 | 20 |
| Control Delay (s) | 0.0 | 0.0 | 18.7 |
| Lane LOS | | | C |
| Approach Delay (s) | 0.0 | 0.0 | 18.7 |
| Approach LOS | | | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.7 | | |
| Intersection Capacity Utilization | 43.2% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 27 | 396 | 0 | 0 | 167 | 87 | 37 | 38 | 11 | 377 | 0 | 68 |
| Future Volume (vph) | 27 | 396 | 0 | 0 | 167 | 87 | 37 | 38 | 11 | 377 | 0 | 68 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 15 | 12 | 12 | 16 | 12 | 12 | 16 | 12 | 12 | 14 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | | | 0.954 | | | 0.982 | | | 0.979 | |
| Flt Protected | | 0.997 | | | | | | 0.979 | | | 0.959 | |
| Satd. Flow (prot) | 0 | 1629 | 0 | 0 | 1795 | 0 | 0 | 1770 | 0 | 0 | 1705 | 0 |
| Flt Permitted | | 0.997 | | | | | | 0.979 | | | 0.959 | |
| Satd. Flow (perm) | 0 | 1629 | 0 | 0 | 1795 | 0 | 0 | 1770 | 0 | 0 | 1705 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 848 | | | 1822 | | | 402 | | | 2052 | |
| Travel Time (s) | | 19.3 | | | 41.4 | | | 9.1 | | | 46.6 | |
| Confl. Peds. (#/hr) | 4 | | | 5 | | 4 | 1 | | 24 | 24 | | 1 |
| Confl. Bikes (#/hr) | | | 5 | | | 1 | | | 1 | | | 5 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.93 | 0.93 | 0.93 | 0.87 | 0.87 | 0.87 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 12% | 3% | 0% | 0% | 3% | 3% | 3% | 9% | 0% | 0% | 0% | 3% |
| Parking (#/hr) | | 0 | 0 | | | | | | | | | |
| Adj. Flow (vph) | 31 | 450 | 0 | 0 | 180 | 94 | 43 | 44 | 13 | 405 | 0 | 73 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 481 | 0 | 0 | 274 | 0 | 0 | 100 | 0 | 0 | 478 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.16 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 1.05 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |

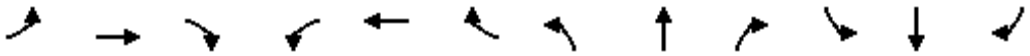
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 85.1% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 27 | 396 | 0 | 0 | 167 | 87 | 37 | 38 | 11 | 377 | 0 | 68 |
| Future Volume (Veh/h) | 27 | 396 | 0 | 0 | 167 | 87 | 37 | 38 | 11 | 377 | 0 | 68 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.93 | 0.93 | 0.93 | 0.87 | 0.87 | 0.87 | 0.93 | 0.93 | 0.93 |
| Hourly flow rate (vph) | 31 | 450 | 0 | 0 | 180 | 94 | 43 | 44 | 13 | 405 | 0 | 73 |
| Pedestrians | | 1 | | | 24 | | | 5 | | | 4 | |
| Lane Width (ft) | | 15.0 | | | 16.0 | | | 16.0 | | | 14.0 | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Percent Blockage | | 0 | | | 3 | | | 1 | | | 0 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 278 | | | 455 | | | 818 | 795 | 479 | 802 | 748 | 232 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 278 | | | 455 | | | 818 | 795 | 479 | 802 | 748 | 232 |
| tC, single (s) | 4.2 | | | 4.1 | | | 7.1 | 6.6 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.3 | | | 2.2 | | | 3.5 | 4.1 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 97 | | | 100 | | | 83 | 85 | 98 | 0 | 100 | 91 |
| cM capacity (veh/h) | 1225 | | | 1110 | | | 258 | 302 | 572 | 250 | 332 | 801 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 481 | 274 | 100 | 478 |
| Volume Left | 31 | 0 | 43 | 405 |
| Volume Right | 0 | 94 | 13 | 73 |
| cSH | 1225 | 1110 | 298 | 279 |
| Volume to Capacity | 0.03 | 0.00 | 0.34 | 1.71 |
| Queue Length 95th (ft) | 2 | 0 | 36 | 768 |
| Control Delay (s) | 0.8 | 0.0 | 23.0 | 367.3 |
| Lane LOS | A | | C | F |
| Approach Delay (s) | 0.8 | 0.0 | 23.0 | 367.3 |
| Approach LOS | | | C | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 133.7 | | |
| Intersection Capacity Utilization | 85.1% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 16 | 21 | 0 | 5 | 21 | 44 | 21 | 539 | 16 | 21 | 545 | 16 |
| Future Volume (vph) | 16 | 21 | 0 | 5 | 21 | 44 | 21 | 539 | 16 | 21 | 545 | 16 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | 0.97 | | | 0.91 | | | 1.00 | | | 0.99 | |
| Frt | | | | | 0.915 | | | 0.996 | | | 0.996 | |
| Flt Protected | | 0.979 | | | 0.996 | | | 0.998 | | | 0.998 | |
| Satd. Flow (prot) | 0 | 1406 | 0 | 0 | 1195 | 0 | 0 | 1408 | 0 | 0 | 1408 | 0 |
| Flt Permitted | | 0.856 | | | 0.981 | | | 0.972 | | | 0.972 | |
| Satd. Flow (perm) | 0 | 1191 | 0 | 0 | 1169 | 0 | 0 | 1369 | 0 | 0 | 1370 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | 70 | | | 2 | | | 2 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 659 | | | 649 | | | 380 | | | 618 | |
| Travel Time (s) | | 15.0 | | | 14.8 | | | 8.6 | | | 14.0 | |
| Confl. Peds. (#/hr) | 33 | | 29 | 29 | | 33 | 143 | | 60 | 60 | | 143 |
| Confl. Bikes (#/hr) | | | | | | | | | 1 | | | 7 |
| Peak Hour Factor | 0.80 | 0.80 | 0.80 | 0.52 | 0.52 | 0.52 | 0.95 | 0.95 | 0.95 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% | 8% | 0% | 1% | 0% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Adj. Flow (vph) | 20 | 26 | 0 | 10 | 40 | 85 | 22 | 567 | 17 | 21 | 556 | 16 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 46 | 0 | 0 | 135 | 0 | 0 | 606 | 0 | 0 | 593 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |

| Lane Group | Ø2 |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | |
| Future Volume (vph) | |
| Ideal Flow (vphpl) | |
| Lane Width (ft) | |
| Lane Util. Factor | |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Right Turn on Red | |
| Satd. Flow (RTOR) | |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | |
| Heavy Vehicles (%) | |
| Parking (#/hr) | |
| Adj. Flow (vph) | |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | |
| Enter Blocked Intersection | |
| Lane Alignment | |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | |
| Turning Speed (mph) | |
| Number of Detectors | |
| Detector Template | |
| Leading Detector (ft) | |
| Trailing Detector (ft) | |
| Detector 1 Position(ft) | |
| Detector 1 Size(ft) | |
| Detector 1 Type | |
| Detector 1 Channel | |
| Detector 1 Extend (s) | |
| Detector 1 Queue (s) | |
| Detector 1 Delay (s) | |
| Detector 2 Position(ft) | |
| Detector 2 Size(ft) | |
| Detector 2 Type | |
| Detector 2 Channel | |
| Detector 2 Extend (s) | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Detector Phase | 5 | 5 | | 5 | 5 | | 1 | 1 | | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | |
| Minimum Split (s) | 12.0 | 12.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Total Split (s) | 18.0 | 18.0 | | 18.0 | 18.0 | | 54.0 | 54.0 | | 54.0 | 54.0 | |
| Total Split (%) | 17.6% | 17.6% | | 17.6% | 17.6% | | 52.9% | 52.9% | | 52.9% | 52.9% | |
| Maximum Green (s) | 14.0 | 14.0 | | 14.0 | 14.0 | | 50.0 | 50.0 | | 50.0 | 50.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Lost Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lead/Lag | | | | | | | Lead | Lead | | Lead | Lead | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | Max | Max | | Max | Max | | Max | Max | | Max | Max | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 14.3 | | | 14.3 | | | 51.0 | | | 51.0 | |
| Actuated g/C Ratio | | 0.15 | | | 0.15 | | | 0.53 | | | 0.53 | |
| v/c Ratio | | 0.26 | | | 0.58 | | | 0.83 | | | 0.81 | |
| Control Delay | | 43.9 | | | 32.6 | | | 34.2 | | | 32.7 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 43.9 | | | 32.6 | | | 34.2 | | | 32.7 | |
| LOS | | D | | | C | | | C | | | C | |
| Approach Delay | | 43.9 | | | 32.6 | | | 34.2 | | | 32.7 | |
| Approach LOS | | D | | | C | | | C | | | C | |

**Intersection Summary**

Area Type: CBD
Cycle Length: 102
Actuated Cycle Length: 96
Natural Cycle: 90
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 33.7 Intersection LOS: C
Intersection Capacity Utilization 56.7% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 11: L Street & E 5th Street



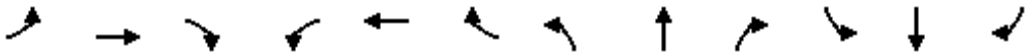
| Lane Group | Ø2 |
|---|---|
| Turn Type | |
| Protected Phases | 2 |
| Permitted Phases | |
| Detector Phase | |
| Switch Phase | |
| Minimum Initial (s) | 4.0 |
| Minimum Split (s) | 30.0 |
| Total Split (s) | 30.0 |
| Total Split (%) | 29% |
| Maximum Green (s) | 26.0 |
| Yellow Time (s) | 3.0 |
| All-Red Time (s) | 1.0 |
| Lost Time Adjust (s) | |
| Total Lost Time (s) | |
| Lead/Lag | Lag |
| Lead-Lag Optimize? | |
| Vehicle Extension (s) | 2.0 |
| Recall Mode | None |
| Walk Time (s) | 14.0 |
| Flash Dont Walk (s) | 12.0 |
| Pedestrian Calls (#/hr) | 66 |
| Act Effct Green (s) | |
| Actuated g/C Ratio | |
| v/c Ratio | |
| Control Delay | |
| Queue Delay | |
| Total Delay | |
| LOS | |
| Approach Delay | |
| Approach LOS | |

| Intersection Summary |
|---|

| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 46 | 135 | 606 | 593 |
| v/c Ratio | 0.26 | 0.58 | 0.83 | 0.81 |
| Control Delay | 43.9 | 32.6 | 34.2 | 32.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 43.9 | 32.6 | 34.2 | 32.7 |
| Queue Length 50th (ft) | 27 | 39 | 346 | 333 |
| Queue Length 95th (ft) | 55 | 35 | #582 | #562 |
| Internal Link Dist (ft) | 579 | 569 | 300 | 538 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 177 | 233 | 728 | 728 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.26 | 0.58 | 0.83 | 0.81 |

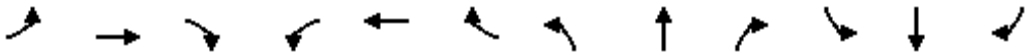
Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 16 | 21 | 0 | 5 | 21 | 44 | 21 | 539 | 16 | 21 | 545 | 16 |
| Future Volume (vph) | 16 | 21 | 0 | 5 | 21 | 44 | 21 | 539 | 16 | 21 | 545 | 16 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Total Lost time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Frpb, ped/bikes | | 1.00 | | | 0.92 | | | 1.00 | | | 1.00 | |
| Flpb, ped/bikes | | 0.97 | | | 0.99 | | | 1.00 | | | 1.00 | |
| Frt | | 1.00 | | | 0.92 | | | 1.00 | | | 1.00 | |
| Flt Protected | | 0.98 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | | 1363 | | | 1195 | | | 1406 | | | 1408 | |
| Flt Permitted | | 0.86 | | | 0.98 | | | 0.97 | | | 0.97 | |
| Satd. Flow (perm) | | 1192 | | | 1176 | | | 1369 | | | 1372 | |
| Peak-hour factor, PHF | 0.80 | 0.80 | 0.80 | 0.52 | 0.52 | 0.52 | 0.95 | 0.95 | 0.95 | 0.98 | 0.98 | 0.98 |
| Adj. Flow (vph) | 20 | 26 | 0 | 10 | 40 | 85 | 22 | 567 | 17 | 21 | 556 | 16 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 60 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| Lane Group Flow (vph) | 0 | 46 | 0 | 0 | 75 | 0 | 0 | 605 | 0 | 0 | 592 | 0 |
| Confl. Peds. (#/hr) | 33 | | 29 | 29 | | 33 | 143 | | 60 | 60 | | 143 |
| Confl. Bikes (#/hr) | | | | | | | | | 1 | | | 7 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% | 8% | 0% | 1% | 0% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 14.3 | | | 14.3 | | | 51.0 | | | 51.0 | |
| Effective Green, g (s) | | 14.3 | | | 14.3 | | | 51.0 | | | 51.0 | |
| Actuated g/C Ratio | | 0.15 | | | 0.15 | | | 0.53 | | | 0.53 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | | | 2.0 | | | 2.0 | |
| Lane Grp Cap (vph) | | 175 | | | 173 | | | 720 | | | 722 | |
| v/s Ratio Prot | | | | | | | | | | | | |
| v/s Ratio Perm | | 0.04 | | | c0.06 | | | c0.44 | | | 0.43 | |
| v/c Ratio | | 0.26 | | | 0.44 | | | 0.84 | | | 0.82 | |
| Uniform Delay, d1 | | 36.6 | | | 37.6 | | | 19.5 | | | 19.1 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 3.6 | | | 7.8 | | | 11.4 | | | 10.1 | |
| Delay (s) | | 40.3 | | | 45.4 | | | 30.9 | | | 29.2 | |
| Level of Service | | D | | | D | | | C | | | C | |
| Approach Delay (s) | | 40.3 | | | 45.4 | | | 30.9 | | | 29.2 | |
| Approach LOS | | D | | | D | | | C | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 31.9 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.58 | | |
| Actuated Cycle Length (s) | 96.9 | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 56.7% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 21 | 27 | 16 | 5 | 16 | 11 | 16 | 486 | 16 | 21 | 442 | 28 |
| Future Volume (vph) | 21 | 27 | 16 | 5 | 16 | 11 | 16 | 486 | 16 | 21 | 442 | 28 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 16 | 12 | 12 | 15 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | 0.96 | | | 0.97 | | | 1.00 | | | 0.99 | |
| Frt | | 0.967 | | | 0.955 | | | 0.996 | | | 0.992 | |
| Flt Protected | | 0.984 | | | 0.992 | | | 0.998 | | | 0.998 | |
| Satd. Flow (prot) | 0 | 1489 | 0 | 0 | 1513 | 0 | 0 | 1582 | 0 | 0 | 1548 | 0 |
| Flt Permitted | | 0.922 | | | 0.969 | | | 0.981 | | | 0.969 | |
| Satd. Flow (perm) | 0 | 1380 | 0 | 0 | 1458 | 0 | 0 | 1552 | 0 | 0 | 1502 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 18 | | | 12 | | | 4 | | | 8 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 602 | | | 677 | | | 676 | | | 535 | |
| Travel Time (s) | | 13.7 | | | 15.4 | | | 15.4 | | | 12.2 | |
| Confl. Peds. (#/hr) | 15 | | 38 | 38 | | 15 | 58 | | 32 | 32 | | 58 |
| Confl. Bikes (#/hr) | | | | | | | | | 1 | | | 2 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.89 | 0.89 | 0.89 | 0.87 | 0.87 | 0.87 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 10% | 12% | 0% | 0% | 8% | 0% | 0% | 0% | 0% | 0% | 1% | 4% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | | | | | |
| Adj. Flow (vph) | 24 | 31 | 18 | 6 | 18 | 12 | 18 | 559 | 18 | 23 | 491 | 31 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 73 | 0 | 0 | 36 | 0 | 0 | 595 | 0 | 0 | 545 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.12 | 1.14 | 1.14 | 1.16 | 1.14 | 1.14 | 1.25 | 1.14 | 1.14 | 1.25 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Detector Phase | 5 | 5 | | 5 | 5 | | 1 | 1 | | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 6.0 | 6.0 | | 6.0 | 6.0 | | 20.0 | 20.0 | | 20.0 | 20.0 | |
| Minimum Split (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 24.0 | 24.0 | | 24.0 | 24.0 | |
| Total Split (s) | 24.0 | 24.0 | | 24.0 | 24.0 | | 54.0 | 54.0 | | 54.0 | 54.0 | |
| Total Split (%) | 30.8% | 30.8% | | 30.8% | 30.8% | | 69.2% | 69.2% | | 69.2% | 69.2% | |
| Maximum Green (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 50.0 | 50.0 | | 50.0 | 50.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Lost Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | Max | Max | | Max | Max | | Max | Max | | Max | Max | |
| Walk Time (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | |
| Flash Dont Walk (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | |
| Pedestrian Calls (#/hr) | 13 | 13 | | 13 | 13 | | 23 | 23 | | 23 | 23 | |
| Act Effct Green (s) | | 20.0 | | | 20.0 | | | 50.0 | | | 50.0 | |
| Actuated g/C Ratio | | 0.26 | | | 0.26 | | | 0.64 | | | 0.64 | |
| v/c Ratio | | 0.20 | | | 0.09 | | | 0.60 | | | 0.56 | |
| Control Delay | | 19.8 | | | 17.4 | | | 11.2 | | | 10.6 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 19.8 | | | 17.4 | | | 11.2 | | | 10.6 | |
| LOS | | B | | | B | | | B | | | B | |
| Approach Delay | | 19.8 | | | 17.4 | | | 11.2 | | | 10.6 | |
| Approach LOS | | B | | | B | | | B | | | B | |

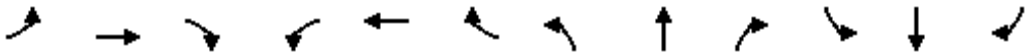
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 78 | | | |
| Actuated Cycle Length: 78 | | | |
| Natural Cycle: 55 | | | |
| Control Type: Semi Act-Uncoord | | | |
| Maximum v/c Ratio: 0.60 | | | |
| Intersection Signal Delay: 11.6 | | Intersection LOS: B | |
| Intersection Capacity Utilization 58.1% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 12: L Street & E 8th Street



| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 73 | 36 | 595 | 545 |
| v/c Ratio | 0.20 | 0.09 | 0.60 | 0.56 |
| Control Delay | 19.8 | 17.4 | 11.2 | 10.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 19.8 | 17.4 | 11.2 | 10.6 |
| Queue Length 50th (ft) | 21 | 9 | 146 | 128 |
| Queue Length 95th (ft) | 52 | 31 | 223 | 211 |
| Internal Link Dist (ft) | 522 | 597 | 596 | 455 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 367 | 382 | 996 | 965 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.20 | 0.09 | 0.60 | 0.56 |

Intersection Summary

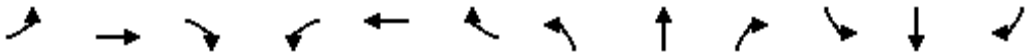


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 21 | 27 | 16 | 5 | 16 | 11 | 16 | 486 | 16 | 21 | 442 | 28 |
| Future Volume (vph) | 21 | 27 | 16 | 5 | 16 | 11 | 16 | 486 | 16 | 21 | 442 | 28 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 16 | 12 | 12 | 15 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Total Lost time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Frpb, ped/bikes | | 0.97 | | | 0.98 | | | 1.00 | | | 0.99 | |
| Flpb, ped/bikes | | 0.99 | | | 0.99 | | | 1.00 | | | 1.00 | |
| Frt | | 0.97 | | | 0.95 | | | 1.00 | | | 0.99 | |
| Flt Protected | | 0.98 | | | 0.99 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | | 1472 | | | 1493 | | | 1580 | | | 1547 | |
| Flt Permitted | | 0.92 | | | 0.97 | | | 0.98 | | | 0.97 | |
| Satd. Flow (perm) | | 1379 | | | 1459 | | | 1553 | | | 1503 | |
| Peak-hour factor, PHF | 0.88 | 0.88 | 0.88 | 0.89 | 0.89 | 0.89 | 0.87 | 0.87 | 0.87 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 24 | 31 | 18 | 6 | 18 | 12 | 18 | 559 | 18 | 23 | 491 | 31 |
| RTOR Reduction (vph) | 0 | 13 | 0 | 0 | 9 | 0 | 0 | 1 | 0 | 0 | 3 | 0 |
| Lane Group Flow (vph) | 0 | 60 | 0 | 0 | 27 | 0 | 0 | 594 | 0 | 0 | 542 | 0 |
| Confl. Peds. (#/hr) | 15 | | 38 | 38 | | 15 | 58 | | 32 | 32 | | 58 |
| Confl. Bikes (#/hr) | | | | | | | | | 1 | | | 2 |
| Heavy Vehicles (%) | 10% | 12% | 0% | 0% | 8% | 0% | 0% | 0% | 0% | 0% | 1% | 4% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 20.0 | | | 20.0 | | | 50.0 | | | 50.0 | |
| Effective Green, g (s) | | 20.0 | | | 20.0 | | | 50.0 | | | 50.0 | |
| Actuated g/C Ratio | | 0.26 | | | 0.26 | | | 0.64 | | | 0.64 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | | | 2.0 | | | 2.0 | |
| Lane Grp Cap (vph) | | 353 | | | 374 | | | 995 | | | 963 | |
| v/s Ratio Prot | | | | | | | | | | | | |
| v/s Ratio Perm | | c0.04 | | | 0.02 | | | c0.38 | | | 0.36 | |
| v/c Ratio | | 0.17 | | | 0.07 | | | 0.60 | | | 0.56 | |
| Uniform Delay, d1 | | 22.5 | | | 22.0 | | | 8.1 | | | 7.9 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 1.0 | | | 0.4 | | | 2.6 | | | 2.4 | |
| Delay (s) | | 23.6 | | | 22.3 | | | 10.8 | | | 10.2 | |
| Level of Service | | C | | | C | | | B | | | B | |
| Approach Delay (s) | | 23.6 | | | 22.3 | | | 10.8 | | | 10.2 | |
| Approach LOS | | C | | | C | | | B | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 11.6 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.47 | | |
| Actuated Cycle Length (s) | 78.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 58.1% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 5 | 5 | 0 | 0 | 16 | 16 | 5 | 480 | 5 | 5 | 416 | 21 |
| Future Volume (vph) | 5 | 5 | 0 | 0 | 16 | 16 | 5 | 480 | 5 | 5 | 416 | 21 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | 0.932 | | | 0.999 | | | 0.994 | |
| Flt Protected | | 0.976 | | | | | | | | | 0.999 | |
| Satd. Flow (prot) | 0 | 1854 | 0 | 0 | 1771 | 0 | 0 | 1898 | 0 | 0 | 1887 | 0 |
| Flt Permitted | | 0.976 | | | | | | | | | 0.999 | |
| Satd. Flow (perm) | 0 | 1854 | 0 | 0 | 1771 | 0 | 0 | 1898 | 0 | 0 | 1887 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 239 | | | 189 | | | 91 | | | 676 | |
| Travel Time (s) | | 5.4 | | | 4.3 | | | 2.1 | | | 15.4 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 5 | 5 | 0 | 0 | 17 | 17 | 5 | 522 | 5 | 5 | 452 | 23 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 10 | 0 | 0 | 34 | 0 | 0 | 532 | 0 | 0 | 480 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |

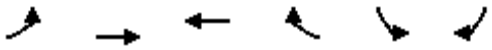
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 39.9% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |



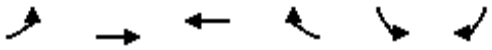
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 5 | 5 | 0 | 0 | 16 | 16 | 5 | 480 | 5 | 5 | 416 | 21 |
| Future Volume (Veh/h) | 5 | 5 | 0 | 0 | 16 | 16 | 5 | 480 | 5 | 5 | 416 | 21 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 5 | 5 | 0 | 0 | 17 | 17 | 5 | 522 | 5 | 5 | 452 | 23 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | 676 | |
| pX, platoon unblocked | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | | 0.87 | | | | | |
| vC, conflicting volume | 1034 | 1010 | 464 | 1010 | 1020 | 524 | 475 | | | 527 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 966 | 940 | 314 | 940 | 950 | 524 | 327 | | | 527 | | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 97 | 98 | 100 | 100 | 93 | 97 | 100 | | | 100 | | |
| cM capacity (veh/h) | 187 | 230 | 639 | 210 | 227 | 557 | 1087 | | | 1050 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 10 | 34 | 532 | 480 |
| Volume Left | 5 | 0 | 5 | 5 |
| Volume Right | 0 | 17 | 5 | 23 |
| cSH | 206 | 322 | 1087 | 1050 |
| Volume to Capacity | 0.05 | 0.11 | 0.00 | 0.00 |
| Queue Length 95th (ft) | 4 | 9 | 0 | 0 |
| Control Delay (s) | 23.3 | 17.5 | 0.1 | 0.1 |
| Lane LOS | C | C | A | A |
| Approach Delay (s) | 23.3 | 17.5 | 0.1 | 0.1 |
| Approach LOS | C | C | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 0.9 | | | |
| Intersection Capacity Utilization | 39.9% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR | Ø2 |
|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | |
| Traffic Volume (vph) | 480 | 411 | 373 | 11 | 0 | 0 | |
| Future Volume (vph) | 480 | 411 | 373 | 11 | 0 | 0 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Lane Util. Factor | 0.95 | 0.95 | 0.95 | 0.95 | 1.00 | 1.00 | |
| Frt | | | 0.996 | | | | |
| Flt Protected | | 0.974 | | | | | |
| Satd. Flow (prot) | 0 | 3516 | 3596 | 0 | 0 | 0 | |
| Flt Permitted | | 0.631 | | | | | |
| Satd. Flow (perm) | 0 | 2278 | 3596 | 0 | 0 | 0 | |
| Right Turn on Red | | | | Yes | | Yes | |
| Satd. Flow (RTOR) | | | 6 | | | | |
| Link Speed (mph) | | 30 | 30 | | 30 | | |
| Link Distance (ft) | | 336 | 398 | | 184 | | |
| Travel Time (s) | | 7.6 | 9.0 | | 4.2 | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | |
| Adj. Flow (vph) | 522 | 447 | 405 | 12 | 0 | 0 | |
| Shared Lane Traffic (%) | | | | | | | |
| Lane Group Flow (vph) | 0 | 969 | 417 | 0 | 0 | 0 | |
| Enter Blocked Intersection | No | No | No | No | No | No | |
| Lane Alignment | Left | Left | Left | Right | Left | Right | |
| Median Width(ft) | | 0 | 0 | | 0 | | |
| Link Offset(ft) | | 0 | 0 | | 0 | | |
| Crosswalk Width(ft) | | 16 | 16 | | 16 | | |
| Two way Left Turn Lane | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Turning Speed (mph) | 15 | | | 9 | 15 | 9 | |
| Number of Detectors | 1 | 2 | 2 | | | | |
| Detector Template | Left | Thru | Thru | | | | |
| Leading Detector (ft) | 20 | 100 | 100 | | | | |
| Trailing Detector (ft) | 0 | 0 | 0 | | | | |
| Detector 1 Position(ft) | 0 | 0 | 0 | | | | |
| Detector 1 Size(ft) | 20 | 6 | 6 | | | | |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | | | | |
| Detector 1 Channel | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | | | | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | | | | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | | | | |
| Detector 2 Position(ft) | | 94 | 94 | | | | |
| Detector 2 Size(ft) | | 6 | 6 | | | | |
| Detector 2 Type | | Cl+Ex | Cl+Ex | | | | |
| Detector 2 Channel | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | 0.0 | | | | |
| Turn Type | Perm | NA | NA | | | | |
| Protected Phases | | 1 | 1 | | | | 2 |
| Permitted Phases | 1 | | | | | | |
| Detector Phase | 1 | 1 | 1 | | | | |
| Switch Phase | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | 8.0 | | | | 10.0 |



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR | Ø2 |
|---|---|---|---|---|---|---|---|
| Minimum Split (s) | 25.4 | 25.4 | 25.4 | | | | 25.0 |
| Total Split (s) | 70.0 | 70.0 | 70.0 | | | | 25.0 |
| Total Split (%) | 73.7% | 73.7% | 73.7% | | | | 26% |
| Maximum Green (s) | 62.6 | 62.6 | 62.6 | | | | 20.5 |
| Yellow Time (s) | 5.4 | 5.4 | 5.4 | | | | 3.5 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | | | 1.0 |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | | | |
| Total Lost Time (s) | | 7.4 | 7.4 | | | | |
| Lead/Lag | Lead | Lead | Lead | | | | Lag |
| Lead-Lag Optimize? | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | | | | 2.0 |
| Recall Mode | Max | Max | Max | | | | None |
| Walk Time (s) | | | | | | | 18.0 |
| Flash Dont Walk (s) | | | | | | | 1.0 |
| Pedestrian Calls (#/hr) | | | | | | | 28 |
| Act Effct Green (s) | | 83.6 | 83.6 | | | | |
| Actuated g/C Ratio | | 0.89 | 0.89 | | | | |
| v/c Ratio | | 0.48 | 0.13 | | | | |
| Control Delay | | 5.0 | 2.7 | | | | |
| Queue Delay | | 0.0 | 0.0 | | | | |
| Total Delay | | 5.0 | 2.7 | | | | |
| LOS | | A | A | | | | |
| Approach Delay | | 5.0 | 2.7 | | | | |
| Approach LOS | | A | A | | | | |

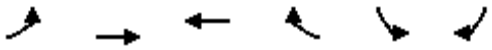
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 95 | | | |
| Actuated Cycle Length: 94.4 | | | |
| Natural Cycle: 60 | | | |
| Control Type: Semi Act-Uncoord | | | |
| Maximum v/c Ratio: 0.48 | | | |
| Intersection Signal Delay: 4.3 | | Intersection LOS: A | |
| Intersection Capacity Utilization 49.6% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 14: Day Blvd Ped



| Lane Group | EBT | WBT |
|---|---|---|
| Lane Group Flow (vph) | 969 | 417 |
| v/c Ratio | 0.48 | 0.13 |
| Control Delay | 5.0 | 2.7 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 5.0 | 2.7 |
| Queue Length 50th (ft) | 0 | 0 |
| Queue Length 95th (ft) | 207 | 58 |
| Internal Link Dist (ft) | 256 | 318 |
| Turn Bay Length (ft) | | |
| Base Capacity (vph) | 2018 | 3187 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.48 | 0.13 |

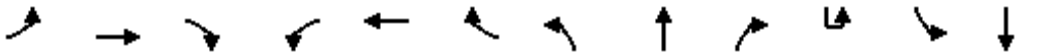
Intersection Summary



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 480 | 411 | 373 | 11 | 0 | 0 |
| Future Volume (vph) | 480 | 411 | 373 | 11 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 7.4 | 7.4 | | | |
| Lane Util. Factor | | 0.95 | 0.95 | | | |
| Frt | | 1.00 | 1.00 | | | |
| Flt Protected | | 0.97 | 1.00 | | | |
| Satd. Flow (prot) | | 3515 | 3594 | | | |
| Flt Permitted | | 0.63 | 1.00 | | | |
| Satd. Flow (perm) | | 2278 | 3594 | | | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 522 | 447 | 405 | 12 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 1 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 969 | 416 | 0 | 0 | 0 |
| Turn Type | Perm | NA | NA | | | |
| Protected Phases | | 1 | 1 | | | |
| Permitted Phases | 1 | | | | | |
| Actuated Green, G (s) | | 78.7 | 78.7 | | | |
| Effective Green, g (s) | | 78.7 | 78.7 | | | |
| Actuated g/C Ratio | | 0.81 | 0.81 | | | |
| Clearance Time (s) | | 7.4 | 7.4 | | | |
| Vehicle Extension (s) | | 2.0 | 2.0 | | | |
| Lane Grp Cap (vph) | | 1844 | 2909 | | | |
| v/s Ratio Prot | | | 0.12 | | | |
| v/s Ratio Perm | | c0.43 | | | | |
| v/c Ratio | | 0.53 | 0.14 | | | |
| Uniform Delay, d1 | | 3.1 | 2.0 | | | |
| Progression Factor | | 1.00 | 1.00 | | | |
| Incremental Delay, d2 | | 1.1 | 0.1 | | | |
| Delay (s) | | 4.1 | 2.1 | | | |
| Level of Service | | A | A | | | |
| Approach Delay (s) | | 4.1 | 2.1 | | 0.0 | |
| Approach LOS | | A | A | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 3.5 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.48 | | |
| Actuated Cycle Length (s) | 97.2 | Sum of lost time (s) | 11.9 |
| Intersection Capacity Utilization | 49.6% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



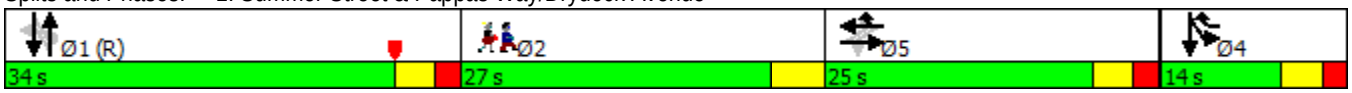
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBU | SBL | SBT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 144 | 99 | 5 | 151 | 54 | 115 | 11 | 1039 | 336 | 5 | 356 | 609 |
| Future Volume (vph) | 144 | 99 | 5 | 151 | 54 | 115 | 11 | 1039 | 336 | 5 | 356 | 609 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 14 | 12 | 12 | 13 | 16 | 10 | 11 | 12 | 12 | 13 | 12 |
| Storage Length (ft) | 0 | | 0 | 350 | | 0 | 70 | | 0 | | 350 | |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 0 | | 1 | |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | | 25 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 1.00 | 0.95 |
| Ped Bike Factor | | 0.98 | | | 0.99 | | 0.96 | 0.99 | | | 1.00 | 0.97 |
| Frt | | 0.997 | | | | 0.850 | | 0.963 | | | | 0.973 |
| Flt Protected | | 0.972 | | | 0.964 | | 0.950 | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 1594 | 0 | 0 | 1540 | 1458 | 1516 | 2802 | 0 | 0 | 1556 | 2741 |
| Flt Permitted | | 0.626 | | | 0.622 | | 0.155 | | | | 0.155 | |
| Satd. Flow (perm) | 0 | 1010 | 0 | 0 | 985 | 1458 | 238 | 2802 | 0 | 0 | 253 | 2741 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | |
| Satd. Flow (RTOR) | | 1 | | | | 134 | | 44 | | | | 33 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | | 30 |
| Link Distance (ft) | | 745 | | | 950 | | | 1523 | | | | 585 |
| Travel Time (s) | | 16.9 | | | 21.6 | | | 34.6 | | | | 13.3 |
| Confl. Peds. (#/hr) | 32 | | 17 | 17 | | 32 | 127 | | 36 | | 36 | |
| Confl. Bikes (#/hr) | | | 7 | | | 3 | | | 7 | | | |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.86 | 0.86 | 0.86 | 0.89 | 0.89 | 0.89 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 11% | 11% | 0% | 8% | 18% | 13% | 0% | 8% | 2% | 0% | 8% | 13% |
| Adj. Flow (vph) | 169 | 116 | 6 | 176 | 63 | 134 | 12 | 1167 | 378 | 5 | 379 | 648 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 291 | 0 | 0 | 239 | 134 | 12 | 1545 | 0 | 0 | 384 | 789 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | R NA | Left | Left |
| Median Width(ft) | | 0 | | | 6 | | | 13 | | | | 17 |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | | 0 |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | | 16 |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.05 | 1.14 | 1.14 | 1.10 | 0.97 | 1.25 | 1.19 | 1.14 | 1.14 | 1.10 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 9 | 15 | |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | | 1 | 1 | 2 |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | | Left | Left | Thru |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | 20 | 20 | 100 | | 20 | 20 | 100 |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | 20 | 20 | 6 | | 20 | 20 | 6 |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | | 94 |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | | 6 |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | Cl+Ex |

| Lane Group | SBR | Ø2 |
|---|---|---|
| Lane Configurations | | |
| Traffic Volume (vph) | 133 | |
| Future Volume (vph) | 133 | |
| Ideal Flow (vphpl) | 1900 | |
| Lane Width (ft) | 12 | |
| Storage Length (ft) | 0 | |
| Storage Lanes | 0 | |
| Taper Length (ft) | | |
| Lane Util. Factor | 0.95 | |
| Ped Bike Factor | | |
| Frt | | |
| Flt Protected | | |
| Satd. Flow (prot) | 0 | |
| Flt Permitted | | |
| Satd. Flow (perm) | 0 | |
| Right Turn on Red | Yes | |
| Satd. Flow (RTOR) | | |
| Link Speed (mph) | | |
| Link Distance (ft) | | |
| Travel Time (s) | | |
| Confl. Peds. (#/hr) | 127 | |
| Confl. Bikes (#/hr) | 12 | |
| Peak Hour Factor | 0.94 | |
| Heavy Vehicles (%) | 6% | |
| Adj. Flow (vph) | 141 | |
| Shared Lane Traffic (%) | | |
| Lane Group Flow (vph) | 0 | |
| Enter Blocked Intersection | No | |
| Lane Alignment | Right | |
| Median Width(ft) | | |
| Link Offset(ft) | | |
| Crosswalk Width(ft) | | |
| Two way Left Turn Lane | | |
| Headway Factor | 1.14 | |
| Turning Speed (mph) | 9 | |
| Number of Detectors | | |
| Detector Template | | |
| Leading Detector (ft) | | |
| Trailing Detector (ft) | | |
| Detector 1 Position(ft) | | |
| Detector 1 Size(ft) | | |
| Detector 1 Type | | |
| Detector 1 Channel | | |
| Detector 1 Extend (s) | | |
| Detector 1 Queue (s) | | |
| Detector 1 Delay (s) | | |
| Detector 2 Position(ft) | | |
| Detector 2 Size(ft) | | |
| Detector 2 Type | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBU | SBL | SBT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | 0.0 |
| Turn Type | Perm | NA | | Perm | NA | pt+ov | Perm | NA | | D.Pm | D.P+P | NA |
| Protected Phases | | 5 | | | 5 | 5 4 | | 1 | | | 4 | 1 4 |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | 1 | |
| Detector Phase | 5 | 5 | | 5 | 5 | 5 4 | 1 | 1 | | 1 | 4 | 1 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | |
| Minimum Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | | 13.0 | 13.0 | | 13.0 | 13.0 | |
| Total Split (s) | 25.0 | 25.0 | | 25.0 | 25.0 | | 34.0 | 34.0 | | 34.0 | 14.0 | |
| Total Split (%) | 25.0% | 25.0% | | 25.0% | 25.0% | | 34.0% | 34.0% | | 34.0% | 14.0% | |
| Maximum Green (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 29.0 | 29.0 | | 29.0 | 9.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | 0.0 | 0.0 | | | 0.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | 5.0 | 5.0 | | | 5.0 | |
| Lead/Lag | | | | | | | Lead | Lead | | Lead | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | None | None | | None | None | | C-Max | C-Max | | C-Max | None | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 41.6 | | | 41.6 | 55.6 | 29.0 | 29.0 | | | 38.0 | 43.0 |
| Actuated g/C Ratio | | 0.42 | | | 0.42 | 0.56 | 0.29 | 0.29 | | | 0.38 | 0.43 |
| v/c Ratio | | 0.69 | | | 0.58 | 0.15 | 0.17 | 1.83 | | | 1.80 | 0.66 |
| Control Delay | | 37.4 | | | 33.5 | 3.9 | 34.2 | 404.3 | | | 400.2 | 24.9 |
| Queue Delay | | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | | | 0.0 | 0.0 |
| Total Delay | | 37.4 | | | 33.5 | 3.9 | 34.2 | 404.3 | | | 400.2 | 24.9 |
| LOS | | D | | | C | A | C | F | | | F | C |
| Approach Delay | | 37.4 | | | 22.9 | | | 401.4 | | | | 147.8 |
| Approach LOS | | D | | | C | | | F | | | | F |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 100 | | | |
| Actuated Cycle Length: 100 | | | |
| Offset: 0 (0%), Referenced to phase 1:NBSB, Start of Yellow | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 1.83 | | | |
| Intersection Signal Delay: 240.9 | | Intersection LOS: F | |
| Intersection Capacity Utilization 109.3% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 1: Summer Street & Pappas Way/Drydock Avenue





| Lane Group | SBR | Ø2 |
|---|---|---|
| Detector 2 Channel | | |
| Detector 2 Extend (s) | | |
| Turn Type | | |
| Protected Phases | | 2 |
| Permitted Phases | | |
| Detector Phase | | |
| Switch Phase | | |
| Minimum Initial (s) | | 4.0 |
| Minimum Split (s) | | 27.0 |
| Total Split (s) | | 27.0 |
| Total Split (%) | | 27% |
| Maximum Green (s) | | 23.0 |
| Yellow Time (s) | | 4.0 |
| All-Red Time (s) | | 0.0 |
| Lost Time Adjust (s) | | |
| Total Lost Time (s) | | |
| Lead/Lag | | Lag |
| Lead-Lag Optimize? | | |
| Vehicle Extension (s) | | 2.0 |
| Recall Mode | | None |
| Walk Time (s) | | 7.0 |
| Flash Dont Walk (s) | | 16.0 |
| Pedestrian Calls (#/hr) | | 10 |
| Act Effct Green (s) | | |
| Actuated g/C Ratio | | |
| v/c Ratio | | |
| Control Delay | | |
| Queue Delay | | |
| Total Delay | | |
| LOS | | |
| Approach Delay | | |
| Approach LOS | | |

| Intersection Summary |
|---|



| Lane Group | EBT | WBT | WBR | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 291 | 239 | 134 | 12 | 1545 | 384 | 789 |
| v/c Ratio | 0.69 | 0.58 | 0.15 | 0.17 | 1.83 | 1.80 | 0.66 |
| Control Delay | 37.4 | 33.5 | 3.9 | 34.2 | 404.3 | 400.2 | 24.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 37.4 | 33.5 | 3.9 | 34.2 | 404.3 | 400.2 | 24.9 |
| Queue Length 50th (ft) | 133 | 103 | 0 | 6 | ~787 | ~324 | 196 |
| Queue Length 95th (ft) | #390 | #318 | 35 | 22 | #912 | #507 | 264 |
| Internal Link Dist (ft) | 665 | 870 | | | 1443 | | 505 |
| Turn Bay Length (ft) | | | | 70 | | 350 | |
| Base Capacity (vph) | 420 | 409 | 870 | 69 | 843 | 213 | 1197 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.69 | 0.58 | 0.15 | 0.17 | 1.83 | 1.80 | 0.66 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBU | SBL | SBT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 144 | 99 | 5 | 151 | 54 | 115 | 11 | 1039 | 336 | 5 | 356 | 609 |
| Future Volume (vph) | 144 | 99 | 5 | 151 | 54 | 115 | 11 | 1039 | 336 | 5 | 356 | 609 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 14 | 12 | 12 | 13 | 16 | 10 | 11 | 12 | 12 | 13 | 12 |
| Total Lost time (s) | | 5.0 | | | 5.0 | 5.0 | 5.0 | 5.0 | | | 5.0 | 5.0 |
| Lane Util. Factor | | 1.00 | | | 1.00 | 1.00 | 1.00 | 0.95 | | | 1.00 | 0.95 |
| Frpb, ped/bikes | | 1.00 | | | 1.00 | 1.00 | 1.00 | 0.99 | | | 1.00 | 0.97 |
| Flpb, ped/bikes | | 0.99 | | | 0.99 | 1.00 | 0.96 | 1.00 | | | 1.00 | 1.00 |
| Frt | | 1.00 | | | 1.00 | 0.85 | 1.00 | 0.96 | | | 1.00 | 0.97 |
| Flt Protected | | 0.97 | | | 0.96 | 1.00 | 0.95 | 1.00 | | | 0.95 | 1.00 |
| Satd. Flow (prot) | | 1580 | | | 1532 | 1458 | 1454 | 2799 | | | 1555 | 2736 |
| Flt Permitted | | 0.63 | | | 0.62 | 1.00 | 0.16 | 1.00 | | | 0.16 | 1.00 |
| Satd. Flow (perm) | | 1018 | | | 989 | 1458 | 237 | 2799 | | | 254 | 2736 |
| Peak-hour factor, PHF | 0.85 | 0.85 | 0.85 | 0.86 | 0.86 | 0.86 | 0.89 | 0.89 | 0.89 | 0.94 | 0.94 | 0.94 |
| Adj. Flow (vph) | 169 | 116 | 6 | 176 | 63 | 134 | 12 | 1167 | 378 | 5 | 379 | 648 |
| RTOR Reduction (vph) | 0 | 1 | 0 | 0 | 0 | 59 | 0 | 33 | 0 | 0 | 0 | 20 |
| Lane Group Flow (vph) | 0 | 290 | 0 | 0 | 239 | 75 | 12 | 1512 | 0 | 0 | 384 | 769 |
| Confl. Peds. (#/hr) | 32 | | 17 | 17 | | 32 | 127 | | 36 | | 36 | |
| Confl. Bikes (#/hr) | | | 7 | | | 3 | | | 7 | | | |
| Heavy Vehicles (%) | 11% | 11% | 0% | 8% | 18% | 13% | 0% | 8% | 2% | 0% | 8% | 13% |
| Turn Type | Perm | NA | | Perm | NA | pt+ov | Perm | NA | | D.Pm | D.P+P | NA |
| Protected Phases | | 5 | | | 5 | 5 4 | | 1 | | | 4 | 1 4 |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | 1 | |
| Actuated Green, G (s) | | 41.6 | | | 41.6 | 55.6 | 25.8 | 25.8 | | | 34.8 | 39.8 |
| Effective Green, g (s) | | 41.6 | | | 41.6 | 55.6 | 25.8 | 25.8 | | | 34.8 | 39.8 |
| Actuated g/C Ratio | | 0.42 | | | 0.42 | 0.56 | 0.26 | 0.26 | | | 0.35 | 0.40 |
| Clearance Time (s) | | 5.0 | | | 5.0 | | 5.0 | 5.0 | | | 5.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | | 2.0 | 2.0 | | | 2.0 | |
| Lane Grp Cap (vph) | | 423 | | | 411 | 810 | 61 | 722 | | | 205 | 1088 |
| v/s Ratio Prot | | | | | | 0.05 | | c0.54 | | | c0.17 | 0.28 |
| v/s Ratio Perm | | c0.29 | | | 0.24 | | 0.05 | | | | 0.48 | |
| v/c Ratio | | 0.69 | | | 0.58 | 0.09 | 0.20 | 2.09 | | | 1.87 | 0.71 |
| Uniform Delay, d1 | | 23.9 | | | 22.5 | 10.4 | 29.0 | 37.1 | | | 28.7 | 25.2 |
| Progression Factor | | 1.00 | | | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 | 1.00 |
| Incremental Delay, d2 | | 3.7 | | | 1.4 | 0.0 | 7.1 | 497.3 | | | 410.9 | 1.7 |
| Delay (s) | | 27.5 | | | 23.8 | 10.4 | 36.1 | 534.4 | | | 439.6 | 26.9 |
| Level of Service | | C | | | C | B | D | F | | | F | C |
| Approach Delay (s) | | 27.5 | | | 19.0 | | | 530.6 | | | | 162.0 |
| Approach LOS | | C | | | B | | | F | | | | F |

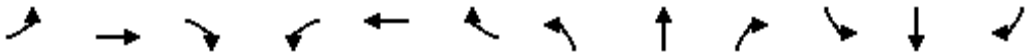
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 303.9 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 1.23 | | |
| Actuated Cycle Length (s) | 100.0 | Sum of lost time (s) | 19.0 |
| Intersection Capacity Utilization | 109.3% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



| Movement | SBR |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | 133 |
| Future Volume (vph) | 133 |
| Ideal Flow (vphpl) | 1900 |
| Lane Width | 12 |
| Total Lost time (s) | |
| Lane Util. Factor | |
| Frpb, ped/bikes | |
| Flpb, ped/bikes | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Peak-hour factor, PHF | 0.94 |
| Adj. Flow (vph) | 141 |
| RTOR Reduction (vph) | 0 |
| Lane Group Flow (vph) | 0 |
| Confl. Peds. (#/hr) | 127 |
| Confl. Bikes (#/hr) | 12 |
| Heavy Vehicles (%) | 6% |
| Turn Type | |
| Protected Phases | |
| Permitted Phases | |
| Actuated Green, G (s) | |
| Effective Green, g (s) | |
| Actuated g/C Ratio | |
| Clearance Time (s) | |
| Vehicle Extension (s) | |
| Lane Grp Cap (vph) | |
| v/s Ratio Prot | |
| v/s Ratio Perm | |
| v/c Ratio | |
| Uniform Delay, d1 | |
| Progression Factor | |
| Incremental Delay, d2 | |
| Delay (s) | |
| Level of Service | |
| Approach Delay (s) | |
| Approach LOS | |

| Intersection Summary |
|---|

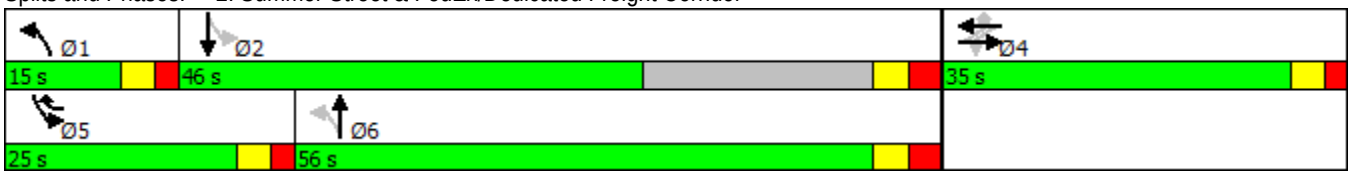


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 32 | 0 | 0 | 16 | 0 | 59 | 0 | 1295 | 21 | 94 | 691 | 0 |
| Future Volume (vph) | 32 | 0 | 0 | 16 | 0 | 59 | 0 | 1295 | 21 | 94 | 691 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 13 | 13 | 13 | 12 | 12 | 12 | 10 | 10 | 10 | 11 | 11 | 11 |
| Storage Length (ft) | 0 | | 0 | 0 | | 60 | 60 | | 0 | 120 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 50 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Frt | | | | | | 0.850 | | 0.998 | | | | |
| Flt Protected | | 0.950 | | | 0.950 | | | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1679 | 0 | 0 | 1624 | 727 | 1596 | 3026 | 0 | 785 | 2991 | 0 |
| Flt Permitted | | 0.746 | | | 0.734 | | | | | 0.109 | | |
| Satd. Flow (perm) | 0 | 1318 | 0 | 0 | 1255 | 727 | 1596 | 3026 | 0 | 90 | 2991 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | | 28 | | 2 | | | | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 203 | | | 352 | | | 675 | | | 1523 | |
| Travel Time (s) | | 4.6 | | | 8.0 | | | 15.3 | | | 34.6 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 100% | 0% | 0% | 0% | 100% | 5% | 0% |
| Adj. Flow (vph) | 35 | 0 | 0 | 17 | 0 | 64 | 0 | 1408 | 23 | 102 | 751 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 35 | 0 | 0 | 17 | 64 | 0 | 1431 | 0 | 102 | 751 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 12 | | | 11 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.10 | 1.10 | 1.10 | 1.14 | 1.14 | 1.14 | 1.25 | 1.25 | 1.25 | 1.19 | 1.19 | 1.19 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | 20 | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | 20 | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | pm+ov | pm+pt | NA | | pm+pt | NA | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Protected Phases | | 4 | | | 4 | 5 | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 4 | | | 4 | | 4 | 6 | 6 | | 2 | | |
| Detector Phase | 4 | 4 | | 4 | 4 | 5 | 1 | 6 | | 5 | 2 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 6.0 | 6.0 | | 6.0 | 6.0 | 6.0 | 6.0 | 10.0 | | 6.0 | 10.0 | |
| Minimum Split (s) | 26.0 | 26.0 | | 26.0 | 26.0 | 11.0 | 11.0 | 24.0 | | 11.0 | 24.0 | |
| Total Split (s) | 35.0 | 35.0 | | 35.0 | 35.0 | 25.0 | 15.0 | 56.0 | | 25.0 | 46.0 | |
| Total Split (%) | 30.2% | 30.2% | | 30.2% | 30.2% | 21.6% | 12.9% | 48.3% | | 21.6% | 39.7% | |
| Maximum Green (s) | 30.0 | 30.0 | | 30.0 | 30.0 | 20.0 | 10.0 | 50.0 | | 20.0 | 40.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 3.0 | | 2.0 | 3.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | 5.0 | 5.0 | 6.0 | | 5.0 | 6.0 | |
| Lead/Lag | | | | | | Lead | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | None | None | | None | None | None | None | Ped | | None | Max | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | | 7.0 | | | | |
| Flash Dont Walk (s) | 14.0 | 14.0 | | 14.0 | 14.0 | | | 9.0 | | | | |
| Pedestrian Calls (#/hr) | 10 | 10 | | 10 | 10 | | | 10 | | | | |
| Act Effct Green (s) | | 9.1 | | | 9.1 | 22.1 | | 54.2 | | 73.3 | 75.1 | |
| Actuated g/C Ratio | | 0.10 | | | 0.10 | 0.25 | | 0.62 | | 0.84 | 0.86 | |
| v/c Ratio | | 0.26 | | | 0.13 | 0.31 | | 0.76 | | 0.57 | 0.29 | |
| Control Delay | | 41.8 | | | 39.2 | 17.7 | | 19.8 | | 26.1 | 3.2 | |
| Queue Delay | | 0.0 | | | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | |
| Total Delay | | 41.8 | | | 39.2 | 17.7 | | 19.8 | | 26.1 | 3.2 | |
| LOS | | D | | | D | B | | B | | C | A | |
| Approach Delay | | 41.8 | | | 22.2 | | | 19.8 | | | 5.9 | |
| Approach LOS | | D | | | C | | | B | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 116 | | | |
| Actuated Cycle Length: 87.5 | | | |
| Natural Cycle: 90 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 0.76 | | | |
| Intersection Signal Delay: 15.3 | | Intersection LOS: B | |
| Intersection Capacity Utilization 68.3% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 2: Summer Street & FedEx/Dedicated Freight Corridor

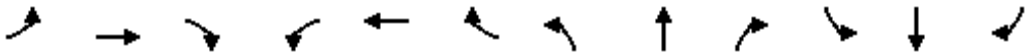




| Lane Group | EBT | WBT | WBR | NBT | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 35 | 17 | 64 | 1431 | 102 | 751 |
| v/c Ratio | 0.26 | 0.13 | 0.31 | 0.76 | 0.57 | 0.29 |
| Control Delay | 41.8 | 39.2 | 17.7 | 19.8 | 26.1 | 3.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 41.8 | 39.2 | 17.7 | 19.8 | 26.1 | 3.2 |
| Queue Length 50th (ft) | 18 | 9 | 14 | 300 | 14 | 43 |
| Queue Length 95th (ft) | 49 | 29 | 44 | #684 | 84 | 124 |
| Internal Link Dist (ft) | 123 | 272 | | 595 | | 1443 |
| Turn Bay Length (ft) | | | 60 | | 120 | |
| Base Capacity (vph) | 461 | 438 | 263 | 1875 | 237 | 2565 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.08 | 0.04 | 0.24 | 0.76 | 0.43 | 0.29 |

Intersection Summary

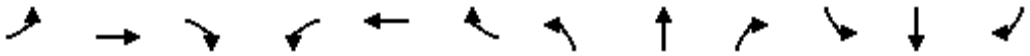
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 32 | 0 | 0 | 16 | 0 | 59 | 0 | 1295 | 21 | 94 | 691 | 0 |
| Future Volume (vph) | 32 | 0 | 0 | 16 | 0 | 59 | 0 | 1295 | 21 | 94 | 691 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 13 | 13 | 13 | 12 | 12 | 12 | 10 | 10 | 10 | 11 | 11 | 11 |
| Total Lost time (s) | | 5.0 | | | 5.0 | 5.0 | | 6.0 | | 5.0 | 6.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | 1.00 | | 0.95 | | 1.00 | 0.95 | |
| Frt | | 1.00 | | | 1.00 | 0.85 | | 1.00 | | 1.00 | 1.00 | |
| Flt Protected | | 0.95 | | | 0.95 | 1.00 | | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 1679 | | | 1624 | 727 | | 3025 | | 785 | 2991 | |
| Flt Permitted | | 0.75 | | | 0.73 | 1.00 | | 1.00 | | 0.11 | 1.00 | |
| Satd. Flow (perm) | | 1319 | | | 1256 | 727 | | 3025 | | 90 | 2991 | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 35 | 0 | 0 | 17 | 0 | 64 | 0 | 1408 | 23 | 102 | 751 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 22 | 0 | 1 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 35 | 0 | 0 | 17 | 42 | 0 | 1430 | 0 | 102 | 751 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 100% | 0% | 0% | 0% | 100% | 5% | 0% |
| Turn Type | Perm | NA | | Perm | NA | pm+ov | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | | 4 | | | 4 | 5 | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 4 | | | 4 | | 4 | 6 | 6 | | 2 | | |
| Actuated Green, G (s) | | 6.3 | | | 6.3 | 19.3 | | 54.3 | | 72.3 | 72.3 | |
| Effective Green, g (s) | | 6.3 | | | 6.3 | 19.3 | | 54.3 | | 72.3 | 72.3 | |
| Actuated g/C Ratio | | 0.07 | | | 0.07 | 0.22 | | 0.61 | | 0.81 | 0.81 | |
| Clearance Time (s) | | 5.0 | | | 5.0 | 5.0 | | 6.0 | | 5.0 | 6.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | 2.0 | | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | | 92 | | | 88 | 197 | | 1833 | | 173 | 2413 | |
| v/s Ratio Prot | | | | | | 0.03 | | c0.47 | | c0.09 | 0.25 | |
| v/s Ratio Perm | | c0.03 | | | 0.01 | 0.03 | | | | 0.39 | | |
| v/c Ratio | | 0.38 | | | 0.19 | 0.21 | | 0.78 | | 0.59 | 0.31 | |
| Uniform Delay, d1 | | 39.8 | | | 39.3 | 28.9 | | 13.2 | | 12.8 | 2.2 | |
| Progression Factor | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 1.0 | | | 0.4 | 0.2 | | 2.0 | | 3.3 | 0.3 | |
| Delay (s) | | 40.7 | | | 39.6 | 29.1 | | 15.2 | | 16.1 | 2.6 | |
| Level of Service | | D | | | D | C | | B | | B | A | |
| Approach Delay (s) | | 40.7 | | | 31.3 | | | 15.2 | | | 4.2 | |
| Approach LOS | | D | | | C | | | B | | | A | |

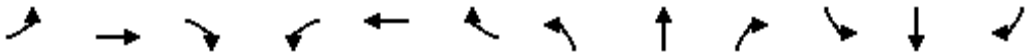
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 12.2 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.71 | | |
| Actuated Cycle Length (s) | 89.6 | Sum of lost time (s) | 16.0 |
| Intersection Capacity Utilization | 68.3% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 16 | 0 | 11 | 40 | 0 | 98 | 32 | 1122 | 51 | 124 | 567 | 48 |
| Future Volume (vph) | 16 | 0 | 11 | 40 | 0 | 98 | 32 | 1122 | 51 | 124 | 567 | 48 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 14 | 12 | 12 | 12 | 12 | 12 | 10 | 10 | 12 | 12 | 10 | 10 |
| Storage Length (ft) | 0 | | 0 | 0 | | 100 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.945 | | | | 0.850 | | 0.993 | | | 0.990 | |
| Flt Protected | | 0.971 | | | 0.950 | | | 0.999 | | | 0.992 | |
| Satd. Flow (prot) | 0 | 1342 | 0 | 0 | 1624 | 1454 | 0 | 2978 | 0 | 0 | 2911 | 0 |
| Flt Permitted | | 0.971 | | | 0.950 | | | 0.999 | | | 0.992 | |
| Satd. Flow (perm) | 0 | 1342 | 0 | 0 | 1624 | 1454 | 0 | 2978 | 0 | 0 | 2911 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 362 | | | 235 | | | 355 | | | 675 | |
| Travel Time (s) | | 8.2 | | | 5.3 | | | 8.1 | | | 15.3 | |
| Confl. Peds. (#/hr) | | | | | | | 126 | | | | | 126 |
| Confl. Bikes (#/hr) | | | | | | | | | | | | 4 |
| Peak Hour Factor | 0.64 | 0.92 | 0.64 | 0.92 | 0.92 | 0.92 | 0.97 | 0.97 | 0.92 | 0.92 | 0.89 | 0.89 |
| Heavy Vehicles (%) | 8% | 0% | 30% | 0% | 0% | 0% | 3% | 1% | 0% | 0% | 3% | 0% |
| Parking (#/hr) | | | | | | | 1 | | | | | 1 |
| Adj. Flow (vph) | 25 | 0 | 17 | 43 | 0 | 107 | 33 | 1157 | 55 | 135 | 637 | 54 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 42 | 0 | 0 | 43 | 107 | 0 | 1245 | 0 | 0 | 826 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 10 | | | 10 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.05 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.25 | 1.25 | 1.14 | 1.14 | 1.25 | 1.25 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |

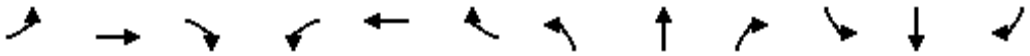
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 79.2% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 16 | 0 | 11 | 40 | 0 | 98 | 32 | 1122 | 51 | 124 | 567 | 48 |
| Future Volume (Veh/h) | 16 | 0 | 11 | 40 | 0 | 98 | 32 | 1122 | 51 | 124 | 567 | 48 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.64 | 0.92 | 0.64 | 0.92 | 0.92 | 0.92 | 0.97 | 0.97 | 0.92 | 0.92 | 0.89 | 0.89 |
| Hourly flow rate (vph) | 25 | 0 | 17 | 43 | 0 | 107 | 33 | 1157 | 55 | 135 | 637 | 54 |
| Pedestrians | | 126 | | | | | | | | | | |
| Lane Width (ft) | | 12.0 | | | | | | | | | | |
| Walking Speed (ft/s) | | 4.0 | | | | | | | | | | |
| Percent Blockage | | 10 | | | | | | | | | | |
| Right turn flare (veh) | | | | | | 4 | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | 355 | | | 675 | |
| pX, platoon unblocked | 0.80 | 0.80 | 0.98 | 0.80 | 0.80 | 0.79 | 0.98 | | | 0.79 | | |
| vC, conflicting volume | 1704 | 2338 | 472 | 1856 | 2338 | 606 | 817 | | | 1212 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1278 | 2074 | 429 | 1468 | 2073 | 0 | 780 | | | 729 | | |
| tC, single (s) | 7.7 | 6.5 | 7.5 | 7.5 | 6.5 | 6.9 | 4.2 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.6 | 4.0 | 3.6 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 55 | 100 | 96 | 18 | 100 | 88 | 95 | | | 81 | | |
| cM capacity (veh/h) | 55 | 30 | 443 | 53 | 30 | 859 | 727 | | | 696 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | SB 1 | SB 2 |
|---|---|---|---|---|---|---|
| Volume Total | 42 | 150 | 612 | 634 | 454 | 372 |
| Volume Left | 25 | 43 | 33 | 0 | 135 | 0 |
| Volume Right | 17 | 107 | 0 | 55 | 0 | 54 |
| cSH | 86 | 184 | 727 | 1700 | 696 | 1700 |
| Volume to Capacity | 0.49 | 0.82 | 0.05 | 0.37 | 0.19 | 0.22 |
| Queue Length 95th (ft) | 52 | 142 | 4 | 0 | 18 | 0 |
| Control Delay (s) | 81.9 | 63.2 | 1.2 | 0.0 | 5.3 | 0.0 |
| Lane LOS | F | F | A | | A | |
| Approach Delay (s) | 81.9 | 63.2 | 0.6 | | 2.9 | |
| Approach LOS | F | F | | | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 7.1 | | | |
| Intersection Capacity Utilization | 79.2% | ICU Level of Service | D | |
| Analysis Period (min) | 15 | | | |



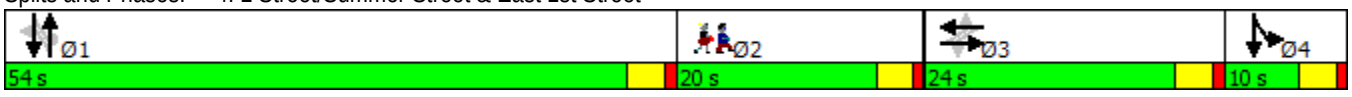
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 54 | 64 | 43 | 28 | 108 | 335 | 43 | 801 | 55 | 127 | 419 | 97 |
| Future Volume (vph) | 54 | 64 | 43 | 28 | 108 | 335 | 43 | 801 | 55 | 127 | 419 | 97 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 15 | 12 | 12 | 16 | 12 | 12 | 9 | 12 | 12 | 12 | 12 |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 100 | | 0 | 100 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Ped Bike Factor | | 0.98 | | | 0.97 | | | 0.99 | | | 0.98 | |
| Frt | | 0.964 | | | 0.904 | | | 0.991 | | | 0.977 | |
| Flt Protected | | 0.984 | | | 0.997 | | | 0.998 | | | 0.990 | |
| Satd. Flow (prot) | 0 | 1618 | 0 | 0 | 1665 | 0 | 0 | 2762 | 0 | 0 | 2907 | 0 |
| Flt Permitted | | 0.390 | | | 0.968 | | | 0.884 | | | 0.577 | |
| Satd. Flow (perm) | 0 | 640 | 0 | 0 | 1614 | 0 | 0 | 2442 | 0 | 0 | 1691 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 15 | | | 101 | | | 8 | | | 28 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 540 | | | 576 | | | 340 | | | 355 | |
| Travel Time (s) | | 12.3 | | | 13.1 | | | 7.7 | | | 8.1 | |
| Confl. Peds. (#/hr) | 16 | | 17 | 17 | | 16 | 104 | | 44 | 44 | | 104 |
| Confl. Bikes (#/hr) | | | 2 | | | 2 | | | 11 | | | 2 |
| Peak Hour Factor | 0.84 | 0.84 | 0.84 | 0.83 | 0.83 | 0.83 | 0.94 | 0.94 | 0.94 | 0.91 | 0.91 | 0.91 |
| Heavy Vehicles (%) | 12% | 6% | 7% | 17% | 1% | 1% | 2% | 2% | 38% | 15% | 3% | 8% |
| Adj. Flow (vph) | 64 | 76 | 51 | 34 | 130 | 404 | 46 | 852 | 59 | 140 | 460 | 107 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 191 | 0 | 0 | 568 | 0 | 0 | 957 | 0 | 0 | 707 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.01 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 1.30 | 1.14 | 1.14 | 1.14 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |

| Lane Group | Ø2 |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | |
| Future Volume (vph) | |
| Ideal Flow (vphpl) | |
| Lane Width (ft) | |
| Storage Length (ft) | |
| Storage Lanes | |
| Taper Length (ft) | |
| Lane Util. Factor | |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Right Turn on Red | |
| Satd. Flow (RTOR) | |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | |
| Heavy Vehicles (%) | |
| Adj. Flow (vph) | |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | |
| Enter Blocked Intersection | |
| Lane Alignment | |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | |
| Turning Speed (mph) | |
| Number of Detectors | |
| Detector Template | |
| Leading Detector (ft) | |
| Trailing Detector (ft) | |
| Detector 1 Position(ft) | |
| Detector 1 Size(ft) | |
| Detector 1 Type | |
| Detector 1 Channel | |
| Detector 1 Extend (s) | |
| Detector 1 Queue (s) | |
| Detector 1 Delay (s) | |
| Detector 2 Position(ft) | |
| Detector 2 Size(ft) | |
| Detector 2 Type | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | D.P+P | NA | |
| Protected Phases | | 3 | | | 3 | | | 1 | | 4 | 1 4 | |
| Permitted Phases | 3 | | | 3 | | | 1 | | | 1 | | |
| Detector Phase | 3 | 3 | | 3 | 3 | | 1 | 1 | | 4 | 1 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 10.0 | 10.0 | | 5.0 | | |
| Minimum Split (s) | 11.0 | 11.0 | | 11.0 | 11.0 | | 14.0 | 14.0 | | 9.0 | | |
| Total Split (s) | 24.0 | 24.0 | | 24.0 | 24.0 | | 54.0 | 54.0 | | 10.0 | | |
| Total Split (%) | 22.2% | 22.2% | | 22.2% | 22.2% | | 50.0% | 50.0% | | 9.3% | | |
| Maximum Green (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 50.0 | 50.0 | | 6.0 | | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | |
| Total Lost Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | | |
| Lead/Lag | Lead | Lead | | Lead | Lead | | Lead | Lead | | Lag | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 1.0 | | |
| Recall Mode | None | None | | None | None | | Max | Max | | None | | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 20.2 | | | 20.2 | | | 50.5 | | | 56.6 | |
| Actuated g/C Ratio | | 0.21 | | | 0.21 | | | 0.53 | | | 0.59 | |
| v/c Ratio | | 1.31 | | | 1.36 | | | 0.74 | | | 0.65 | |
| Control Delay | | 210.3 | | | 202.5 | | | 24.0 | | | 15.7 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 210.3 | | | 202.5 | | | 24.0 | | | 15.7 | |
| LOS | | F | | | F | | | C | | | B | |
| Approach Delay | | 210.3 | | | 202.5 | | | 24.0 | | | 15.7 | |
| Approach LOS | | F | | | F | | | C | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 108 | | | |
| Actuated Cycle Length: 96 | | | |
| Natural Cycle: 110 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 1.36 | | | |
| Intersection Signal Delay: 78.1 | | Intersection LOS: E | |
| Intersection Capacity Utilization 92.4% | | ICU Level of Service F | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 4: L Street/Summer Street & East 1st Street



| Lane Group | Ø2 |
|---|---|
| Detector 2 Channel | |
| Detector 2 Extend (s) | |
| Turn Type | |
| Protected Phases | 2 |
| Permitted Phases | |
| Detector Phase | |
| Switch Phase | |
| Minimum Initial (s) | 4.0 |
| Minimum Split (s) | 20.0 |
| Total Split (s) | 20.0 |
| Total Split (%) | 19% |
| Maximum Green (s) | 16.0 |
| Yellow Time (s) | 3.0 |
| All-Red Time (s) | 1.0 |
| Lost Time Adjust (s) | |
| Total Lost Time (s) | |
| Lead/Lag | Lag |
| Lead-Lag Optimize? | |
| Vehicle Extension (s) | 3.0 |
| Recall Mode | None |
| Walk Time (s) | 7.0 |
| Flash Dont Walk (s) | 9.0 |
| Pedestrian Calls (#/hr) | 22 |
| Act Effct Green (s) | |
| Actuated g/C Ratio | |
| v/c Ratio | |
| Control Delay | |
| Queue Delay | |
| Total Delay | |
| LOS | |
| Approach Delay | |
| Approach LOS | |

| Intersection Summary |
|---|

| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 191 | 568 | 957 | 707 |
| v/c Ratio | 1.31 | 1.36 | 0.74 | 0.65 |
| Control Delay | 210.3 | 202.5 | 24.0 | 15.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 210.3 | 202.5 | 24.0 | 15.7 |
| Queue Length 50th (ft) | ~125 | ~359 | 182 | 71 |
| Queue Length 95th (ft) | #290 | #623 | 394 | 182 |
| Internal Link Dist (ft) | 460 | 496 | 260 | 275 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 146 | 419 | 1288 | 1084 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 1.31 | 1.36 | 0.74 | 0.65 |

Intersection Summary

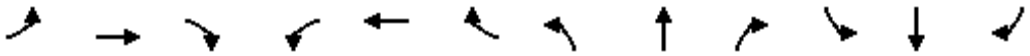
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 54 | 64 | 43 | 28 | 108 | 335 | 43 | 801 | 55 | 127 | 419 | 97 |
| Future Volume (vph) | 54 | 64 | 43 | 28 | 108 | 335 | 43 | 801 | 55 | 127 | 419 | 97 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 15 | 12 | 12 | 16 | 12 | 12 | 9 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | | | 0.95 | | | 0.95 | |
| Frpb, ped/bikes | | 0.98 | | | 0.97 | | | 1.00 | | | 0.98 | |
| Flpb, ped/bikes | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Frt | | 0.96 | | | 0.90 | | | 0.99 | | | 0.98 | |
| Flt Protected | | 0.98 | | | 1.00 | | | 1.00 | | | 0.99 | |
| Satd. Flow (prot) | | 1616 | | | 1666 | | | 2756 | | | 2910 | |
| Flt Permitted | | 0.39 | | | 0.97 | | | 0.88 | | | 0.58 | |
| Satd. Flow (perm) | | 641 | | | 1617 | | | 2442 | | | 1697 | |
| Peak-hour factor, PHF | 0.84 | 0.84 | 0.84 | 0.83 | 0.83 | 0.83 | 0.94 | 0.94 | 0.94 | 0.91 | 0.91 | 0.91 |
| Adj. Flow (vph) | 64 | 76 | 51 | 34 | 130 | 404 | 46 | 852 | 59 | 140 | 460 | 107 |
| RTOR Reduction (vph) | 0 | 12 | 0 | 0 | 80 | 0 | 0 | 4 | 0 | 0 | 12 | 0 |
| Lane Group Flow (vph) | 0 | 179 | 0 | 0 | 488 | 0 | 0 | 953 | 0 | 0 | 695 | 0 |
| Confl. Peds. (#/hr) | 16 | | 17 | 17 | | 16 | 104 | | 44 | 44 | | 104 |
| Confl. Bikes (#/hr) | | | 2 | | | 2 | | | 11 | | | 2 |
| Heavy Vehicles (%) | 12% | 6% | 7% | 17% | 1% | 1% | 2% | 2% | 38% | 15% | 3% | 8% |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | D.P+P | NA | |
| Protected Phases | | 3 | | | 3 | | | 1 | | 4 | 1 4 | |
| Permitted Phases | 3 | | | 3 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 20.2 | | | 20.2 | | | 50.5 | | | 56.6 | |
| Effective Green, g (s) | | 20.2 | | | 20.2 | | | 50.5 | | | 56.6 | |
| Actuated g/C Ratio | | 0.21 | | | 0.21 | | | 0.51 | | | 0.57 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | | | 3.0 | | | | |
| Lane Grp Cap (vph) | | 131 | | | 331 | | | 1251 | | | 1050 | |
| v/s Ratio Prot | | | | | | | | | | | c0.04 | |
| v/s Ratio Perm | | 0.28 | | | c0.30 | | | c0.39 | | | 0.34 | |
| v/c Ratio | | 1.37 | | | 1.47 | | | 0.76 | | | 0.66 | |
| Uniform Delay, d1 | | 39.1 | | | 39.1 | | | 19.2 | | | 14.4 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 206.1 | | | 228.8 | | | 4.4 | | | 1.2 | |
| Delay (s) | | 245.3 | | | 268.0 | | | 23.6 | | | 15.6 | |
| Level of Service | | F | | | F | | | C | | | B | |
| Approach Delay (s) | | 245.3 | | | 268.0 | | | 23.6 | | | 15.6 | |
| Approach LOS | | F | | | F | | | C | | | B | |

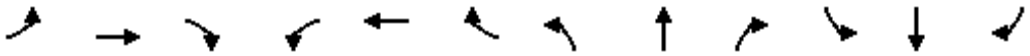
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 96.0 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 0.88 | | |
| Actuated Cycle Length (s) | 98.5 | Sum of lost time (s) | 16.0 |
| Intersection Capacity Utilization | 92.4% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 16 | 5 | 21 | 11 | 16 | 62 | 43 | 799 | 32 | 11 | 469 | 21 |
| Future Volume (vph) | 16 | 5 | 21 | 11 | 16 | 62 | 43 | 799 | 32 | 11 | 469 | 21 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 16 | 12 | 12 | 16 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.932 | | | 0.906 | | | 0.995 | | | 0.994 | |
| Flt Protected | | 0.981 | | | 0.994 | | | 0.998 | | | 0.999 | |
| Satd. Flow (prot) | 0 | 1459 | 0 | 0 | 1402 | 0 | 0 | 1838 | 0 | 0 | 1851 | 0 |
| Flt Permitted | | 0.981 | | | 0.994 | | | 0.998 | | | 0.999 | |
| Satd. Flow (perm) | 0 | 1459 | 0 | 0 | 1402 | 0 | 0 | 1838 | 0 | 0 | 1851 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 429 | | | 453 | | | 298 | | | 340 | |
| Travel Time (s) | | 9.8 | | | 10.3 | | | 6.8 | | | 7.7 | |
| Confl. Peds. (#/hr) | 15 | | 20 | 20 | | 15 | 90 | | 41 | 41 | | 90 |
| Confl. Bikes (#/hr) | | | | | | 1 | | | 9 | | | |
| Peak Hour Factor | 0.57 | 0.57 | 0.57 | 0.88 | 0.88 | 0.88 | 0.94 | 0.94 | 0.94 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 10% | 7% | 0% | 3% | 4% | 25% | 0% | 4% | 5% |
| Adj. Flow (vph) | 28 | 9 | 37 | 13 | 18 | 70 | 46 | 850 | 34 | 11 | 489 | 22 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 74 | 0 | 0 | 101 | 0 | 0 | 930 | 0 | 0 | 522 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.25 | 1.14 | 1.14 | 1.25 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 0.97 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 90.0% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 16 | 5 | 21 | 11 | 16 | 62 | 43 | 799 | 32 | 11 | 469 | 21 |
| Future Volume (Veh/h) | 16 | 5 | 21 | 11 | 16 | 62 | 43 | 799 | 32 | 11 | 469 | 21 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.57 | 0.57 | 0.57 | 0.88 | 0.88 | 0.88 | 0.94 | 0.94 | 0.94 | 0.96 | 0.96 | 0.96 |
| Hourly flow rate (vph) | 28 | 9 | 37 | 13 | 18 | 70 | 46 | 850 | 34 | 11 | 489 | 22 |
| Pedestrians | | 90 | | | 41 | | | 20 | | | 15 | |
| Lane Width (ft) | | 10.0 | | | 10.0 | | | 16.0 | | | 16.0 | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Percent Blockage | | 6 | | | 3 | | | 2 | | | 2 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | 602 | | | 340 | |
| pX, platoon unblocked | 0.81 | 0.81 | 0.86 | 0.81 | 0.81 | 0.74 | 0.86 | | | 0.74 | | |
| vC, conflicting volume | 1665 | 1629 | 610 | 1584 | 1623 | 923 | 601 | | | 925 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1318 | 1274 | 466 | 1218 | 1266 | 723 | 456 | | | 726 | | |
| tC, single (s) | *4.0 | *4.0 | *5.0 | *4.0 | *4.0 | *4.0 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.6 | 4.1 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 88 | 97 | 93 | 95 | 94 | 85 | 95 | | | 98 | | |
| cM capacity (veh/h) | 227 | 282 | 554 | 278 | 281 | 474 | 888 | | | 640 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 74 | 101 | 930 | 522 |
| Volume Left | 28 | 13 | 46 | 11 |
| Volume Right | 37 | 70 | 34 | 22 |
| cSH | 333 | 391 | 888 | 640 |
| Volume to Capacity | 0.22 | 0.26 | 0.05 | 0.02 |
| Queue Length 95th (ft) | 21 | 25 | 4 | 1 |
| Control Delay (s) | 18.9 | 17.4 | 1.4 | 0.5 |
| Lane LOS | C | C | A | A |
| Approach Delay (s) | 18.9 | 17.4 | 1.4 | 0.5 |
| Approach LOS | C | C | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.9 | | |
| Intersection Capacity Utilization | 90.0% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

* User Entered Value



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBU | NBL | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 17 | 0 | 21 | 5 | 16 | 32 | 5 | 21 | 798 | 32 | 16 | 457 |
| Future Volume (vph) | 17 | 0 | 21 | 5 | 16 | 32 | 5 | 21 | 798 | 32 | 16 | 457 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 12 | 16 | 12 | 12 | 16 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.925 | | | 0.918 | | | | 0.995 | | | 0.994 |
| Flt Protected | | 0.978 | | | 0.996 | | | | 0.999 | | | 0.998 |
| Satd. Flow (prot) | 0 | 1258 | 0 | 0 | 1313 | 0 | 0 | 0 | 1855 | 0 | 0 | 1834 |
| Flt Permitted | | 0.978 | | | 0.996 | | | | 0.999 | | | 0.998 |
| Satd. Flow (perm) | 0 | 1258 | 0 | 0 | 1313 | 0 | 0 | 0 | 1855 | 0 | 0 | 1834 |
| Link Speed (mph) | | 30 | | | 30 | | | | 30 | | | 30 |
| Link Distance (ft) | | 638 | | | 716 | | | | 304 | | | 298 |
| Travel Time (s) | | 14.5 | | | 16.3 | | | | 6.9 | | | 6.8 |
| Confl. Peds. (#/hr) | 22 | | 31 | 31 | | 22 | | 75 | | 46 | 46 | |
| Confl. Bikes (#/hr) | | | | | | | | | | 9 | | |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.67 | 0.67 | 0.67 | 0.92 | 0.94 | 0.94 | 0.94 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 0% | 0% | 6% | 0% | 0% | 0% | 0% | 5% | 4% | 0% | 6% | 5% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | | | | | |
| Adj. Flow (vph) | 20 | 0 | 25 | 7 | 24 | 48 | 5 | 22 | 849 | 34 | 17 | 491 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 45 | 0 | 0 | 79 | 0 | 0 | 0 | 910 | 0 | 0 | 532 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | R NA | Left | Left | Right | Left | Left |
| Median Width(ft) | | 0 | | | 0 | | | | 0 | | | 0 |
| Link Offset(ft) | | 0 | | | 0 | | | | 0 | | | 0 |
| Crosswalk Width(ft) | | 16 | | | 16 | | | | 16 | | | 16 |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 0.97 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 9 | 15 | | 9 | 15 | |
| Sign Control | | Stop | | | Stop | | | | Free | | | Free |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 79.6% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |



| Lane Group | SBR |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | 22 |
| Future Volume (vph) | 22 |
| Ideal Flow (vphpl) | 1900 |
| Lane Width (ft) | 12 |
| Lane Util. Factor | 1.00 |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | 0 |
| Flt Permitted | |
| Satd. Flow (perm) | 0 |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | 75 |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | 0.93 |
| Heavy Vehicles (%) | 0% |
| Parking (#/hr) | |
| Adj. Flow (vph) | 24 |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | 0 |
| Enter Blocked Intersection | No |
| Lane Alignment | Right |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | 1.14 |
| Turning Speed (mph) | 9 |
| Sign Control | |

| Intersection Summary |
|---|



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBU | NBL | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 17 | 0 | 21 | 5 | 16 | 32 | 5 | 21 | 798 | 32 | 16 | 457 |
| Future Volume (Veh/h) | 17 | 0 | 21 | 5 | 16 | 32 | 5 | 21 | 798 | 32 | 16 | 457 |
| Sign Control | | Stop | | | Stop | | | | Free | | | Free |
| Grade | | 0% | | | 0% | | | | 0% | | | 0% |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.67 | 0.67 | 0.67 | 0.92 | 0.94 | 0.94 | 0.94 | 0.93 | 0.93 |
| Hourly flow rate (vph) | 20 | 0 | 25 | 7 | 24 | 48 | 0 | 22 | 849 | 34 | 17 | 491 |
| Pedestrians | | 75 | | | 46 | | | | 31 | | | 22 |
| Lane Width (ft) | | 10.0 | | | 10.0 | | | | 16.0 | | | 16.0 |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | | 4.0 | | | 4.0 |
| Percent Blockage | | 5 | | | 3 | | | | 3 | | | 2 |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | | None | | | None |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | 304 | | | 638 |
| pX, platoon unblocked | 0.82 | 0.82 | 0.87 | 0.82 | 0.82 | 0.75 | 0.00 | 0.87 | | | 0.75 | |
| vC, conflicting volume | 1604 | 1585 | 609 | 1549 | 1580 | 934 | 0 | 590 | | | 929 | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1279 | 1256 | 480 | 1212 | 1250 | 748 | 0 | 459 | | | 742 | |
| tC, single (s) | *4.0 | 6.5 | *5.0 | *4.0 | *4.0 | *4.0 | 0.0 | 4.1 | | | 4.2 | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.4 | 3.5 | 4.0 | 3.3 | 0.0 | 2.2 | | | 2.3 | |
| p0 queue free % | 92 | 100 | 95 | 98 | 92 | 90 | 0 | 98 | | | 97 | |
| cM capacity (veh/h) | 248 | 123 | 546 | 299 | 295 | 467 | 0 | 900 | | | 618 | |

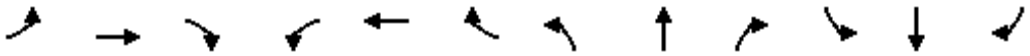
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 45 | 79 | 905 | 532 |
| Volume Left | 20 | 7 | 22 | 17 |
| Volume Right | 25 | 48 | 34 | 24 |
| cSH | 356 | 380 | 900 | 618 |
| Volume to Capacity | 0.13 | 0.21 | 0.02 | 0.03 |
| Queue Length 95th (ft) | 11 | 19 | 2 | 2 |
| Control Delay (s) | 16.6 | 16.9 | 0.7 | 0.8 |
| Lane LOS | C | C | A | A |
| Approach Delay (s) | 16.6 | 16.9 | 0.7 | 0.8 |
| Approach LOS | C | C | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 2.0 | | | |
| Intersection Capacity Utilization | 79.6% | ICU Level of Service | D | |
| Analysis Period (min) | 15 | | | |

* User Entered Value



| Movement | SBR |
|---|---|
| Lane Configurations | |
| Traffic Volume (veh/h) | 22 |
| Future Volume (Veh/h) | 22 |
| Sign Control | |
| Grade | |
| Peak Hour Factor | 0.93 |
| Hourly flow rate (vph) | 24 |
| Pedestrians | |
| Lane Width (ft) | |
| Walking Speed (ft/s) | |
| Percent Blockage | |
| Right turn flare (veh) | |
| Median type | |
| Median storage veh) | |
| Upstream signal (ft) | |
| pX, platoon unblocked | |
| vC, conflicting volume | |
| vC1, stage 1 conf vol | |
| vC2, stage 2 conf vol | |
| vCu, unblocked vol | |
| tC, single (s) | |
| tC, 2 stage (s) | |
| tF (s) | |
| p0 queue free % | |
| cM capacity (veh/h) | |
| Direction, Lane # | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 90 | 101 | 48 | 32 | 155 | 72 | 69 | 701 | 11 | 54 | 327 | 97 |
| Future Volume (vph) | 90 | 101 | 48 | 32 | 155 | 72 | 69 | 701 | 11 | 54 | 327 | 97 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 11 | 12 | 12 | 16 | 12 | 10 | 10 | 10 | 10 | 10 | 10 |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 0 | | 250 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 0 | | 1 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 0.95 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Ped Bike Factor | | 0.93 | | | 0.91 | | | 1.00 | | | 0.97 | |
| Frt | | 0.970 | | | 0.963 | | | 0.998 | | | 0.970 | |
| Flt Protected | | 0.981 | | | 0.994 | | | 0.996 | | | 0.994 | |
| Satd. Flow (prot) | 0 | 2510 | 0 | 0 | 1361 | 0 | 0 | 2827 | 0 | 0 | 2604 | 0 |
| Flt Permitted | | 0.576 | | | 0.927 | | | 0.768 | | | 0.655 | |
| Satd. Flow (perm) | 0 | 1416 | 0 | 0 | 1248 | 0 | 0 | 2174 | 0 | 0 | 1711 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 642 | | | 138 | | | 618 | | | 304 | |
| Travel Time (s) | | 14.6 | | | 3.1 | | | 14.0 | | | 6.9 | |
| Confl. Peds. (#/hr) | 104 | | 84 | 84 | | 104 | 117 | | 118 | 118 | | 117 |
| Confl. Bikes (#/hr) | | | | | | 3 | | | 9 | | | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.97 | 0.97 | 0.97 | 0.95 | 0.95 | 0.95 | 0.85 | 0.85 | 0.85 |
| Heavy Vehicles (%) | 16% | 7% | 0% | 6% | 10% | 25% | 3% | 1% | 0% | 2% | 3% | 10% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Adj. Flow (vph) | 100 | 112 | 53 | 33 | 160 | 74 | 73 | 738 | 12 | 64 | 385 | 114 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 265 | 0 | 0 | 267 | 0 | 0 | 823 | 0 | 0 | 563 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.27 | 1.14 | 1.14 | 1.12 | 1.14 | 1.25 | 1.33 | 1.25 | 1.25 | 1.33 | 1.25 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |

| Lane Group | Ø2 |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | |
| Future Volume (vph) | |
| Ideal Flow (vphpl) | |
| Lane Width (ft) | |
| Storage Length (ft) | |
| Storage Lanes | |
| Taper Length (ft) | |
| Lane Util. Factor | |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Right Turn on Red | |
| Satd. Flow (RTOR) | |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | |
| Heavy Vehicles (%) | |
| Parking (#/hr) | |
| Adj. Flow (vph) | |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | |
| Enter Blocked Intersection | |
| Lane Alignment | |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | |
| Turning Speed (mph) | |
| Number of Detectors | |
| Detector Template | |
| Leading Detector (ft) | |
| Trailing Detector (ft) | |
| Detector 1 Position(ft) | |
| Detector 1 Size(ft) | |
| Detector 1 Type | |
| Detector 1 Channel | |
| Detector 1 Extend (s) | |
| Detector 1 Queue (s) | |
| Detector 1 Delay (s) | |
| Detector 2 Position(ft) | |
| Detector 2 Size(ft) | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | D.P+P | NA | | Perm | NA | | D.P+P | NA | | Perm | NA | |
| Protected Phases | 3 | 3 4 | | | 4 | | 5 | 1 5 | | | 1 | |
| Permitted Phases | 4 | | | 4 | | | 1 | | | 1 | | |
| Detector Phase | 3 | 3 4 | | 4 | 4 | | 5 | 1 5 | | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | | | 10.0 | 10.0 | | 6.0 | | | 30.0 | 30.0 | |
| Minimum Split (s) | 10.0 | | | 14.0 | 14.0 | | 10.0 | | | 34.0 | 34.0 | |
| Total Split (s) | 11.0 | | | 34.0 | 34.0 | | 19.0 | | | 54.0 | 54.0 | |
| Total Split (%) | 7.7% | | | 23.9% | 23.9% | | 13.4% | | | 38.0% | 38.0% | |
| Maximum Green (s) | 6.0 | | | 30.0 | 30.0 | | 15.0 | | | 50.0 | 50.0 | |
| Yellow Time (s) | 3.0 | | | 3.0 | 3.0 | | 3.0 | | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | | | 1.0 | 1.0 | | 1.0 | | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | | | | | 0.0 | | | | | | 0.0 | |
| Total Lost Time (s) | | | | | 4.0 | | | | | | 4.0 | |
| Lead/Lag | Lead | | | Lag | Lag | | | | | Lead | Lead | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | | | 2.0 | 2.0 | | 2.0 | | | 2.0 | 2.0 | |
| Recall Mode | Max | | | Max | Max | | Max | | | Max | Max | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 35.0 | | | 30.0 | | | 65.0 | | | 50.0 | |
| Actuated g/C Ratio | | 0.25 | | | 0.21 | | | 0.46 | | | 0.35 | |
| v/c Ratio | | 0.67 | | | 1.02 | | | 0.77 | | | 0.94 | |
| Control Delay | | 54.0 | | | 114.1 | | | 35.3 | | | 68.4 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 54.0 | | | 114.1 | | | 35.3 | | | 68.4 | |
| LOS | | D | | | F | | | D | | | E | |
| Approach Delay | | 54.0 | | | 114.1 | | | 35.3 | | | 68.4 | |
| Approach LOS | | D | | | F | | | D | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 142 | | | |
| Actuated Cycle Length: 142 | | | |
| Natural Cycle: 105 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 1.02 | | | |
| Intersection Signal Delay: 58.6 | | Intersection LOS: E | |
| Intersection Capacity Utilization 90.6% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |

Description: L Street is very wide and during peak hours vehicles form two lanes.

Splits and Phases: 7: L Street & E Broadway



| Lane Group | Ø2 |
|---|---|
| Detector 2 Type | |
| Detector 2 Channel | |
| Detector 2 Extend (s) | |
| Turn Type | |
| Protected Phases | 2 |
| Permitted Phases | |
| Detector Phase | |
| Switch Phase | |
| Minimum Initial (s) | 4.0 |
| Minimum Split (s) | 24.0 |
| Total Split (s) | 24.0 |
| Total Split (%) | 17% |
| Maximum Green (s) | 20.0 |
| Yellow Time (s) | 3.0 |
| All-Red Time (s) | 1.0 |
| Lost Time Adjust (s) | |
| Total Lost Time (s) | |
| Lead/Lag | Lag |
| Lead-Lag Optimize? | |
| Vehicle Extension (s) | 2.0 |
| Recall Mode | None |
| Walk Time (s) | 8.0 |
| Flash Dont Walk (s) | 12.0 |
| Pedestrian Calls (#/hr) | 121 |
| Act Effct Green (s) | |
| Actuated g/C Ratio | |
| v/c Ratio | |
| Control Delay | |
| Queue Delay | |
| Total Delay | |
| LOS | |
| Approach Delay | |
| Approach LOS | |

| Intersection Summary |
|---|

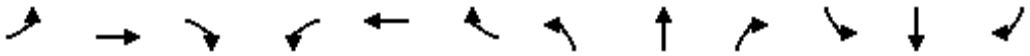
| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 265 | 267 | 823 | 563 |
| v/c Ratio | 0.67 | 1.02 | 0.77 | 0.94 |
| Control Delay | 54.0 | 114.1 | 35.3 | 68.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 54.0 | 114.1 | 35.3 | 68.4 |
| Queue Length 50th (ft) | 104 | ~254 | 284 | 263 |
| Queue Length 95th (ft) | 147 | #441 | 353 | #347 |
| Internal Link Dist (ft) | 562 | 58 | 538 | 224 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 395 | 263 | 1064 | 602 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.67 | 1.02 | 0.77 | 0.94 |

Intersection Summary

Description: L Street is very wide and during peak hours vehicles form two lanes.

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

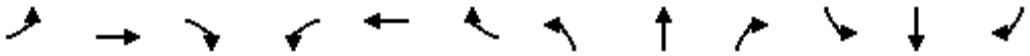


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 90 | 101 | 48 | 32 | 155 | 72 | 69 | 701 | 11 | 54 | 327 | 97 |
| Future Volume (vph) | 90 | 101 | 48 | 32 | 155 | 72 | 69 | 701 | 11 | 54 | 327 | 97 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 11 | 12 | 12 | 16 | 12 | 10 | 10 | 10 | 10 | 10 | 10 |
| Total Lost time (s) | | 5.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 0.95 | | | 1.00 | | | 0.95 | | | 0.95 | |
| Frpb, ped/bikes | | 0.96 | | | 0.93 | | | 1.00 | | | 0.98 | |
| Flpb, ped/bikes | | 0.98 | | | 0.98 | | | 1.00 | | | 1.00 | |
| Frt | | 0.97 | | | 0.96 | | | 1.00 | | | 0.97 | |
| Flt Protected | | 0.98 | | | 0.99 | | | 1.00 | | | 0.99 | |
| Satd. Flow (prot) | | 2456 | | | 1337 | | | 2819 | | | 2596 | |
| Flt Permitted | | 0.58 | | | 0.93 | | | 0.77 | | | 0.66 | |
| Satd. Flow (perm) | | 1442 | | | 1248 | | | 2175 | | | 1711 | |
| Peak-hour factor, PHF | 0.90 | 0.90 | 0.90 | 0.97 | 0.97 | 0.97 | 0.95 | 0.95 | 0.95 | 0.85 | 0.85 | 0.85 |
| Adj. Flow (vph) | 100 | 112 | 53 | 33 | 160 | 74 | 73 | 738 | 12 | 64 | 385 | 114 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 265 | 0 | 0 | 267 | 0 | 0 | 823 | 0 | 0 | 563 | 0 |
| Confl. Peds. (#/hr) | 104 | | 84 | 84 | | 104 | 117 | | 118 | 118 | | 117 |
| Confl. Bikes (#/hr) | | | | | | 3 | | | 9 | | | |
| Heavy Vehicles (%) | 16% | 7% | 0% | 6% | 10% | 25% | 3% | 1% | 0% | 2% | 3% | 10% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Turn Type | D.P+P | NA | | Perm | NA | | D.P+P | NA | | Perm | NA | |
| Protected Phases | 3 | 3 4 | | | 4 | | 5 | 1 5 | | | 1 | |
| Permitted Phases | 4 | | | 4 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 36.0 | | | 30.0 | | | 65.0 | | | 50.0 | |
| Effective Green, g (s) | | 36.0 | | | 30.0 | | | 65.0 | | | 50.0 | |
| Actuated g/C Ratio | | 0.25 | | | 0.21 | | | 0.46 | | | 0.35 | |
| Clearance Time (s) | | | | | 4.0 | | | | | | 4.0 | |
| Vehicle Extension (s) | | | | | 2.0 | | | | | | 2.0 | |
| Lane Grp Cap (vph) | | 408 | | | 263 | | | 1063 | | | 602 | |
| v/s Ratio Prot | | c0.03 | | | | | | c0.08 | | | | |
| v/s Ratio Perm | | 0.14 | | | c0.21 | | | 0.27 | | | c0.33 | |
| v/c Ratio | | 0.65 | | | 1.02 | | | 0.77 | | | 0.94 | |
| Uniform Delay, d1 | | 47.4 | | | 56.0 | | | 32.3 | | | 44.4 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 7.8 | | | 59.4 | | | 5.5 | | | 23.8 | |
| Delay (s) | | 55.2 | | | 115.4 | | | 37.8 | | | 68.2 | |
| Level of Service | | E | | | F | | | D | | | E | |
| Approach Delay (s) | | 55.2 | | | 115.4 | | | 37.8 | | | 68.2 | |
| Approach LOS | | E | | | F | | | D | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 60.0 | HCM 2000 Level of Service | E |
| HCM 2000 Volume to Capacity ratio | 0.77 | | |
| Actuated Cycle Length (s) | 142.0 | Sum of lost time (s) | 21.0 |
| Intersection Capacity Utilization | 90.6% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

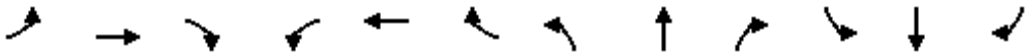
Description: L Street is very wide and during peak hours vehicles form two lanes.

c Critical Lane Group



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 27 | 129 | 0 | 0 | 236 | 5 | 128 | 11 | 27 | 5 | 0 | 59 |
| Future Volume (vph) | 27 | 129 | 0 | 0 | 236 | 5 | 128 | 11 | 27 | 5 | 0 | 59 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 13 | 12 | 10 | 10 | 12 | 12 | 16 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | | | 0.997 | | | 0.892 | | | 0.876 | |
| Flt Protected | | 0.991 | | | | | 0.950 | | | | 0.996 | |
| Satd. Flow (prot) | 0 | 1378 | 0 | 0 | 1548 | 0 | 1325 | 1243 | 0 | 0 | 1215 | 0 |
| Flt Permitted | | 0.991 | | | | | 0.950 | | | | 0.996 | |
| Satd. Flow (perm) | 0 | 1378 | 0 | 0 | 1548 | 0 | 1325 | 1243 | 0 | 0 | 1215 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 1822 | | | 540 | | | 382 | | | 350 | |
| Travel Time (s) | | 41.4 | | | 12.3 | | | 8.7 | | | 8.0 | |
| Confl. Peds. (#/hr) | 8 | | 18 | 18 | | 8 | 13 | | 28 | 28 | | 13 |
| Confl. Bikes (#/hr) | | | 1 | | | 3 | | | 1 | | | |
| Peak Hour Factor | 0.70 | 0.70 | 0.70 | 0.68 | 0.68 | 0.68 | 0.71 | 0.71 | 0.71 | 0.50 | 0.50 | 0.50 |
| Heavy Vehicles (%) | 9% | 11% | 2% | 0% | 2% | 25% | 3% | 11% | 0% | 17% | 0% | 26% |
| Parking (#/hr) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Adj. Flow (vph) | 39 | 184 | 0 | 0 | 347 | 7 | 180 | 15 | 38 | 10 | 0 | 118 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 223 | 0 | 0 | 354 | 0 | 180 | 53 | 0 | 0 | 128 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 10 | | | 10 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.30 | 1.14 | 1.14 | 1.25 | 1.14 | 1.42 | 1.42 | 1.14 | 1.14 | 1.12 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 49.8% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

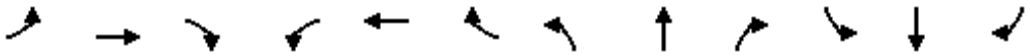


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 27 | 129 | 0 | 0 | 236 | 5 | 128 | 11 | 27 | 5 | 0 | 59 |
| Future Volume (Veh/h) | 27 | 129 | 0 | 0 | 236 | 5 | 128 | 11 | 27 | 5 | 0 | 59 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.70 | 0.70 | 0.70 | 0.68 | 0.68 | 0.68 | 0.71 | 0.71 | 0.71 | 0.50 | 0.50 | 0.50 |
| Hourly flow rate (vph) | 39 | 184 | 0 | 0 | 347 | 7 | 180 | 15 | 38 | 10 | 0 | 118 |
| Pedestrians | | 13 | | | 28 | | | 18 | | | 8 | |
| Lane Width (ft) | | 12.0 | | | 13.0 | | | 10.0 | | | 16.0 | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Percent Blockage | | 1 | | | 3 | | | 1 | | | 1 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 540 | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 362 | | | 202 | | | 762 | 642 | 230 | 694 | 638 | 372 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 362 | | | 202 | | | 762 | 642 | 230 | 694 | 638 | 372 |
| tC, single (s) | 4.2 | | | 4.1 | | | *6.5 | 6.6 | 6.2 | 7.3 | 6.5 | 6.5 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.3 | | | 2.2 | | | 3.5 | 4.1 | 3.3 | 3.7 | 4.0 | 3.5 |
| p0 queue free % | 97 | | | 100 | | | 35 | 96 | 95 | 97 | 100 | 81 |
| cM capacity (veh/h) | 1149 | | | 1365 | | | 277 | 360 | 784 | 288 | 375 | 612 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | SB 1 |
|---|---|---|---|---|---|
| Volume Total | 223 | 354 | 180 | 53 | 128 |
| Volume Left | 39 | 0 | 180 | 0 | 10 |
| Volume Right | 0 | 7 | 0 | 38 | 118 |
| cSH | 1149 | 1700 | 277 | 588 | 563 |
| Volume to Capacity | 0.03 | 0.21 | 0.65 | 0.09 | 0.23 |
| Queue Length 95th (ft) | 3 | 0 | 104 | 7 | 22 |
| Control Delay (s) | 1.7 | 0.0 | 39.3 | 11.7 | 13.3 |
| Lane LOS | A | | E | B | B |
| Approach Delay (s) | 1.7 | 0.0 | 33.1 | | 13.3 |
| Approach LOS | | | D | | B |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 10.4 | | | |
| Intersection Capacity Utilization | 49.8% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |

* User Entered Value



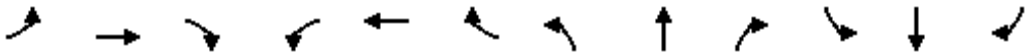
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 34 | 197 | 0 | 0 | 344 | 0 | 98 | 0 | 11 | 0 | 0 | 30 |
| Future Volume (vph) | 34 | 197 | 0 | 0 | 344 | 0 | 98 | 0 | 11 | 0 | 0 | 30 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 13 | 12 | 12 | 13 | 12 | 10 | 12 | 12 | 12 | 12 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | | | | | | 0.986 | | | 0.865 | |
| Flt Protected | | 0.993 | | | | | | 0.957 | | | | |
| Satd. Flow (prot) | 0 | 1553 | 0 | 0 | 1750 | 0 | 0 | 1585 | 0 | 0 | 1479 | 0 |
| Flt Permitted | | 0.993 | | | | | | 0.957 | | | | |
| Satd. Flow (perm) | 0 | 1553 | 0 | 0 | 1750 | 0 | 0 | 1585 | 0 | 0 | 1479 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 576 | | | 561 | | | 457 | | | 201 | |
| Travel Time (s) | | 13.1 | | | 12.8 | | | 10.4 | | | 4.6 | |
| Confl. Peds. (#/hr) | | | 13 | 13 | | | 4 | | | | | |
| Confl. Bikes (#/hr) | | | 1 | | | | | | 3 | | | |
| Peak Hour Factor | 0.92 | 0.84 | 0.84 | 0.77 | 0.77 | 0.92 | 0.70 | 0.92 | 0.70 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 0% | 15% | 0% | 0% | 1% | 0% | 2% | 0% | 0% | 0% | 0% | 0% |
| Adj. Flow (vph) | 37 | 235 | 0 | 0 | 447 | 0 | 140 | 0 | 16 | 0 | 0 | 33 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 272 | 0 | 0 | 447 | 0 | 0 | 156 | 0 | 0 | 33 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.10 | 1.14 | 1.14 | 1.10 | 1.14 | 1.25 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 57.2% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 34 | 197 | 0 | 0 | 344 | 0 | 98 | 0 | 11 | 0 | 0 | 30 |
| Future Volume (Veh/h) | 34 | 197 | 0 | 0 | 344 | 0 | 98 | 0 | 11 | 0 | 0 | 30 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.92 | 0.84 | 0.84 | 0.77 | 0.77 | 0.92 | 0.70 | 0.92 | 0.70 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 37 | 235 | 0 | 0 | 447 | 0 | 140 | 0 | 16 | 0 | 0 | 33 |
| Pedestrians | | 4 | | | | | | 13 | | | | |
| Lane Width (ft) | | 13.0 | | | | | | 12.0 | | | | |
| Walking Speed (ft/s) | | 4.0 | | | | | | 4.0 | | | | |
| Percent Blockage | | 0 | | | | | | 1 | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 576 | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 447 | | | 248 | | | 806 | 769 | 248 | 772 | 769 | 451 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 447 | | | 248 | | | 806 | 769 | 248 | 772 | 769 | 451 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 97 | | | 100 | | | 48 | 100 | 98 | 100 | 100 | 95 |
| cM capacity (veh/h) | 1124 | | | 1315 | | | 271 | 319 | 787 | 302 | 319 | 610 |

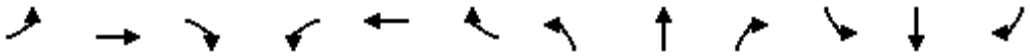
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 272 | 447 | 156 | 33 |
| Volume Left | 37 | 0 | 140 | 0 |
| Volume Right | 0 | 0 | 16 | 33 |
| cSH | 1124 | 1700 | 290 | 610 |
| Volume to Capacity | 0.03 | 0.26 | 0.54 | 0.05 |
| Queue Length 95th (ft) | 3 | 0 | 74 | 4 |
| Control Delay (s) | 1.4 | 0.0 | 30.9 | 11.2 |
| Lane LOS | A | | D | B |
| Approach Delay (s) | 1.4 | 0.0 | 30.9 | 11.2 |
| Approach LOS | | | D | B |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 6.1 | | |
| Intersection Capacity Utilization | 57.2% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 30 | 214 | 0 | 0 | 419 | 224 | 80 | 59 | 15 | 130 | 0 | 73 |
| Future Volume (vph) | 30 | 214 | 0 | 0 | 419 | 224 | 80 | 59 | 15 | 130 | 0 | 73 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 15 | 12 | 12 | 16 | 12 | 12 | 16 | 12 | 12 | 14 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | | | 0.953 | | | 0.987 | | | 0.951 | |
| Flt Protected | | 0.994 | | | | | | 0.975 | | | 0.969 | |
| Satd. Flow (prot) | 0 | 1387 | 0 | 0 | 1755 | 0 | 0 | 1785 | 0 | 0 | 1440 | 0 |
| Flt Permitted | | 0.994 | | | | | | 0.975 | | | 0.969 | |
| Satd. Flow (perm) | 0 | 1387 | 0 | 0 | 1755 | 0 | 0 | 1785 | 0 | 0 | 1440 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 848 | | | 1822 | | | 402 | | | 2052 | |
| Travel Time (s) | | 19.3 | | | 41.4 | | | 9.1 | | | 46.6 | |
| Confl. Peds. (#/hr) | 4 | | | 5 | | 4 | 1 | | 24 | 24 | | 1 |
| Confl. Bikes (#/hr) | | | 2 | | | 6 | | | 9 | | | |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.70 | 0.70 | 0.70 | 0.74 | 0.74 | 0.74 | 0.88 | 0.88 | 0.88 |
| Heavy Vehicles (%) | 9% | 23% | 0% | 0% | 7% | 2% | 1% | 2% | 33% | 11% | 0% | 27% |
| Parking (#/hr) | | 0 | 0 | | | | | | | | | |
| Adj. Flow (vph) | 34 | 243 | 0 | 0 | 599 | 320 | 108 | 80 | 20 | 148 | 0 | 83 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 277 | 0 | 0 | 919 | 0 | 0 | 208 | 0 | 0 | 231 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.16 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 1.05 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |

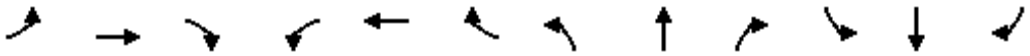
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 64.8% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 30 | 214 | 0 | 0 | 419 | 224 | 80 | 59 | 15 | 130 | 0 | 73 |
| Future Volume (Veh/h) | 30 | 214 | 0 | 0 | 419 | 224 | 80 | 59 | 15 | 130 | 0 | 73 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.70 | 0.70 | 0.70 | 0.74 | 0.74 | 0.74 | 0.88 | 0.88 | 0.88 |
| Hourly flow rate (vph) | 34 | 243 | 0 | 0 | 599 | 320 | 108 | 80 | 20 | 148 | 0 | 83 |
| Pedestrians | | 1 | | | 24 | | | 5 | | | 4 | |
| Lane Width (ft) | | 15.0 | | | 16.0 | | | 16.0 | | | 14.0 | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Percent Blockage | | 0 | | | 3 | | | 1 | | | 0 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 923 | | | 248 | | | 1159 | 1239 | 272 | 1158 | 1079 | 764 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 923 | | | 248 | | | 1159 | 1239 | 272 | 1158 | 1079 | 764 |
| tC, single (s) | 4.2 | | | 4.1 | | | 7.1 | 6.5 | 6.5 | 7.2 | 6.5 | 6.5 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.3 | | | 2.2 | | | 3.5 | 4.0 | 3.6 | 3.6 | 4.0 | 3.5 |
| p0 queue free % | 95 | | | 100 | | | 15 | 52 | 97 | 0 | 100 | 77 |
| cM capacity (veh/h) | 709 | | | 1322 | | | 127 | 165 | 675 | 93 | 208 | 364 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 277 | 919 | 208 | 231 |
| Volume Left | 34 | 0 | 108 | 148 |
| Volume Right | 0 | 320 | 20 | 83 |
| cSH | 709 | 1322 | 153 | 127 |
| Volume to Capacity | 0.05 | 0.00 | 1.36 | 1.82 |
| Queue Length 95th (ft) | 4 | 0 | 323 | 446 |
| Control Delay (s) | 1.8 | 0.0 | 254.9 | 456.4 |
| Lane LOS | A | | F | F |
| Approach Delay (s) | 1.8 | 0.0 | 254.9 | 456.4 |
| Approach LOS | | | F | F |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 97.2 | | | |
| Intersection Capacity Utilization | 64.8% | ICU Level of Service | C | |
| Analysis Period (min) | 15 | | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 32 | 21 | 5 | 5 | 32 | 11 | 21 | 662 | 11 | 21 | 316 | 38 |
| Future Volume (vph) | 32 | 21 | 5 | 5 | 32 | 11 | 21 | 662 | 11 | 21 | 316 | 38 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | 0.95 | | | 0.97 | | | 1.00 | | | 0.99 | |
| Frt | | 0.988 | | | 0.969 | | | 0.998 | | | 0.986 | |
| Flt Protected | | 0.973 | | | 0.995 | | | 0.998 | | | 0.997 | |
| Satd. Flow (prot) | 0 | 1108 | 0 | 0 | 1346 | 0 | 0 | 1410 | 0 | 0 | 1344 | 0 |
| Flt Permitted | | 0.832 | | | 0.974 | | | 0.982 | | | 0.948 | |
| Satd. Flow (perm) | 0 | 902 | 0 | 0 | 1314 | 0 | 0 | 1385 | 0 | 0 | 1277 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 4 | | | 12 | | | 1 | | | 8 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 659 | | | 649 | | | 380 | | | 618 | |
| Travel Time (s) | | 15.0 | | | 14.8 | | | 8.6 | | | 14.0 | |
| Confl. Peds. (#/hr) | 28 | | 11 | 11 | | 28 | 108 | | 63 | 63 | | 108 |
| Confl. Bikes (#/hr) | | | | | | | | | 5 | | | |
| Peak Hour Factor | 0.74 | 0.74 | 0.74 | 0.87 | 0.87 | 0.87 | 0.97 | 0.97 | 0.97 | 0.87 | 0.87 | 0.87 |
| Heavy Vehicles (%) | 31% | 18% | 4% | 0% | 0% | 0% | 6% | 1% | 11% | 0% | 4% | 3% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Adj. Flow (vph) | 43 | 28 | 7 | 6 | 37 | 13 | 22 | 682 | 11 | 24 | 363 | 44 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 78 | 0 | 0 | 56 | 0 | 0 | 715 | 0 | 0 | 431 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |

| Lane Group | Ø2 |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | |
| Future Volume (vph) | |
| Ideal Flow (vphpl) | |
| Lane Width (ft) | |
| Lane Util. Factor | |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Right Turn on Red | |
| Satd. Flow (RTOR) | |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | |
| Heavy Vehicles (%) | |
| Parking (#/hr) | |
| Adj. Flow (vph) | |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | |
| Enter Blocked Intersection | |
| Lane Alignment | |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | |
| Turning Speed (mph) | |
| Number of Detectors | |
| Detector Template | |
| Leading Detector (ft) | |
| Trailing Detector (ft) | |
| Detector 1 Position(ft) | |
| Detector 1 Size(ft) | |
| Detector 1 Type | |
| Detector 1 Channel | |
| Detector 1 Extend (s) | |
| Detector 1 Queue (s) | |
| Detector 1 Delay (s) | |
| Detector 2 Position(ft) | |
| Detector 2 Size(ft) | |
| Detector 2 Type | |
| Detector 2 Channel | |
| Detector 2 Extend (s) | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Detector Phase | 5 | 5 | | 5 | 5 | | 1 | 1 | | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | |
| Minimum Split (s) | 12.0 | 12.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Total Split (s) | 18.0 | 18.0 | | 18.0 | 18.0 | | 54.0 | 54.0 | | 54.0 | 54.0 | |
| Total Split (%) | 17.6% | 17.6% | | 17.6% | 17.6% | | 52.9% | 52.9% | | 52.9% | 52.9% | |
| Maximum Green (s) | 14.0 | 14.0 | | 14.0 | 14.0 | | 50.0 | 50.0 | | 50.0 | 50.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Lost Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lead/Lag | | | | | | | Lead | Lead | | Lead | Lead | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | Max | Max | | Max | Max | | Max | Max | | Max | Max | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 14.3 | | | 14.3 | | | 51.0 | | | 51.0 | |
| Actuated g/C Ratio | | 0.15 | | | 0.15 | | | 0.53 | | | 0.53 | |
| v/c Ratio | | 0.57 | | | 0.27 | | | 0.97 | | | 0.63 | |
| Control Delay | | 57.5 | | | 36.6 | | | 53.7 | | | 23.6 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 57.5 | | | 36.6 | | | 53.7 | | | 23.6 | |
| LOS | | E | | | D | | | D | | | C | |
| Approach Delay | | 57.5 | | | 36.6 | | | 53.7 | | | 23.6 | |
| Approach LOS | | E | | | D | | | D | | | C | |

**Intersection Summary**

Area Type: CBD
Cycle Length: 102
Actuated Cycle Length: 96
Natural Cycle: 90
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 43.0 Intersection LOS: D
Intersection Capacity Utilization 63.7% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 11: L Street & E 5th Street



| Lane Group | Ø2 |
|---|---|
| Turn Type | |
| Protected Phases | 2 |
| Permitted Phases | |
| Detector Phase | |
| Switch Phase | |
| Minimum Initial (s) | 4.0 |
| Minimum Split (s) | 30.0 |
| Total Split (s) | 30.0 |
| Total Split (%) | 29% |
| Maximum Green (s) | 26.0 |
| Yellow Time (s) | 3.0 |
| All-Red Time (s) | 1.0 |
| Lost Time Adjust (s) | |
| Total Lost Time (s) | |
| Lead/Lag | Lag |
| Lead-Lag Optimize? | |
| Vehicle Extension (s) | 2.0 |
| Recall Mode | None |
| Walk Time (s) | 14.0 |
| Flash Dont Walk (s) | 12.0 |
| Pedestrian Calls (#/hr) | 53 |
| Act Effct Green (s) | |
| Actuated g/C Ratio | |
| v/c Ratio | |
| Control Delay | |
| Queue Delay | |
| Total Delay | |
| LOS | |
| Approach Delay | |
| Approach LOS | |

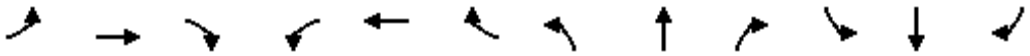
| Intersection Summary |
|---|

| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 78 | 56 | 715 | 431 |
| v/c Ratio | 0.57 | 0.27 | 0.97 | 0.63 |
| Control Delay | 57.5 | 36.6 | 53.7 | 23.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 57.5 | 36.6 | 53.7 | 23.6 |
| Queue Length 50th (ft) | 46 | 26 | ~512 | 203 |
| Queue Length 95th (ft) | 77 | 62 | #738 | 306 |
| Internal Link Dist (ft) | 579 | 569 | 300 | 538 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 137 | 205 | 736 | 682 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.57 | 0.27 | 0.97 | 0.63 |

Intersection Summary

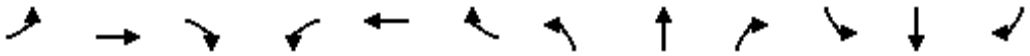
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 32 | 21 | 5 | 5 | 32 | 11 | 21 | 662 | 11 | 21 | 316 | 38 |
| Future Volume (vph) | 32 | 21 | 5 | 5 | 32 | 11 | 21 | 662 | 11 | 21 | 316 | 38 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Total Lost time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Frpb, ped/bikes | | 0.99 | | | 0.97 | | | 1.00 | | | 0.99 | |
| Flpb, ped/bikes | | 0.95 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Frt | | 0.99 | | | 0.97 | | | 1.00 | | | 0.99 | |
| Flt Protected | | 0.97 | | | 0.99 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | | 1058 | | | 1343 | | | 1409 | | | 1344 | |
| Flt Permitted | | 0.83 | | | 0.97 | | | 0.98 | | | 0.95 | |
| Satd. Flow (perm) | | 904 | | | 1315 | | | 1385 | | | 1278 | |
| Peak-hour factor, PHF | 0.74 | 0.74 | 0.74 | 0.87 | 0.87 | 0.87 | 0.97 | 0.97 | 0.97 | 0.87 | 0.87 | 0.87 |
| Adj. Flow (vph) | 43 | 28 | 7 | 6 | 37 | 13 | 22 | 682 | 11 | 24 | 363 | 44 |
| RTOR Reduction (vph) | 0 | 3 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 4 | 0 |
| Lane Group Flow (vph) | 0 | 75 | 0 | 0 | 46 | 0 | 0 | 715 | 0 | 0 | 427 | 0 |
| Confl. Peds. (#/hr) | 28 | | 11 | 11 | | 28 | 108 | | 63 | 63 | | 108 |
| Confl. Bikes (#/hr) | | | | | | | | | 5 | | | |
| Heavy Vehicles (%) | 31% | 18% | 4% | 0% | 0% | 0% | 6% | 1% | 11% | 0% | 4% | 3% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 14.3 | | | 14.3 | | | 51.0 | | | 51.0 | |
| Effective Green, g (s) | | 14.3 | | | 14.3 | | | 51.0 | | | 51.0 | |
| Actuated g/C Ratio | | 0.15 | | | 0.15 | | | 0.53 | | | 0.53 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | | | 2.0 | | | 2.0 | |
| Lane Grp Cap (vph) | | 133 | | | 194 | | | 728 | | | 672 | |
| v/s Ratio Prot | | | | | | | | | | | | |
| v/s Ratio Perm | | c0.08 | | | 0.03 | | | c0.52 | | | 0.33 | |
| v/c Ratio | | 0.56 | | | 0.24 | | | 0.98 | | | 0.64 | |
| Uniform Delay, d1 | | 38.4 | | | 36.5 | | | 22.5 | | | 16.3 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 16.0 | | | 2.8 | | | 29.1 | | | 4.5 | |
| Delay (s) | | 54.4 | | | 39.3 | | | 51.6 | | | 20.9 | |
| Level of Service | | D | | | D | | | D | | | C | |
| Approach Delay (s) | | 54.4 | | | 39.3 | | | 51.6 | | | 20.9 | |
| Approach LOS | | D | | | D | | | D | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 40.9 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.68 | | |
| Actuated Cycle Length (s) | 96.9 | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 63.7% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 27 | 16 | 5 | 5 | 27 | 11 | 16 | 604 | 5 | 11 | 252 | 16 |
| Future Volume (vph) | 27 | 16 | 5 | 5 | 27 | 11 | 16 | 604 | 5 | 11 | 252 | 16 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 16 | 12 | 12 | 15 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | 0.98 | | | 0.99 | | | 1.00 | | | 0.99 | |
| Frt | | 0.987 | | | 0.966 | | | 0.999 | | | 0.992 | |
| Flt Protected | | 0.973 | | | 0.994 | | | 0.999 | | | 0.998 | |
| Satd. Flow (prot) | 0 | 1491 | 0 | 0 | 1328 | 0 | 0 | 1577 | 0 | 0 | 1505 | 0 |
| Flt Permitted | | 0.847 | | | 0.977 | | | 0.990 | | | 0.976 | |
| Satd. Flow (perm) | 0 | 1280 | 0 | 0 | 1304 | 0 | 0 | 1561 | 0 | 0 | 1471 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 6 | | | 18 | | | 1 | | | 8 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 602 | | | 677 | | | 676 | | | 535 | |
| Travel Time (s) | | 13.7 | | | 15.4 | | | 15.4 | | | 12.2 | |
| Confl. Peds. (#/hr) | 11 | | 3 | 3 | | 11 | 32 | | 19 | 19 | | 32 |
| Confl. Bikes (#/hr) | | | | | | 2 | | | 1 | | | |
| Peak Hour Factor | 0.78 | 0.78 | 0.78 | 0.60 | 0.60 | 0.60 | 0.94 | 0.94 | 0.94 | 0.89 | 0.89 | 0.89 |
| Heavy Vehicles (%) | 4% | 29% | 0% | 0% | 33% | 0% | 0% | 1% | 0% | 9% | 4% | 8% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | | | | | |
| Adj. Flow (vph) | 35 | 21 | 6 | 8 | 45 | 18 | 17 | 643 | 5 | 12 | 283 | 18 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 62 | 0 | 0 | 71 | 0 | 0 | 665 | 0 | 0 | 313 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.12 | 1.14 | 1.14 | 1.16 | 1.14 | 1.14 | 1.25 | 1.14 | 1.14 | 1.25 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Detector Phase | 5 | 5 | | 5 | 5 | | 1 | 1 | | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 6.0 | 6.0 | | 6.0 | 6.0 | | 20.0 | 20.0 | | 20.0 | 20.0 | |
| Minimum Split (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 24.0 | 24.0 | | 24.0 | 24.0 | |
| Total Split (s) | 24.0 | 24.0 | | 24.0 | 24.0 | | 54.0 | 54.0 | | 54.0 | 54.0 | |
| Total Split (%) | 30.8% | 30.8% | | 30.8% | 30.8% | | 69.2% | 69.2% | | 69.2% | 69.2% | |
| Maximum Green (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 50.0 | 50.0 | | 50.0 | 50.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Lost Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | Max | Max | | Max | Max | | Max | Max | | Max | Max | |
| Walk Time (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | |
| Flash Dont Walk (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | |
| Pedestrian Calls (#/hr) | 4 | 4 | | 4 | 4 | | 13 | 13 | | 13 | 13 | |
| Act Effct Green (s) | | 20.0 | | | 20.0 | | | 50.0 | | | 50.0 | |
| Actuated g/C Ratio | | 0.26 | | | 0.26 | | | 0.64 | | | 0.64 | |
| v/c Ratio | | 0.19 | | | 0.20 | | | 0.66 | | | 0.33 | |
| Control Delay | | 22.7 | | | 19.9 | | | 12.8 | | | 7.4 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 22.7 | | | 19.9 | | | 12.8 | | | 7.4 | |
| LOS | | C | | | B | | | B | | | A | |
| Approach Delay | | 22.7 | | | 19.9 | | | 12.8 | | | 7.4 | |
| Approach LOS | | C | | | B | | | B | | | A | |

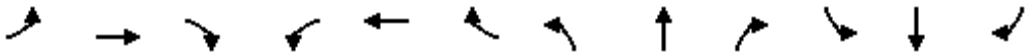
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 78 | | | |
| Actuated Cycle Length: 78 | | | |
| Natural Cycle: 60 | | | |
| Control Type: Semi Act-Uncoord | | | |
| Maximum v/c Ratio: 0.66 | | | |
| Intersection Signal Delay: 12.3 | | Intersection LOS: B | |
| Intersection Capacity Utilization 62.3% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 12: L Street & E 8th Street



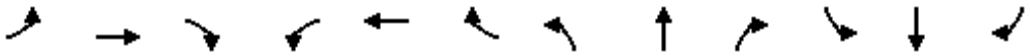
| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 62 | 71 | 665 | 313 |
| v/c Ratio | 0.19 | 0.20 | 0.66 | 0.33 |
| Control Delay | 22.7 | 19.9 | 12.8 | 7.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 22.7 | 19.9 | 12.8 | 7.4 |
| Queue Length 50th (ft) | 21 | 20 | 177 | 59 |
| Queue Length 95th (ft) | 44 | 31 | 291 | 99 |
| Internal Link Dist (ft) | 522 | 597 | 596 | 455 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 332 | 347 | 1001 | 945 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.19 | 0.20 | 0.66 | 0.33 |

Intersection Summary



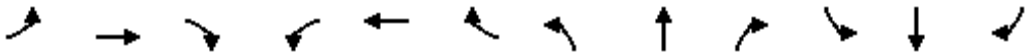
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 27 | 16 | 5 | 5 | 27 | 11 | 16 | 604 | 5 | 11 | 252 | 16 |
| Future Volume (vph) | 27 | 16 | 5 | 5 | 27 | 11 | 16 | 604 | 5 | 11 | 252 | 16 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 16 | 12 | 12 | 15 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Total Lost time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Frpb, ped/bikes | | 1.00 | | | 0.99 | | | 1.00 | | | 0.99 | |
| Flpb, ped/bikes | | 0.99 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Frt | | 0.99 | | | 0.97 | | | 1.00 | | | 0.99 | |
| Flt Protected | | 0.97 | | | 0.99 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | | 1470 | | | 1327 | | | 1574 | | | 1504 | |
| Flt Permitted | | 0.85 | | | 0.98 | | | 0.99 | | | 0.98 | |
| Satd. Flow (perm) | | 1280 | | | 1304 | | | 1560 | | | 1471 | |
| Peak-hour factor, PHF | 0.78 | 0.78 | 0.78 | 0.60 | 0.60 | 0.60 | 0.94 | 0.94 | 0.94 | 0.89 | 0.89 | 0.89 |
| Adj. Flow (vph) | 35 | 21 | 6 | 8 | 45 | 18 | 17 | 643 | 5 | 12 | 283 | 18 |
| RTOR Reduction (vph) | 0 | 4 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 3 | 0 |
| Lane Group Flow (vph) | 0 | 58 | 0 | 0 | 58 | 0 | 0 | 665 | 0 | 0 | 310 | 0 |
| Confl. Peds. (#/hr) | 11 | | 3 | 3 | | 11 | 32 | | 19 | 19 | | 32 |
| Confl. Bikes (#/hr) | | | | | | 2 | | | 1 | | | |
| Heavy Vehicles (%) | 4% | 29% | 0% | 0% | 33% | 0% | 0% | 1% | 0% | 9% | 4% | 8% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 20.0 | | | 20.0 | | | 50.0 | | | 50.0 | |
| Effective Green, g (s) | | 20.0 | | | 20.0 | | | 50.0 | | | 50.0 | |
| Actuated g/C Ratio | | 0.26 | | | 0.26 | | | 0.64 | | | 0.64 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | | | 2.0 | | | 2.0 | |
| Lane Grp Cap (vph) | | 328 | | | 334 | | | 1000 | | | 942 | |
| v/s Ratio Prot | | | | | | | | | | | | |
| v/s Ratio Perm | | c0.04 | | | 0.04 | | | c0.43 | | | 0.21 | |
| v/c Ratio | | 0.18 | | | 0.17 | | | 0.66 | | | 0.33 | |
| Uniform Delay, d1 | | 22.6 | | | 22.6 | | | 8.8 | | | 6.4 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 1.2 | | | 1.1 | | | 3.5 | | | 0.9 | |
| Delay (s) | | 23.7 | | | 23.7 | | | 12.2 | | | 7.3 | |
| Level of Service | | C | | | C | | | B | | | A | |
| Approach Delay (s) | | 23.7 | | | 23.7 | | | 12.2 | | | 7.3 | |
| Approach LOS | | C | | | C | | | B | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 12.2 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.52 | | |
| Actuated Cycle Length (s) | 78.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 62.3% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 5 | 5 | 5 | 16 | 5 | 27 | 556 | 5 | 0 | 204 | 16 |
| Future Volume (vph) | 0 | 5 | 5 | 5 | 16 | 5 | 27 | 556 | 5 | 0 | 204 | 16 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | 0.932 | | | 0.975 | | | 0.999 | | | 0.990 | |
| Flt Protected | | | | | 0.991 | | | 0.998 | | | | |
| Satd. Flow (prot) | 0 | 1771 | 0 | 0 | 1836 | 0 | 0 | 1894 | 0 | 0 | 1881 | 0 |
| Flt Permitted | | | | | 0.991 | | | 0.998 | | | | |
| Satd. Flow (perm) | 0 | 1771 | 0 | 0 | 1836 | 0 | 0 | 1894 | 0 | 0 | 1881 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 487 | | | 392 | | | 93 | | | 676 | |
| Travel Time (s) | | 11.1 | | | 8.9 | | | 2.1 | | | 15.4 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 0 | 5 | 5 | 5 | 17 | 5 | 29 | 604 | 5 | 0 | 222 | 17 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 10 | 0 | 0 | 27 | 0 | 0 | 638 | 0 | 0 | 239 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |

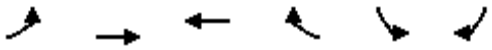
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 58.3% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |



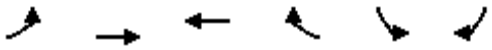
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 5 | 5 | 5 | 16 | 5 | 27 | 556 | 5 | 0 | 204 | 16 |
| Future Volume (Veh/h) | 0 | 5 | 5 | 5 | 16 | 5 | 27 | 556 | 5 | 0 | 204 | 16 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 0 | 5 | 5 | 5 | 17 | 5 | 29 | 604 | 5 | 0 | 222 | 17 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | 676 | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 908 | 898 | 230 | 902 | 904 | 606 | 239 | | | 609 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 908 | 898 | 230 | 902 | 904 | 606 | 239 | | | 609 | | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 100 | 98 | 99 | 98 | 94 | 99 | 98 | | | 100 | | |
| cM capacity (veh/h) | 239 | 275 | 814 | 251 | 273 | 500 | 1340 | | | 979 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 10 | 27 | 638 | 239 |
| Volume Left | 0 | 5 | 29 | 0 |
| Volume Right | 5 | 5 | 5 | 17 |
| cSH | 411 | 293 | 1340 | 979 |
| Volume to Capacity | 0.02 | 0.09 | 0.02 | 0.00 |
| Queue Length 95th (ft) | 2 | 8 | 2 | 0 |
| Control Delay (s) | 14.0 | 18.5 | 0.6 | 0.0 |
| Lane LOS | B | C | A | |
| Approach Delay (s) | 14.0 | 18.5 | 0.6 | 0.0 |
| Approach LOS | B | C | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 1.1 | | | |
| Intersection Capacity Utilization | 58.3% | ICU Level of Service | B | |
| Analysis Period (min) | 15 | | | |



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR | Ø2 |
|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | |
| Traffic Volume (vph) | 580 | 357 | 304 | 7 | 0 | 0 | |
| Future Volume (vph) | 580 | 357 | 304 | 7 | 0 | 0 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Lane Util. Factor | 0.95 | 0.95 | 0.95 | 0.95 | 1.00 | 1.00 | |
| Frt | | | 0.996 | | | | |
| Flt Protected | | 0.970 | | | | | |
| Satd. Flow (prot) | 0 | 3502 | 3596 | 0 | 0 | 0 | |
| Flt Permitted | | 0.613 | | | | | |
| Satd. Flow (perm) | 0 | 2213 | 3596 | 0 | 0 | 0 | |
| Right Turn on Red | | | | Yes | | Yes | |
| Satd. Flow (RTOR) | | | 5 | | | | |
| Link Speed (mph) | | 30 | 30 | | 30 | | |
| Link Distance (ft) | | 289 | 295 | | 140 | | |
| Travel Time (s) | | 6.6 | 6.7 | | 3.2 | | |
| Peak Hour Factor | 0.85 | 0.85 | 0.73 | 0.73 | 0.92 | 0.92 | |
| Adj. Flow (vph) | 682 | 420 | 416 | 10 | 0 | 0 | |
| Shared Lane Traffic (%) | | | | | | | |
| Lane Group Flow (vph) | 0 | 1102 | 426 | 0 | 0 | 0 | |
| Enter Blocked Intersection | No | No | No | No | No | No | |
| Lane Alignment | Left | Left | Left | Right | Left | Right | |
| Median Width(ft) | | 0 | 0 | | 0 | | |
| Link Offset(ft) | | 0 | 0 | | 0 | | |
| Crosswalk Width(ft) | | 16 | 16 | | 16 | | |
| Two way Left Turn Lane | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Turning Speed (mph) | 15 | | | 9 | 15 | 9 | |
| Number of Detectors | 1 | 2 | 2 | | | | |
| Detector Template | Left | Thru | Thru | | | | |
| Leading Detector (ft) | 20 | 100 | 100 | | | | |
| Trailing Detector (ft) | 0 | 0 | 0 | | | | |
| Detector 1 Position(ft) | 0 | 0 | 0 | | | | |
| Detector 1 Size(ft) | 20 | 6 | 6 | | | | |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | | | | |
| Detector 1 Channel | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | | | | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | | | | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | | | | |
| Detector 2 Position(ft) | | 94 | 94 | | | | |
| Detector 2 Size(ft) | | 6 | 6 | | | | |
| Detector 2 Type | | Cl+Ex | Cl+Ex | | | | |
| Detector 2 Channel | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | 0.0 | | | | |
| Turn Type | Perm | NA | NA | | | | |
| Protected Phases | | 1 | 1 | | | | 2 |
| Permitted Phases | 1 | | | | | | |
| Detector Phase | 1 | 1 | 1 | | | | |
| Switch Phase | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | 8.0 | | | | 10.0 |



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR | Ø2 |
|---|---|---|---|---|---|---|---|
| Minimum Split (s) | 22.0 | 22.0 | 22.0 | | | | 25.0 |
| Total Split (s) | 70.0 | 70.0 | 70.0 | | | | 25.0 |
| Total Split (%) | 73.7% | 73.7% | 73.7% | | | | 26% |
| Maximum Green (s) | 62.6 | 62.6 | 62.6 | | | | 20.5 |
| Yellow Time (s) | 5.4 | 5.4 | 5.4 | | | | 3.5 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | | | 1.0 |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | | | |
| Total Lost Time (s) | | 7.4 | 7.4 | | | | |
| Lead/Lag | Lead | Lead | Lead | | | | Lag |
| Lead-Lag Optimize? | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | | | | 2.0 |
| Recall Mode | Max | Max | Max | | | | None |
| Walk Time (s) | | | | | | | 18.0 |
| Flash Dont Walk (s) | | | | | | | 1.0 |
| Pedestrian Calls (#/hr) | | | | | | | 24 |
| Act Effct Green (s) | | 83.6 | 83.6 | | | | |
| Actuated g/C Ratio | | 0.89 | 0.89 | | | | |
| v/c Ratio | | 0.56 | 0.13 | | | | |
| Control Delay | | 6.1 | 2.7 | | | | |
| Queue Delay | | 0.0 | 0.0 | | | | |
| Total Delay | | 6.1 | 2.7 | | | | |
| LOS | | A | A | | | | |
| Approach Delay | | 6.1 | 2.7 | | | | |
| Approach LOS | | A | A | | | | |

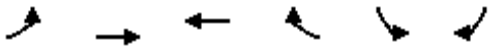
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 95 | | | |
| Actuated Cycle Length: 94.4 | | | |
| Natural Cycle: 70 | | | |
| Control Type: Semi Act-Uncoord | | | |
| Maximum v/c Ratio: 0.56 | | | |
| Intersection Signal Delay: 5.1 | | Intersection LOS: A | |
| Intersection Capacity Utilization 53.1% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 14: Day Blvd Ped



| Lane Group | EBT | WBT |
|---|---|---|
| Lane Group Flow (vph) | 1102 | 426 |
| v/c Ratio | 0.56 | 0.13 |
| Control Delay | 6.1 | 2.7 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 6.1 | 2.7 |
| Queue Length 50th (ft) | 0 | 0 |
| Queue Length 95th (ft) | 241 | 46 |
| Internal Link Dist (ft) | 209 | 215 |
| Turn Bay Length (ft) | | |
| Base Capacity (vph) | 1961 | 3187 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.56 | 0.13 |

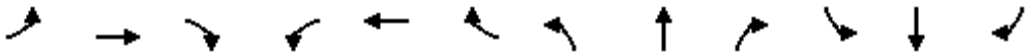
Intersection Summary



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 580 | 357 | 304 | 7 | 0 | 0 |
| Future Volume (vph) | 580 | 357 | 304 | 7 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 7.4 | 7.4 | | | |
| Lane Util. Factor | | 0.95 | 0.95 | | | |
| Frt | | 1.00 | 1.00 | | | |
| Flt Protected | | 0.97 | 1.00 | | | |
| Satd. Flow (prot) | | 3502 | 3597 | | | |
| Flt Permitted | | 0.61 | 1.00 | | | |
| Satd. Flow (perm) | | 2213 | 3597 | | | |
| Peak-hour factor, PHF | 0.85 | 0.85 | 0.73 | 0.73 | 0.92 | 0.92 |
| Adj. Flow (vph) | 682 | 420 | 416 | 10 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 1 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 1102 | 425 | 0 | 0 | 0 |
| Turn Type | Perm | NA | NA | | | |
| Protected Phases | | 1 | 1 | | | |
| Permitted Phases | 1 | | | | | |
| Actuated Green, G (s) | | 78.7 | 78.7 | | | |
| Effective Green, g (s) | | 78.7 | 78.7 | | | |
| Actuated g/C Ratio | | 0.81 | 0.81 | | | |
| Clearance Time (s) | | 7.4 | 7.4 | | | |
| Vehicle Extension (s) | | 2.0 | 2.0 | | | |
| Lane Grp Cap (vph) | | 1791 | 2912 | | | |
| v/s Ratio Prot | | | 0.12 | | | |
| v/s Ratio Perm | | c0.50 | | | | |
| v/c Ratio | | 0.62 | 0.15 | | | |
| Uniform Delay, d1 | | 3.5 | 2.0 | | | |
| Progression Factor | | 1.00 | 1.00 | | | |
| Incremental Delay, d2 | | 1.6 | 0.1 | | | |
| Delay (s) | | 5.1 | 2.1 | | | |
| Level of Service | | A | A | | | |
| Approach Delay (s) | | 5.1 | 2.1 | | 0.0 | |
| Approach LOS | | A | A | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 4.3 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.57 | | |
| Actuated Cycle Length (s) | 97.2 | Sum of lost time (s) | 11.9 |
| Intersection Capacity Utilization | 53.1% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



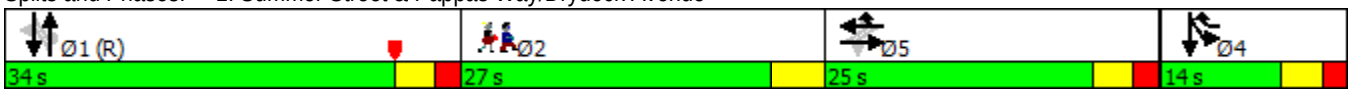
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 69 | 40 | 16 | 278 | 125 | 328 | 11 | 795 | 145 | 93 | 1078 | 235 |
| Future Volume (vph) | 69 | 40 | 16 | 278 | 125 | 328 | 11 | 795 | 145 | 93 | 1078 | 235 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 14 | 12 | 12 | 13 | 16 | 10 | 11 | 12 | 13 | 12 | 12 |
| Storage Length (ft) | 0 | | 0 | 350 | | 0 | 70 | | 0 | 350 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor | | 0.99 | | | 0.98 | | 0.98 | 0.99 | | 1.00 | 0.97 | |
| Frt | | 0.983 | | | | 0.850 | | 0.977 | | | 0.973 | |
| Flt Protected | | 0.973 | | | 0.967 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1644 | 0 | 0 | 1703 | 1569 | 1516 | 2962 | 0 | 1569 | 2957 | 0 |
| Flt Permitted | | 0.338 | | | 0.708 | | 0.146 | | | 0.146 | | |
| Satd. Flow (perm) | 0 | 568 | 0 | 0 | 1218 | 1569 | 229 | 2962 | 0 | 240 | 2957 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 7 | | | | 360 | | 21 | | | 33 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 745 | | | 950 | | | 1510 | | | 501 | |
| Travel Time (s) | | 16.9 | | | 21.6 | | | 34.3 | | | 11.4 | |
| Confl. Peds. (#/hr) | 21 | | 33 | 33 | | 21 | 138 | | 34 | 34 | | 138 |
| Confl. Bikes (#/hr) | | | 1 | | | 1 | | | 2 | | | 25 |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.91 | 0.91 | 0.91 | 0.90 | 0.90 | 0.90 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 6% | 3% | 8% | 0% | 1% | 5% | 0% | 3% | 2% | 7% | 3% | 4% |
| Adj. Flow (vph) | 81 | 47 | 19 | 305 | 137 | 360 | 12 | 883 | 161 | 100 | 1159 | 253 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 147 | 0 | 0 | 442 | 360 | 12 | 1044 | 0 | 100 | 1412 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 6 | | | 13 | | | 17 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.05 | 1.14 | 1.14 | 1.10 | 0.97 | 1.25 | 1.19 | 1.14 | 1.10 | 1.14 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | 20 | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | 20 | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |

| Lane Group | Ø2 |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | |
| Future Volume (vph) | |
| Ideal Flow (vphpl) | |
| Lane Width (ft) | |
| Storage Length (ft) | |
| Storage Lanes | |
| Taper Length (ft) | |
| Lane Util. Factor | |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Right Turn on Red | |
| Satd. Flow (RTOR) | |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | |
| Heavy Vehicles (%) | |
| Adj. Flow (vph) | |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | |
| Enter Blocked Intersection | |
| Lane Alignment | |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | |
| Turning Speed (mph) | |
| Number of Detectors | |
| Detector Template | |
| Leading Detector (ft) | |
| Trailing Detector (ft) | |
| Detector 1 Position(ft) | |
| Detector 1 Size(ft) | |
| Detector 1 Type | |
| Detector 1 Channel | |
| Detector 1 Extend (s) | |
| Detector 1 Queue (s) | |
| Detector 1 Delay (s) | |
| Detector 2 Position(ft) | |
| Detector 2 Size(ft) | |
| Detector 2 Type | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | pt+ov | Perm | NA | | D.P+P | NA | |
| Protected Phases | | 5 | | | 5 | 5 4 | | 1 | | 4 | 1 4 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Detector Phase | 5 | 5 | | 5 | 5 | 5 4 | 1 | 1 | | 4 | 1 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | | |
| Minimum Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | | 13.0 | 13.0 | | 13.0 | | |
| Total Split (s) | 25.0 | 25.0 | | 25.0 | 25.0 | | 34.0 | 34.0 | | 14.0 | | |
| Total Split (%) | 25.0% | 25.0% | | 25.0% | 25.0% | | 34.0% | 34.0% | | 14.0% | | |
| Maximum Green (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 29.0 | 29.0 | | 9.0 | | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | 0.0 | 0.0 | | 0.0 | | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | 5.0 | 5.0 | | 5.0 | | |
| Lead/Lag | | | | | | | Lead | Lead | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | | |
| Recall Mode | None | None | | None | None | | C-Max | C-Max | | None | | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 30.8 | | | 30.8 | 44.8 | 29.0 | 29.0 | | 38.0 | 43.0 | |
| Actuated g/C Ratio | | 0.31 | | | 0.31 | 0.45 | 0.29 | 0.29 | | 0.38 | 0.43 | |
| v/c Ratio | | 0.82 | | | 1.18 | 0.40 | 0.18 | 1.20 | | 0.48 | 1.09 | |
| Control Delay | | 71.7 | | | 140.3 | 4.1 | 34.9 | 131.9 | | 25.5 | 83.3 | |
| Queue Delay | | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | | 71.7 | | | 140.3 | 4.1 | 34.9 | 131.9 | | 25.5 | 83.3 | |
| LOS | | E | | | F | A | C | F | | C | F | |
| Approach Delay | | 71.7 | | | 79.1 | | | 130.8 | | | 79.4 | |
| Approach LOS | | E | | | E | | | F | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 100 | | | |
| Actuated Cycle Length: 100 | | | |
| Offset: 0 (0%), Referenced to phase 1:NBSB, Start of Yellow | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 1.20 | | | |
| Intersection Signal Delay: 94.5 | | Intersection LOS: F | |
| Intersection Capacity Utilization 98.5% | | ICU Level of Service F | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 1: Summer Street & Pappas Way/Drydock Avenue



| Lane Group | Ø2 |
|---|---|
| Detector 2 Channel | |
| Detector 2 Extend (s) | |
| Turn Type | |
| Protected Phases | 2 |
| Permitted Phases | |
| Detector Phase | |
| Switch Phase | |
| Minimum Initial (s) | 4.0 |
| Minimum Split (s) | 27.0 |
| Total Split (s) | 27.0 |
| Total Split (%) | 27% |
| Maximum Green (s) | 23.0 |
| Yellow Time (s) | 4.0 |
| All-Red Time (s) | 0.0 |
| Lost Time Adjust (s) | |
| Total Lost Time (s) | |
| Lead/Lag | Lag |
| Lead-Lag Optimize? | |
| Vehicle Extension (s) | 2.0 |
| Recall Mode | None |
| Walk Time (s) | 7.0 |
| Flash Dont Walk (s) | 16.0 |
| Pedestrian Calls (#/hr) | 28 |
| Act Effct Green (s) | |
| Actuated g/C Ratio | |
| v/c Ratio | |
| Control Delay | |
| Queue Delay | |
| Total Delay | |
| LOS | |
| Approach Delay | |
| Approach LOS | |

| Intersection Summary |
|---|



| Lane Group | EBT | WBT | WBR | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 147 | 442 | 360 | 12 | 1044 | 100 | 1412 |
| v/c Ratio | 0.82 | 1.18 | 0.40 | 0.18 | 1.20 | 0.48 | 1.09 |
| Control Delay | 71.7 | 140.3 | 4.1 | 34.9 | 131.9 | 25.5 | 83.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 71.7 | 140.3 | 4.1 | 34.9 | 131.9 | 25.5 | 83.3 |
| Queue Length 50th (ft) | ~113 | ~427 | 0 | 6 | ~423 | 38 | ~533 |
| Queue Length 95th (ft) | #222 | #618 | 60 | 23 | #554 | 72 | #671 |
| Internal Link Dist (ft) | 665 | 870 | | | 1430 | | 421 |
| Turn Bay Length (ft) | | | | 70 | | 350 | |
| Base Capacity (vph) | 179 | 375 | 901 | 66 | 873 | 210 | 1290 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.82 | 1.18 | 0.40 | 0.18 | 1.20 | 0.48 | 1.09 |

Intersection Summary

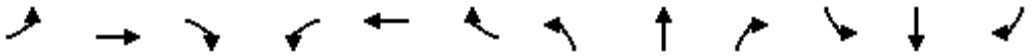
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 69 | 40 | 16 | 278 | 125 | 328 | 11 | 795 | 145 | 93 | 1078 | 235 |
| Future Volume (vph) | 69 | 40 | 16 | 278 | 125 | 328 | 11 | 795 | 145 | 93 | 1078 | 235 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 14 | 12 | 12 | 13 | 16 | 10 | 11 | 12 | 13 | 12 | 12 |
| Total Lost time (s) | | 5.0 | | | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | 1.00 | 1.00 | 0.95 | | 1.00 | 0.95 | |
| Frpb, ped/bikes | | 0.99 | | | 1.00 | 1.00 | 1.00 | 0.99 | | 1.00 | 0.96 | |
| Flpb, ped/bikes | | 1.00 | | | 0.98 | 1.00 | 0.98 | 1.00 | | 1.00 | 1.00 | |
| Frt | | 0.98 | | | 1.00 | 0.85 | 1.00 | 0.98 | | 1.00 | 0.97 | |
| Flt Protected | | 0.97 | | | 0.97 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 1640 | | | 1674 | 1569 | 1489 | 2960 | | 1568 | 2953 | |
| Flt Permitted | | 0.34 | | | 0.71 | 1.00 | 0.15 | 1.00 | | 0.15 | 1.00 | |
| Satd. Flow (perm) | | 570 | | | 1226 | 1569 | 229 | 2960 | | 241 | 2953 | |
| Peak-hour factor, PHF | 0.85 | 0.85 | 0.85 | 0.91 | 0.91 | 0.91 | 0.90 | 0.90 | 0.90 | 0.93 | 0.93 | 0.93 |
| Adj. Flow (vph) | 81 | 47 | 19 | 305 | 137 | 360 | 12 | 883 | 161 | 100 | 1159 | 253 |
| RTOR Reduction (vph) | 0 | 5 | 0 | 0 | 0 | 199 | 0 | 15 | 0 | 0 | 19 | 0 |
| Lane Group Flow (vph) | 0 | 142 | 0 | 0 | 442 | 161 | 12 | 1029 | 0 | 100 | 1393 | 0 |
| Confl. Peds. (#/hr) | 21 | | 33 | 33 | | 21 | 138 | | 34 | 34 | | 138 |
| Confl. Bikes (#/hr) | | | 1 | | | 1 | | | 2 | | | 25 |
| Heavy Vehicles (%) | 6% | 3% | 8% | 0% | 1% | 5% | 0% | 3% | 2% | 7% | 3% | 4% |
| Turn Type | Perm | NA | | Perm | NA | pt+ov | Perm | NA | | D.P+P | NA | |
| Protected Phases | | 5 | | | 5 | 5 4 | | 1 | | 4 | 1 4 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 30.8 | | | 30.8 | 44.8 | 27.4 | 27.4 | | 36.4 | 41.4 | |
| Effective Green, g (s) | | 30.8 | | | 30.8 | 44.8 | 27.4 | 27.4 | | 36.4 | 41.4 | |
| Actuated g/C Ratio | | 0.31 | | | 0.31 | 0.45 | 0.27 | 0.27 | | 0.36 | 0.41 | |
| Clearance Time (s) | | 5.0 | | | 5.0 | | 5.0 | 5.0 | | 5.0 | | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | | 2.0 | 2.0 | | 2.0 | | |
| Lane Grp Cap (vph) | | 175 | | | 377 | 702 | 62 | 811 | | 207 | 1222 | |
| v/s Ratio Prot | | | | | | 0.10 | | c0.35 | | 0.04 | c0.47 | |
| v/s Ratio Perm | | 0.25 | | | c0.36 | | 0.05 | | | 0.13 | | |
| v/c Ratio | | 0.81 | | | 1.17 | 0.23 | 0.19 | 1.27 | | 0.48 | 1.14 | |
| Uniform Delay, d1 | | 31.9 | | | 34.6 | 17.0 | 27.8 | 36.3 | | 24.5 | 29.3 | |
| Progression Factor | | 1.00 | | | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 23.0 | | | 102.2 | 0.1 | 6.8 | 130.5 | | 0.6 | 73.2 | |
| Delay (s) | | 55.0 | | | 136.8 | 17.0 | 34.7 | 166.8 | | 25.2 | 102.5 | |
| Level of Service | | D | | | F | B | C | F | | C | F | |
| Approach Delay (s) | | 55.0 | | | 83.1 | | | 165.3 | | | 97.4 | |
| Approach LOS | | D | | | F | | | F | | | F | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 112.7 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 1.04 | | |
| Actuated Cycle Length (s) | 100.0 | Sum of lost time (s) | 19.0 |
| Intersection Capacity Utilization | 98.5% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

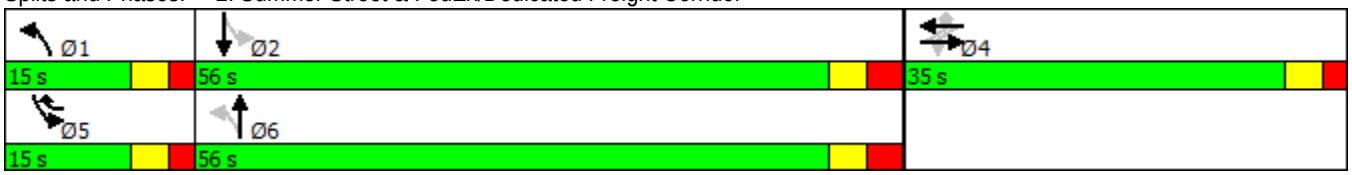


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 21 | 0 | 5 | 16 | 0 | 10 | 5 | 918 | 5 | 0 | 1356 | 16 |
| Future Volume (vph) | 21 | 0 | 5 | 16 | 0 | 10 | 5 | 918 | 5 | 0 | 1356 | 16 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 13 | 13 | 13 | 12 | 12 | 12 | 10 | 10 | 10 | 11 | 11 | 11 |
| Storage Length (ft) | 0 | | 0 | 0 | | 60 | 60 | | 0 | 120 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 50 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Frt | | 0.976 | | | | 0.850 | | 0.999 | | | 0.998 | |
| Flt Protected | | 0.961 | | | 0.950 | | 0.950 | | | | | |
| Satd. Flow (prot) | 0 | 1657 | 0 | 0 | 1624 | 727 | 1516 | 3029 | 0 | 826 | 3044 | 0 |
| Flt Permitted | | 0.752 | | | 0.739 | | 0.139 | | | | | |
| Satd. Flow (perm) | 0 | 1297 | 0 | 0 | 1264 | 727 | 222 | 3029 | 0 | 826 | 3044 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 82 | | | | 31 | | 1 | | | 1 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 228 | | | 352 | | | 665 | | | 1510 | |
| Travel Time (s) | | 5.2 | | | 8.0 | | | 15.1 | | | 34.3 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 100% | 0% | 0% | 0% | 100% | 3% | 0% |
| Adj. Flow (vph) | 23 | 0 | 5 | 17 | 0 | 11 | 5 | 998 | 5 | 0 | 1474 | 17 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 28 | 0 | 0 | 17 | 11 | 5 | 1003 | 0 | 0 | 1491 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 12 | | | 11 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.10 | 1.10 | 1.10 | 1.14 | 1.14 | 1.14 | 1.25 | 1.25 | 1.25 | 1.19 | 1.19 | 1.19 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | 20 | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | 20 | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | pm+ov | pm+pt | NA | | pm+pt | NA | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Protected Phases | | 4 | | | 4 | 5 | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 4 | | | 4 | | 4 | 6 | 6 | | 2 | | |
| Detector Phase | 4 | 4 | | 4 | 4 | 5 | 1 | 6 | | 5 | 2 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 6.0 | 6.0 | | 6.0 | 6.0 | 6.0 | 6.0 | 10.0 | | 6.0 | 10.0 | |
| Minimum Split (s) | 26.0 | 26.0 | | 26.0 | 26.0 | 11.0 | 11.0 | 24.0 | | 11.0 | 24.0 | |
| Total Split (s) | 35.0 | 35.0 | | 35.0 | 35.0 | 15.0 | 15.0 | 56.0 | | 15.0 | 56.0 | |
| Total Split (%) | 33.0% | 33.0% | | 33.0% | 33.0% | 14.2% | 14.2% | 52.8% | | 14.2% | 52.8% | |
| Maximum Green (s) | 30.0 | 30.0 | | 30.0 | 30.0 | 10.0 | 10.0 | 50.0 | | 10.0 | 50.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 3.0 | | 2.0 | 3.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | 5.0 | 5.0 | 6.0 | | 5.0 | 6.0 | |
| Lead/Lag | | | | | | Lead | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | None | None | | None | None | None | None | Ped | | None | Max | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | | 7.0 | | | | |
| Flash Dont Walk (s) | 14.0 | 14.0 | | 14.0 | 14.0 | | | 9.0 | | | | |
| Pedestrian Calls (#/hr) | 10 | 10 | | 10 | 10 | | | 10 | | | | |
| Act Effct Green (s) | | 8.5 | | | 8.5 | 15.1 | 59.0 | 59.5 | | | 59.5 | |
| Actuated g/C Ratio | | 0.12 | | | 0.12 | 0.20 | 0.80 | 0.81 | | | 0.81 | |
| v/c Ratio | | 0.13 | | | 0.12 | 0.06 | 0.02 | 0.41 | | | 0.61 | |
| Control Delay | | 1.2 | | | 30.4 | 2.4 | 4.0 | 6.2 | | | 9.1 | |
| Queue Delay | | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | | | 0.0 | |
| Total Delay | | 1.2 | | | 30.4 | 2.4 | 4.0 | 6.2 | | | 9.1 | |
| LOS | | A | | | C | A | A | A | | | A | |
| Approach Delay | | 1.2 | | | 19.4 | | | 6.2 | | | 9.1 | |
| Approach LOS | | A | | | B | | | A | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 106 | | | |
| Actuated Cycle Length: 73.8 | | | |
| Natural Cycle: 90 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 0.61 | | | |
| Intersection Signal Delay: 8.0 | | Intersection LOS: A | |
| Intersection Capacity Utilization 59.7% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 2: Summer Street & FedEx/Dedicated Freight Corridor

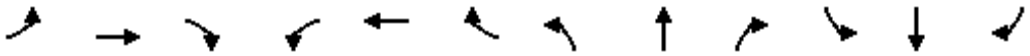




| Lane Group | EBT | WBT | WBR | NBL | NBT | SBT |
|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 28 | 17 | 11 | 5 | 1003 | 1491 |
| v/c Ratio | 0.13 | 0.12 | 0.06 | 0.02 | 0.41 | 0.61 |
| Control Delay | 1.2 | 30.4 | 2.4 | 4.0 | 6.2 | 9.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 1.2 | 30.4 | 2.4 | 4.0 | 6.2 | 9.1 |
| Queue Length 50th (ft) | 0 | 7 | 0 | 1 | 60 | 117 |
| Queue Length 95th (ft) | 0 | 25 | 4 | 4 | 266 | #572 |
| Internal Link Dist (ft) | 148 | 272 | | | 585 | 1430 |
| Turn Bay Length (ft) | | | 60 | 60 | | |
| Base Capacity (vph) | 583 | 521 | 211 | 357 | 2441 | 2453 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.05 | 0.03 | 0.05 | 0.01 | 0.41 | 0.61 |

Intersection Summary

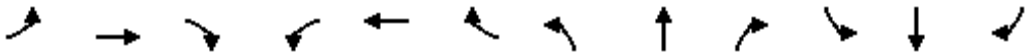
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 21 | 0 | 5 | 16 | 0 | 10 | 5 | 918 | 5 | 0 | 1356 | 16 |
| Future Volume (vph) | 21 | 0 | 5 | 16 | 0 | 10 | 5 | 918 | 5 | 0 | 1356 | 16 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 13 | 13 | 13 | 12 | 12 | 12 | 10 | 10 | 10 | 11 | 11 | 11 |
| Total Lost time (s) | | 5.0 | | | 5.0 | 5.0 | 5.0 | 6.0 | | | 6.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | 1.00 | 1.00 | 0.95 | | | 0.95 | |
| Frt | | 0.98 | | | 1.00 | 0.85 | 1.00 | 1.00 | | | 1.00 | |
| Flt Protected | | 0.96 | | | 0.95 | 1.00 | 0.95 | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | | 1656 | | | 1624 | 727 | 1516 | 3030 | | | 3045 | |
| Flt Permitted | | 0.75 | | | 0.74 | 1.00 | 0.14 | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | | 1298 | | | 1264 | 727 | 222 | 3030 | | | 3045 | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 23 | 0 | 5 | 17 | 0 | 11 | 5 | 998 | 5 | 0 | 1474 | 17 |
| RTOR Reduction (vph) | 0 | 26 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 2 | 0 | 0 | 17 | 1 | 5 | 1003 | 0 | 0 | 1491 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 100% | 0% | 0% | 0% | 100% | 3% | 0% |
| Turn Type | Perm | NA | | Perm | NA | pm+ov | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | | 4 | | | 4 | 5 | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 4 | | | 4 | | 4 | 6 | 6 | | 2 | | |
| Actuated Green, G (s) | | 6.0 | | | 6.0 | 7.0 | 58.0 | 57.0 | | | 57.0 | |
| Effective Green, g (s) | | 6.0 | | | 6.0 | 7.0 | 58.0 | 57.0 | | | 57.0 | |
| Actuated g/C Ratio | | 0.08 | | | 0.08 | 0.09 | 0.72 | 0.71 | | | 0.71 | |
| Clearance Time (s) | | 5.0 | | | 5.0 | 5.0 | 5.0 | 6.0 | | | 6.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | 2.0 | 2.0 | 2.0 | | | 2.0 | |
| Lane Grp Cap (vph) | | 97 | | | 94 | 109 | 177 | 2158 | | | 2169 | |
| v/s Ratio Prot | | | | | | c0.00 | 0.00 | 0.33 | | | c0.49 | |
| v/s Ratio Perm | | 0.00 | | | c0.01 | 0.00 | 0.02 | | | | | |
| v/c Ratio | | 0.02 | | | 0.18 | 0.01 | 0.03 | 0.46 | | | 0.69 | |
| Uniform Delay, d1 | | 34.3 | | | 34.7 | 33.3 | 3.9 | 4.9 | | | 6.5 | |
| Progression Factor | | 1.00 | | | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 0.0 | | | 0.3 | 0.0 | 0.0 | 0.1 | | | 1.8 | |
| Delay (s) | | 34.3 | | | 35.0 | 33.3 | 3.9 | 5.0 | | | 8.3 | |
| Level of Service | | C | | | D | C | A | A | | | A | |
| Approach Delay (s) | | 34.3 | | | 34.4 | | | 5.0 | | | 8.3 | |
| Approach LOS | | C | | | C | | | A | | | A | |

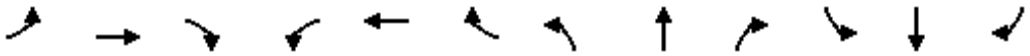
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 7.6 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.63 | | |
| Actuated Cycle Length (s) | 80.0 | Sum of lost time (s) | 16.0 |
| Intersection Capacity Utilization | 59.7% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 16 | 0 | 11 | 69 | 0 | 150 | 0 | 752 | 52 | 112 | 1223 | 11 |
| Future Volume (vph) | 16 | 0 | 11 | 69 | 0 | 150 | 0 | 752 | 52 | 112 | 1223 | 11 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 14 | 12 | 12 | 12 | 12 | 12 | 10 | 10 | 12 | 12 | 10 | 10 |
| Storage Length (ft) | 0 | | 0 | 0 | | 100 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.945 | | | | 0.850 | | 0.991 | | | 0.999 | |
| Flt Protected | | 0.971 | | | 0.950 | | | | | | 0.996 | |
| Satd. Flow (prot) | 0 | 1515 | 0 | 0 | 1624 | 1454 | 0 | 2950 | 0 | 0 | 2964 | 0 |
| Flt Permitted | | 0.971 | | | 0.950 | | | | | | 0.996 | |
| Satd. Flow (perm) | 0 | 1515 | 0 | 0 | 1624 | 1454 | 0 | 2950 | 0 | 0 | 2964 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 384 | | | 327 | | | 365 | | | 665 | |
| Travel Time (s) | | 8.7 | | | 7.4 | | | 8.3 | | | 15.1 | |
| Confl. Peds. (#/hr) | | | | | | | 153 | | | | | 153 |
| Confl. Bikes (#/hr) | | | | | | | | | | | | 34 |
| Peak Hour Factor | 0.65 | 0.92 | 0.65 | 0.92 | 0.92 | 0.92 | 0.85 | 0.85 | 0.92 | 0.92 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 6% | 0% | 0% | 0% | 0% | 0% | 0% | 2% | 0% | 0% | 2% | 0% |
| Parking (#/hr) | | | | | | | 1 | | | | | 1 |
| Adj. Flow (vph) | 25 | 0 | 17 | 75 | 0 | 163 | 0 | 885 | 57 | 122 | 1274 | 11 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 42 | 0 | 0 | 75 | 163 | 0 | 942 | 0 | 0 | 1407 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 10 | | | 10 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.05 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.25 | 1.25 | 1.14 | 1.14 | 1.25 | 1.25 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |

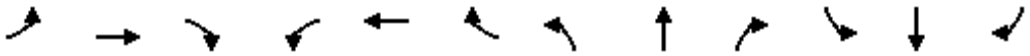
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 85.0% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 16 | 0 | 11 | 69 | 0 | 150 | 0 | 752 | 52 | 112 | 1223 | 11 |
| Future Volume (Veh/h) | 16 | 0 | 11 | 69 | 0 | 150 | 0 | 752 | 52 | 112 | 1223 | 11 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.65 | 0.92 | 0.65 | 0.92 | 0.92 | 0.92 | 0.85 | 0.85 | 0.92 | 0.92 | 0.96 | 0.96 |
| Hourly flow rate (vph) | 25 | 0 | 17 | 75 | 0 | 163 | 0 | 885 | 57 | 122 | 1274 | 11 |
| Pedestrians | | 153 | | | | | | | | | | |
| Lane Width (ft) | | 12.0 | | | | | | | | | | |
| Walking Speed (ft/s) | | 4.0 | | | | | | | | | | |
| Percent Blockage | | 13 | | | | | | | | | | |
| Right turn flare (veh) | | | | | | 4 | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | 365 | | | 665 | |
| pX, platoon unblocked | 0.82 | 0.82 | 0.75 | 0.82 | 0.82 | 0.85 | 0.75 | | | 0.85 | | |
| vC, conflicting volume | 2119 | 2618 | 796 | 1812 | 2596 | 471 | 1438 | | | 942 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1115 | 1726 | 41 | 740 | 1697 | 35 | 904 | | | 587 | | |
| tC, single (s) | 7.6 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.6 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 66 | 100 | 97 | 62 | 100 | 82 | 100 | | | 86 | | |
| cM capacity (veh/h) | 74 | 55 | 668 | 198 | 57 | 884 | 495 | | | 851 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | SB 1 | SB 2 |
|---|---|---|---|---|---|---|
| Volume Total | 42 | 238 | 442 | 500 | 759 | 648 |
| Volume Left | 25 | 75 | 0 | 0 | 122 | 0 |
| Volume Right | 17 | 163 | 0 | 57 | 0 | 11 |
| cSH | 115 | 630 | 495 | 1700 | 851 | 1700 |
| Volume to Capacity | 0.36 | 0.38 | 0.00 | 0.29 | 0.14 | 0.38 |
| Queue Length 95th (ft) | 37 | 44 | 0 | 0 | 12 | 0 |
| Control Delay (s) | 53.0 | 17.5 | 0.0 | 0.0 | 3.5 | 0.0 |
| Lane LOS | F | C | | | A | |
| Approach Delay (s) | 53.0 | 17.5 | 0.0 | | 1.9 | |
| Approach LOS | F | C | | | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 3.4 | | | |
| Intersection Capacity Utilization | 85.0% | ICU Level of Service | E | |
| Analysis Period (min) | 15 | | | |



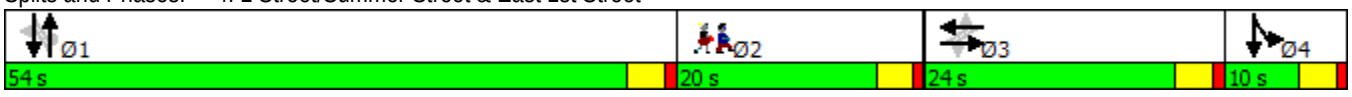
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 45 | 116 | 64 | 40 | 57 | 163 | 27 | 591 | 34 | 294 | 850 | 158 |
| Future Volume (vph) | 45 | 116 | 64 | 40 | 57 | 163 | 27 | 591 | 34 | 294 | 850 | 158 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 15 | 12 | 12 | 16 | 12 | 12 | 9 | 12 | 12 | 12 | 12 |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 100 | | 0 | 100 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Ped Bike Factor | | 0.96 | | | 0.96 | | | 1.00 | | | 0.98 | |
| Frt | | 0.962 | | | 0.915 | | | 0.992 | | | 0.982 | |
| Flt Protected | | 0.990 | | | 0.992 | | | 0.998 | | | 0.989 | |
| Satd. Flow (prot) | 0 | 1661 | 0 | 0 | 1615 | 0 | 0 | 2876 | 0 | 0 | 3033 | 0 |
| Flt Permitted | | 0.701 | | | 0.819 | | | 0.770 | | | 0.599 | |
| Satd. Flow (perm) | 0 | 1172 | 0 | 0 | 1325 | 0 | 0 | 2218 | 0 | 0 | 1831 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 16 | | | 69 | | | 7 | | | 21 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 540 | | | 576 | | | 340 | | | 365 | |
| Travel Time (s) | | 12.3 | | | 13.1 | | | 7.7 | | | 8.3 | |
| Confl. Peds. (#/hr) | 29 | | 36 | 36 | | 29 | 134 | | 51 | 51 | | 134 |
| Confl. Bikes (#/hr) | | | 12 | | | 1 | | | | | | 19 |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.85 | 0.85 | 0.85 | 0.88 | 0.88 | 0.88 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 13% | 1% | 2% | 0% | 5% | 6% | 0% | 0% | 5% | 1% | 2% | 4% |
| Adj. Flow (vph) | 52 | 135 | 74 | 47 | 67 | 192 | 31 | 672 | 39 | 327 | 944 | 176 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 261 | 0 | 0 | 306 | 0 | 0 | 742 | 0 | 0 | 1447 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.01 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 1.30 | 1.14 | 1.14 | 1.14 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |

| Lane Group | Ø2 |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | |
| Future Volume (vph) | |
| Ideal Flow (vphpl) | |
| Lane Width (ft) | |
| Storage Length (ft) | |
| Storage Lanes | |
| Taper Length (ft) | |
| Lane Util. Factor | |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Right Turn on Red | |
| Satd. Flow (RTOR) | |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | |
| Heavy Vehicles (%) | |
| Adj. Flow (vph) | |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | |
| Enter Blocked Intersection | |
| Lane Alignment | |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | |
| Turning Speed (mph) | |
| Number of Detectors | |
| Detector Template | |
| Leading Detector (ft) | |
| Trailing Detector (ft) | |
| Detector 1 Position(ft) | |
| Detector 1 Size(ft) | |
| Detector 1 Type | |
| Detector 1 Channel | |
| Detector 1 Extend (s) | |
| Detector 1 Queue (s) | |
| Detector 1 Delay (s) | |
| Detector 2 Position(ft) | |
| Detector 2 Size(ft) | |
| Detector 2 Type | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | D.P+P | NA | |
| Protected Phases | | 3 | | | 3 | | | 1 | | 4 | 1 4 | |
| Permitted Phases | 3 | | | 3 | | | 1 | | | 1 | | |
| Detector Phase | 3 | 3 | | 3 | 3 | | 1 | 1 | | 4 | 1 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 10.0 | 10.0 | | 5.0 | | |
| Minimum Split (s) | 11.0 | 11.0 | | 11.0 | 11.0 | | 14.0 | 14.0 | | 9.0 | | |
| Total Split (s) | 24.0 | 24.0 | | 24.0 | 24.0 | | 54.0 | 54.0 | | 10.0 | | |
| Total Split (%) | 22.2% | 22.2% | | 22.2% | 22.2% | | 50.0% | 50.0% | | 9.3% | | |
| Maximum Green (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 50.0 | 50.0 | | 6.0 | | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | |
| Total Lost Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | | |
| Lead/Lag | Lead | Lead | | Lead | Lead | | Lead | Lead | | Lag | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 1.0 | | |
| Recall Mode | None | None | | None | None | | Max | Max | | None | | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 20.2 | | | 20.2 | | | 50.5 | | | 56.6 | |
| Actuated g/C Ratio | | 0.20 | | | 0.20 | | | 0.50 | | | 0.57 | |
| v/c Ratio | | 1.05 | | | 0.95 | | | 0.66 | | | 1.30 | |
| Control Delay | | 109.4 | | | 72.3 | | | 23.6 | | | 161.5 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 109.4 | | | 72.3 | | | 23.6 | | | 161.5 | |
| LOS | | F | | | E | | | C | | | F | |
| Approach Delay | | 109.4 | | | 72.3 | | | 23.6 | | | 161.5 | |
| Approach LOS | | F | | | E | | | C | | | F | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 108 | | | |
| Actuated Cycle Length: 100 | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 1.30 | | | |
| Intersection Signal Delay: 109.5 | | Intersection LOS: F | |
| Intersection Capacity Utilization 95.1% | | ICU Level of Service F | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 4: L Street/Summer Street & East 1st Street



| Lane Group | Ø2 |
|---|---|
| Detector 2 Channel | |
| Detector 2 Extend (s) | |
| Turn Type | |
| Protected Phases | 2 |
| Permitted Phases | |
| Detector Phase | |
| Switch Phase | |
| Minimum Initial (s) | 4.0 |
| Minimum Split (s) | 20.0 |
| Total Split (s) | 20.0 |
| Total Split (%) | 19% |
| Maximum Green (s) | 16.0 |
| Yellow Time (s) | 3.0 |
| All-Red Time (s) | 1.0 |
| Lost Time Adjust (s) | |
| Total Lost Time (s) | |
| Lead/Lag | Lag |
| Lead-Lag Optimize? | |
| Vehicle Extension (s) | 3.0 |
| Recall Mode | None |
| Walk Time (s) | 7.0 |
| Flash Dont Walk (s) | 9.0 |
| Pedestrian Calls (#/hr) | 31 |
| Act Effct Green (s) | |
| Actuated g/C Ratio | |
| v/c Ratio | |
| Control Delay | |
| Queue Delay | |
| Total Delay | |
| LOS | |
| Approach Delay | |
| Approach LOS | |

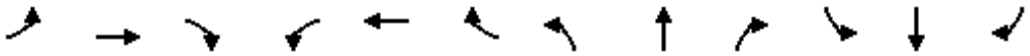
| Intersection Summary |
|---|

| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 261 | 306 | 742 | 1447 |
| v/c Ratio | 1.05 | 0.95 | 0.66 | 1.30 |
| Control Delay | 109.4 | 72.3 | 23.6 | 161.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 109.4 | 72.3 | 23.6 | 161.5 |
| Queue Length 50th (ft) | ~202 | ~176 | 209 | ~712 |
| Queue Length 95th (ft) | #342 | #322 | 275 | #852 |
| Internal Link Dist (ft) | 460 | 496 | 260 | 285 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 249 | 322 | 1123 | 1117 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 1.05 | 0.95 | 0.66 | 1.30 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

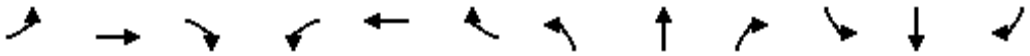
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 45 | 116 | 64 | 40 | 57 | 163 | 27 | 591 | 34 | 294 | 850 | 158 |
| Future Volume (vph) | 45 | 116 | 64 | 40 | 57 | 163 | 27 | 591 | 34 | 294 | 850 | 158 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 15 | 12 | 12 | 16 | 12 | 12 | 9 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | | | 0.95 | | | 0.95 | |
| Frpb, ped/bikes | | 0.96 | | | 0.96 | | | 1.00 | | | 0.98 | |
| Flpb, ped/bikes | | 1.00 | | | 0.99 | | | 1.00 | | | 1.00 | |
| Frt | | 0.96 | | | 0.92 | | | 0.99 | | | 0.98 | |
| Flt Protected | | 0.99 | | | 0.99 | | | 1.00 | | | 0.99 | |
| Satd. Flow (prot) | | 1659 | | | 1610 | | | 2875 | | | 3030 | |
| Flt Permitted | | 0.70 | | | 0.82 | | | 0.77 | | | 0.60 | |
| Satd. Flow (perm) | | 1175 | | | 1329 | | | 2219 | | | 1835 | |
| Peak-hour factor, PHF | 0.86 | 0.86 | 0.86 | 0.85 | 0.85 | 0.85 | 0.88 | 0.88 | 0.88 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 52 | 135 | 74 | 47 | 67 | 192 | 31 | 672 | 39 | 327 | 944 | 176 |
| RTOR Reduction (vph) | 0 | 13 | 0 | 0 | 55 | 0 | 0 | 4 | 0 | 0 | 9 | 0 |
| Lane Group Flow (vph) | 0 | 248 | 0 | 0 | 251 | 0 | 0 | 738 | 0 | 0 | 1438 | 0 |
| Confl. Peds. (#/hr) | 29 | | 36 | 36 | | 29 | 134 | | 51 | 51 | | 134 |
| Confl. Bikes (#/hr) | | | 12 | | | 1 | | | | | | 19 |
| Heavy Vehicles (%) | 13% | 1% | 2% | 0% | 5% | 6% | 0% | 0% | 5% | 1% | 2% | 4% |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | D.P+P | NA | |
| Protected Phases | | 3 | | | 3 | | | 1 | | 4 | 1 4 | |
| Permitted Phases | 3 | | | 3 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 20.2 | | | 20.2 | | | 50.5 | | | 56.6 | |
| Effective Green, g (s) | | 20.2 | | | 20.2 | | | 50.5 | | | 56.6 | |
| Actuated g/C Ratio | | 0.20 | | | 0.20 | | | 0.50 | | | 0.56 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | | | 3.0 | | | | |
| Lane Grp Cap (vph) | | 233 | | | 263 | | | 1101 | | | 1092 | |
| v/s Ratio Prot | | | | | | | | | | | c0.08 | |
| v/s Ratio Perm | | c0.21 | | | 0.19 | | | 0.33 | | | c0.65 | |
| v/c Ratio | | 1.07 | | | 0.95 | | | 0.67 | | | 1.32 | |
| Uniform Delay, d1 | | 40.8 | | | 40.3 | | | 19.3 | | | 22.6 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 77.2 | | | 42.5 | | | 3.3 | | | 149.0 | |
| Delay (s) | | 118.0 | | | 82.8 | | | 22.6 | | | 171.6 | |
| Level of Service | | F | | | F | | | C | | | F | |
| Approach Delay (s) | | 118.0 | | | 82.8 | | | 22.6 | | | 171.6 | |
| Approach LOS | | F | | | F | | | C | | | F | |

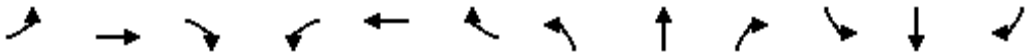
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 116.5 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 1.12 | | |
| Actuated Cycle Length (s) | 101.7 | Sum of lost time (s) | 16.0 |
| Intersection Capacity Utilization | 95.1% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 11 | 0 | 11 | 16 | 0 | 5 | 21 | 641 | 11 | 21 | 907 | 27 |
| Future Volume (vph) | 11 | 0 | 11 | 16 | 0 | 5 | 21 | 641 | 11 | 21 | 907 | 27 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 16 | 12 | 12 | 16 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.932 | | | 0.968 | | | 0.998 | | | 0.996 | |
| Flt Protected | | 0.976 | | | 0.963 | | | 0.998 | | | 0.999 | |
| Satd. Flow (prot) | 0 | 1452 | 0 | 0 | 1488 | 0 | 0 | 1912 | 0 | 0 | 1890 | 0 |
| Flt Permitted | | 0.976 | | | 0.963 | | | 0.998 | | | 0.999 | |
| Satd. Flow (perm) | 0 | 1452 | 0 | 0 | 1488 | 0 | 0 | 1912 | 0 | 0 | 1890 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 429 | | | 453 | | | 298 | | | 340 | |
| Travel Time (s) | | 9.8 | | | 10.3 | | | 6.8 | | | 7.7 | |
| Confl. Peds. (#/hr) | 33 | | 15 | 15 | | 33 | 131 | | 44 | 44 | | 131 |
| Confl. Bikes (#/hr) | | | 1 | | | | | | 1 | | | 18 |
| Peak Hour Factor | 0.50 | 0.50 | 0.50 | 0.86 | 0.86 | 0.86 | 0.89 | 0.89 | 0.89 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% | 0% | 0% | 2% | 4% |
| Adj. Flow (vph) | 22 | 0 | 22 | 19 | 0 | 6 | 24 | 720 | 12 | 23 | 986 | 29 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 44 | 0 | 0 | 25 | 0 | 0 | 756 | 0 | 0 | 1038 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.25 | 1.14 | 1.14 | 1.25 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 0.97 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 81.6% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |

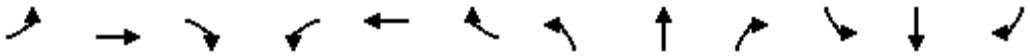


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 11 | 0 | 11 | 16 | 0 | 5 | 21 | 641 | 11 | 21 | 907 | 27 |
| Future Volume (Veh/h) | 11 | 0 | 11 | 16 | 0 | 5 | 21 | 641 | 11 | 21 | 907 | 27 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.50 | 0.50 | 0.50 | 0.86 | 0.86 | 0.86 | 0.89 | 0.89 | 0.89 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 22 | 0 | 22 | 19 | 0 | 6 | 24 | 720 | 12 | 23 | 986 | 29 |
| Pedestrians | | 131 | | | 44 | | | 15 | | | 33 | |
| Lane Width (ft) | | 10.0 | | | 10.0 | | | 16.0 | | | 16.0 | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Percent Blockage | | 9 | | | 3 | | | 2 | | | 4 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | 602 | | | 340 | |
| pX, platoon unblocked | 0.66 | 0.66 | 0.55 | 0.66 | 0.66 | 0.78 | 0.55 | | | 0.78 | | |
| vC, conflicting volume | 1990 | 2002 | 1146 | 1902 | 2010 | 803 | 1146 | | | 776 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1510 | 1526 | 855 | 1374 | 1539 | 612 | 854 | | | 577 | | |
| tC, single (s) | *4.0 | 6.5 | *4.0 | *4.0 | 6.5 | *4.0 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 88 | 100 | 93 | 90 | 100 | 99 | 94 | | | 97 | | |
| cM capacity (veh/h) | 177 | 63 | 298 | 199 | 61 | 529 | 396 | | | 765 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 44 | 25 | 756 | 1038 |
| Volume Left | 22 | 19 | 24 | 23 |
| Volume Right | 22 | 6 | 12 | 29 |
| cSH | 222 | 234 | 396 | 765 |
| Volume to Capacity | 0.20 | 0.11 | 0.06 | 0.03 |
| Queue Length 95th (ft) | 18 | 9 | 5 | 2 |
| Control Delay (s) | 25.2 | 22.2 | 2.0 | 0.9 |
| Lane LOS | D | C | A | A |
| Approach Delay (s) | 25.2 | 22.2 | 2.0 | 0.9 |
| Approach LOS | D | C | | |

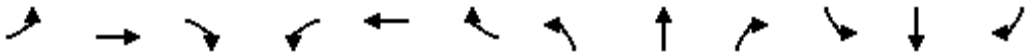
| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 2.2 | | | |
| Intersection Capacity Utilization | 81.6% | ICU Level of Service | D | |
| Analysis Period (min) | 15 | | | |

* User Entered Value



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 21 | 11 | 16 | 0 | 11 | 16 | 11 | 631 | 11 | 16 | 896 | 21 |
| Future Volume (vph) | 21 | 11 | 16 | 0 | 11 | 16 | 11 | 631 | 11 | 16 | 896 | 21 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 16 | 12 | 12 | 16 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.954 | | | 0.920 | | | 0.998 | | | 0.997 | |
| Flt Protected | | 0.979 | | | | | | 0.999 | | | 0.999 | |
| Satd. Flow (prot) | 0 | 1342 | 0 | 0 | 1321 | 0 | 0 | 1910 | 0 | 0 | 1894 | 0 |
| Flt Permitted | | 0.979 | | | | | | 0.999 | | | 0.999 | |
| Satd. Flow (perm) | 0 | 1342 | 0 | 0 | 1321 | 0 | 0 | 1910 | 0 | 0 | 1894 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 638 | | | 716 | | | 304 | | | 298 | |
| Travel Time (s) | | 14.5 | | | 16.3 | | | 6.9 | | | 6.8 | |
| Confl. Peds. (#/hr) | 23 | | 27 | 27 | | 23 | 117 | | 70 | 70 | | 117 |
| Confl. Bikes (#/hr) | | | | | | | | | 1 | | | 15 |
| Peak Hour Factor | 0.67 | 0.67 | 0.67 | 0.63 | 0.63 | 0.63 | 0.86 | 0.86 | 0.86 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% | 13% | 0% | 2% | 0% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | | | | | |
| Adj. Flow (vph) | 31 | 16 | 24 | 0 | 17 | 25 | 13 | 734 | 13 | 17 | 943 | 22 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 71 | 0 | 0 | 42 | 0 | 0 | 760 | 0 | 0 | 982 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 0.97 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 82.4% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |

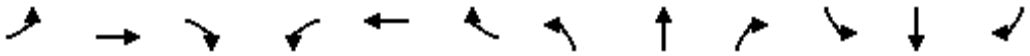


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 21 | 11 | 16 | 0 | 11 | 16 | 11 | 631 | 11 | 16 | 896 | 21 |
| Future Volume (Veh/h) | 21 | 11 | 16 | 0 | 11 | 16 | 11 | 631 | 11 | 16 | 896 | 21 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.67 | 0.67 | 0.67 | 0.63 | 0.63 | 0.63 | 0.86 | 0.86 | 0.86 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 31 | 16 | 24 | 0 | 17 | 25 | 13 | 734 | 13 | 17 | 943 | 22 |
| Pedestrians | | 117 | | | 70 | | | 27 | | | 23 | |
| Lane Width (ft) | | 10.0 | | | 10.0 | | | 16.0 | | | 16.0 | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Percent Blockage | | 8 | | | 5 | | | 3 | | | 3 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | 304 | | | 638 | |
| pX, platoon unblocked | 0.66 | 0.66 | 0.56 | 0.66 | 0.66 | 0.79 | 0.56 | | | 0.79 | | |
| vC, conflicting volume | 1928 | 1948 | 1098 | 1884 | 1952 | 834 | 1082 | | | 817 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1435 | 1465 | 777 | 1367 | 1472 | 657 | 748 | | | 636 | | |
| tC, single (s) | *4.0 | *4.0 | *4.0 | 7.1 | *4.0 | *4.0 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 82 | 92 | 92 | 100 | 91 | 95 | 97 | | | 98 | | |
| cM capacity (veh/h) | 177 | 196 | 319 | 58 | 195 | 513 | 444 | | | 720 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 71 | 42 | 760 | 982 |
| Volume Left | 31 | 0 | 13 | 17 |
| Volume Right | 24 | 25 | 13 | 22 |
| cSH | 214 | 309 | 444 | 720 |
| Volume to Capacity | 0.33 | 0.14 | 0.03 | 0.02 |
| Queue Length 95th (ft) | 35 | 12 | 2 | 2 |
| Control Delay (s) | 30.0 | 18.5 | 0.9 | 0.7 |
| Lane LOS | D | C | A | A |
| Approach Delay (s) | 30.0 | 18.5 | 0.9 | 0.7 |
| Approach LOS | D | C | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 2.3 | | | |
| Intersection Capacity Utilization | 82.4% | ICU Level of Service | E | |
| Analysis Period (min) | 15 | | | |

* User Entered Value



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 53 | 144 | 53 | 11 | 155 | 44 | 80 | 544 | 27 | 71 | 630 | 205 |
| Future Volume (vph) | 53 | 144 | 53 | 11 | 155 | 44 | 80 | 544 | 27 | 71 | 630 | 205 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 11 | 12 | 12 | 16 | 12 | 10 | 10 | 10 | 10 | 10 | 10 |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 0 | | 250 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 0 | | 1 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 0.95 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Ped Bike Factor | | 0.94 | | | 0.96 | | | 1.00 | | | 0.97 | |
| Frt | | 0.968 | | | 0.972 | | | 0.994 | | | 0.966 | |
| Flt Protected | | 0.989 | | | 0.997 | | | 0.994 | | | 0.996 | |
| Satd. Flow (prot) | 0 | 2590 | 0 | 0 | 1564 | 0 | 0 | 2837 | 0 | 0 | 2649 | 0 |
| Flt Permitted | | 0.696 | | | 0.975 | | | 0.558 | | | 0.699 | |
| Satd. Flow (perm) | 0 | 1797 | 0 | 0 | 1517 | 0 | 0 | 1589 | 0 | 0 | 1857 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 642 | | | 187 | | | 618 | | | 304 | |
| Travel Time (s) | | 14.6 | | | 4.3 | | | 14.0 | | | 6.9 | |
| Confl. Peds. (#/hr) | 61 | | 89 | 89 | | 61 | 154 | | 61 | 61 | | 154 |
| Confl. Bikes (#/hr) | | | 7 | | | 1 | | | 1 | | | 6 |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.88 | 0.88 | 0.88 | 0.86 | 0.86 | 0.86 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 2% | 9% | 0% | 0% | 6% | 0% | 0% | 0% | 3% | 13% | 0% | 1% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Adj. Flow (vph) | 60 | 162 | 60 | 13 | 176 | 50 | 93 | 633 | 31 | 76 | 677 | 220 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 282 | 0 | 0 | 239 | 0 | 0 | 757 | 0 | 0 | 973 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.27 | 1.14 | 1.14 | 1.12 | 1.14 | 1.25 | 1.33 | 1.25 | 1.25 | 1.33 | 1.25 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |

| Lane Group | Ø2 |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | |
| Future Volume (vph) | |
| Ideal Flow (vphpl) | |
| Lane Width (ft) | |
| Storage Length (ft) | |
| Storage Lanes | |
| Taper Length (ft) | |
| Lane Util. Factor | |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Right Turn on Red | |
| Satd. Flow (RTOR) | |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | |
| Heavy Vehicles (%) | |
| Parking (#/hr) | |
| Adj. Flow (vph) | |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | |
| Enter Blocked Intersection | |
| Lane Alignment | |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | |
| Turning Speed (mph) | |
| Number of Detectors | |
| Detector Template | |
| Leading Detector (ft) | |
| Trailing Detector (ft) | |
| Detector 1 Position(ft) | |
| Detector 1 Size(ft) | |
| Detector 1 Type | |
| Detector 1 Channel | |
| Detector 1 Extend (s) | |
| Detector 1 Queue (s) | |
| Detector 1 Delay (s) | |
| Detector 2 Position(ft) | |
| Detector 2 Size(ft) | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | D.P+P | NA | | Perm | NA | | D.P+P | NA | | Perm | NA | |
| Protected Phases | 3 | 3 4 | | | 4 | | 5 | 1 5 | | | 1 | |
| Permitted Phases | 4 | | | 4 | | | 1 | | | 1 | | |
| Detector Phase | 3 | 3 4 | | 4 | 4 | | 5 | 1 5 | | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | | | 10.0 | 10.0 | | 6.0 | | | 30.0 | 30.0 | |
| Minimum Split (s) | 10.0 | | | 14.0 | 14.0 | | 10.0 | | | 34.0 | 34.0 | |
| Total Split (s) | 11.0 | | | 34.0 | 34.0 | | 19.0 | | | 54.0 | 54.0 | |
| Total Split (%) | 7.7% | | | 23.9% | 23.9% | | 13.4% | | | 38.0% | 38.0% | |
| Maximum Green (s) | 6.0 | | | 30.0 | 30.0 | | 15.0 | | | 50.0 | 50.0 | |
| Yellow Time (s) | 3.0 | | | 3.0 | 3.0 | | 3.0 | | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | | | 1.0 | 1.0 | | 1.0 | | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | | | | | 0.0 | | | | | | 0.0 | |
| Total Lost Time (s) | | | | | 4.0 | | | | | | 4.0 | |
| Lead/Lag | Lead | | | Lag | Lag | | | | | Lead | Lead | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | | | 2.0 | 2.0 | | 2.0 | | | 2.0 | 2.0 | |
| Recall Mode | Max | | | Max | Max | | Max | | | Max | Max | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 35.2 | | | 30.2 | | | 65.4 | | | 50.3 | |
| Actuated g/C Ratio | | 0.26 | | | 0.22 | | | 0.48 | | | 0.37 | |
| v/c Ratio | | 0.57 | | | 0.72 | | | 0.85 | | | 1.43 | |
| Control Delay | | 48.0 | | | 64.3 | | | 38.3 | | | 236.4 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 48.0 | | | 64.3 | | | 38.3 | | | 236.4 | |
| LOS | | D | | | E | | | D | | | F | |
| Approach Delay | | 48.0 | | | 64.3 | | | 38.3 | | | 236.4 | |
| Approach LOS | | D | | | E | | | D | | | F | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 142 | | | |
| Actuated Cycle Length: 137.2 | | | |
| Natural Cycle: 145 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 1.43 | | | |
| Intersection Signal Delay: 127.9 | | Intersection LOS: F | |
| Intersection Capacity Utilization 92.6% | | ICU Level of Service F | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 7: L Street & E Broadway



| Lane Group | Ø2 |
|---|---|
| Detector 2 Type | |
| Detector 2 Channel | |
| Detector 2 Extend (s) | |
| Turn Type | |
| Protected Phases | 2 |
| Permitted Phases | |
| Detector Phase | |
| Switch Phase | |
| Minimum Initial (s) | 4.0 |
| Minimum Split (s) | 24.0 |
| Total Split (s) | 24.0 |
| Total Split (%) | 17% |
| Maximum Green (s) | 20.0 |
| Yellow Time (s) | 3.0 |
| All-Red Time (s) | 1.0 |
| Lost Time Adjust (s) | |
| Total Lost Time (s) | |
| Lead/Lag | Lag |
| Lead-Lag Optimize? | |
| Vehicle Extension (s) | 2.0 |
| Recall Mode | None |
| Walk Time (s) | 8.0 |
| Flash Dont Walk (s) | 12.0 |
| Pedestrian Calls (#/hr) | 46 |
| Act Effct Green (s) | |
| Actuated g/C Ratio | |
| v/c Ratio | |
| Control Delay | |
| Queue Delay | |
| Total Delay | |
| LOS | |
| Approach Delay | |
| Approach LOS | |

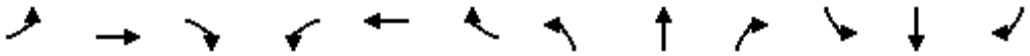
| Intersection Summary |
|---|

| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 282 | 239 | 757 | 973 |
| v/c Ratio | 0.57 | 0.72 | 0.85 | 1.43 |
| Control Delay | 48.0 | 64.3 | 38.3 | 236.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 48.0 | 64.3 | 38.3 | 236.4 |
| Queue Length 50th (ft) | 111 | 209 | 253 | ~652 |
| Queue Length 95th (ft) | 153 | #305 | 295 | #788 |
| Internal Link Dist (ft) | 562 | 107 | 538 | 224 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 495 | 333 | 894 | 680 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.57 | 0.72 | 0.85 | 1.43 |

Intersection Summary

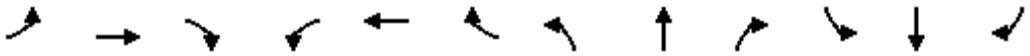
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



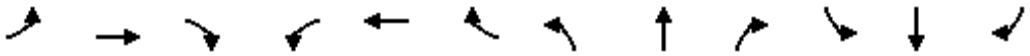
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 53 | 144 | 53 | 11 | 155 | 44 | 80 | 544 | 27 | 71 | 630 | 205 |
| Future Volume (vph) | 53 | 144 | 53 | 11 | 155 | 44 | 80 | 544 | 27 | 71 | 630 | 205 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 11 | 12 | 12 | 16 | 12 | 10 | 10 | 10 | 10 | 10 | 10 |
| Total Lost time (s) | | 5.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 0.95 | | | 1.00 | | | 0.95 | | | 0.95 | |
| Frpb, ped/bikes | | 0.96 | | | 0.97 | | | 1.00 | | | 0.97 | |
| Flpb, ped/bikes | | 0.99 | | | 0.99 | | | 1.00 | | | 1.00 | |
| Frt | | 0.97 | | | 0.97 | | | 0.99 | | | 0.97 | |
| Flt Protected | | 0.99 | | | 1.00 | | | 0.99 | | | 1.00 | |
| Satd. Flow (prot) | | 2570 | | | 1554 | | | 2833 | | | 2649 | |
| Flt Permitted | | 0.70 | | | 0.97 | | | 0.56 | | | 0.70 | |
| Satd. Flow (perm) | | 1809 | | | 1518 | | | 1591 | | | 1860 | |
| Peak-hour factor, PHF | 0.89 | 0.89 | 0.89 | 0.88 | 0.88 | 0.88 | 0.86 | 0.86 | 0.86 | 0.93 | 0.93 | 0.93 |
| Adj. Flow (vph) | 60 | 162 | 60 | 12 | 176 | 50 | 93 | 633 | 31 | 76 | 677 | 220 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 282 | 0 | 0 | 239 | 0 | 0 | 757 | 0 | 0 | 973 | 0 |
| Confl. Peds. (#/hr) | 61 | | 89 | 89 | | 61 | 154 | | 61 | 61 | | 154 |
| Confl. Bikes (#/hr) | | | 7 | | | 1 | | | 1 | | | 6 |
| Heavy Vehicles (%) | 2% | 9% | 0% | 0% | 6% | 0% | 0% | 0% | 3% | 13% | 0% | 1% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Turn Type | D.P+P | NA | | Perm | NA | | D.P+P | NA | | Perm | NA | |
| Protected Phases | 3 | 3 4 | | | 4 | | 5 | 1 5 | | | 1 | |
| Permitted Phases | 4 | | | 4 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 36.2 | | | 30.2 | | | 65.4 | | | 50.3 | |
| Effective Green, g (s) | | 36.2 | | | 30.2 | | | 65.4 | | | 50.3 | |
| Actuated g/C Ratio | | 0.26 | | | 0.22 | | | 0.47 | | | 0.36 | |
| Clearance Time (s) | | | | | 4.0 | | | | | | 4.0 | |
| Vehicle Extension (s) | | | | | 2.0 | | | | | | 2.0 | |
| Lane Grp Cap (vph) | | 507 | | | 331 | | | 889 | | | 677 | |
| v/s Ratio Prot | | c0.02 | | | | | | c0.09 | | | | |
| v/s Ratio Perm | | 0.12 | | | c0.16 | | | 0.31 | | | c0.52 | |
| v/c Ratio | | 0.56 | | | 0.72 | | | 0.85 | | | 1.44 | |
| Uniform Delay, d1 | | 44.0 | | | 50.1 | | | 32.1 | | | 43.9 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 4.4 | | | 12.8 | | | 10.1 | | | 205.1 | |
| Delay (s) | | 48.4 | | | 62.9 | | | 42.2 | | | 249.0 | |
| Level of Service | | D | | | E | | | D | | | F | |
| Approach Delay (s) | | 48.4 | | | 62.9 | | | 42.2 | | | 249.0 | |
| Approach LOS | | D | | | E | | | D | | | F | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 134.6 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 0.94 | | |
| Actuated Cycle Length (s) | 138.1 | Sum of lost time (s) | 21.0 |
| Intersection Capacity Utilization | 92.6% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 21 | 219 | 0 | 0 | 237 | 5 | 48 | 11 | 16 | 5 | 0 | 53 |
| Future Volume (vph) | 21 | 219 | 0 | 0 | 237 | 5 | 48 | 11 | 16 | 5 | 0 | 53 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 13 | 12 | 10 | 10 | 12 | 12 | 16 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | | | 0.997 | | | 0.912 | | | 0.876 | |
| Flt Protected | | 0.996 | | | | | 0.950 | | | | 0.996 | |
| Satd. Flow (prot) | 0 | 1465 | 0 | 0 | 1555 | 0 | 1338 | 1243 | 0 | 0 | 1494 | 0 |
| Flt Permitted | | 0.996 | | | | | 0.950 | | | | 0.996 | |
| Satd. Flow (perm) | 0 | 1465 | 0 | 0 | 1555 | 0 | 1338 | 1243 | 0 | 0 | 1494 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 1822 | | | 540 | | | 382 | | | 354 | |
| Travel Time (s) | | 41.4 | | | 12.3 | | | 8.7 | | | 8.0 | |
| Confl. Peds. (#/hr) | 8 | | 18 | 18 | | 8 | 13 | | 28 | 28 | | 13 |
| Confl. Bikes (#/hr) | | | 5 | | | 2 | | | 1 | | | |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.88 | 0.88 | 0.88 | 0.81 | 0.81 | 0.81 | 0.70 | 0.70 | 0.70 |
| Heavy Vehicles (%) | 32% | 2% | 0% | 0% | 2% | 0% | 2% | 13% | 0% | 0% | 0% | 2% |
| Parking (#/hr) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Adj. Flow (vph) | 25 | 258 | 0 | 0 | 269 | 6 | 59 | 14 | 20 | 7 | 0 | 76 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 283 | 0 | 0 | 275 | 0 | 59 | 34 | 0 | 0 | 83 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 10 | | | 10 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.30 | 1.14 | 1.14 | 1.25 | 1.14 | 1.42 | 1.42 | 1.14 | 1.14 | 1.12 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 50.2% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 21 | 219 | 0 | 0 | 237 | 5 | 48 | 11 | 16 | 5 | 0 | 53 |
| Future Volume (Veh/h) | 21 | 219 | 0 | 0 | 237 | 5 | 48 | 11 | 16 | 5 | 0 | 53 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.88 | 0.88 | 0.88 | 0.81 | 0.81 | 0.81 | 0.70 | 0.70 | 0.70 |
| Hourly flow rate (vph) | 25 | 258 | 0 | 0 | 269 | 6 | 59 | 14 | 20 | 7 | 0 | 76 |
| Pedestrians | | 13 | | | 28 | | | 18 | | | 8 | |
| Lane Width (ft) | | 12.0 | | | 13.0 | | | 10.0 | | | 16.0 | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Percent Blockage | | 1 | | | 3 | | | 1 | | | 1 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 540 | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 283 | | | 276 | | | 687 | 609 | 304 | 643 | 606 | 293 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 283 | | | 276 | | | 687 | 609 | 304 | 643 | 606 | 293 |
| tC, single (s) | 4.4 | | | 4.1 | | | *6.5 | 6.6 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.5 | | | 2.2 | | | 3.5 | 4.1 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 100 | | | 83 | 96 | 97 | 98 | 100 | 90 |
| cM capacity (veh/h) | 1115 | | | 1282 | | | 344 | 378 | 713 | 343 | 396 | 732 |

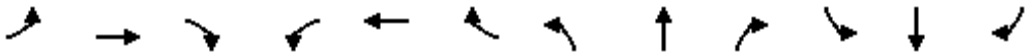
| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | SB 1 |
|---|---|---|---|---|---|
| Volume Total | 283 | 275 | 59 | 34 | 83 |
| Volume Left | 25 | 0 | 59 | 0 | 7 |
| Volume Right | 0 | 6 | 0 | 20 | 76 |
| cSH | 1115 | 1700 | 344 | 523 | 668 |
| Volume to Capacity | 0.02 | 0.16 | 0.17 | 0.07 | 0.12 |
| Queue Length 95th (ft) | 2 | 0 | 15 | 5 | 11 |
| Control Delay (s) | 0.9 | 0.0 | 17.6 | 12.4 | 11.2 |
| Lane LOS | A | | C | B | B |
| Approach Delay (s) | 0.9 | 0.0 | 15.7 | | 11.2 |
| Approach LOS | | | C | | B |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 3.6 | | | |
| Intersection Capacity Utilization | 50.2% | ICU Level of Service | | A |
| Analysis Period (min) | 15 | | | |

* User Entered Value

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 22 | 422 | 0 | 0 | 195 | 0 | 36 | 0 | 21 | 0 | 0 | 32 |
| Future Volume (vph) | 22 | 422 | 0 | 0 | 195 | 0 | 36 | 0 | 21 | 0 | 0 | 32 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 13 | 12 | 12 | 13 | 12 | 10 | 12 | 12 | 12 | 12 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | | | | | | 0.950 | | | 0.865 | |
| Flt Protected | | 0.998 | | | | | | 0.970 | | | | |
| Satd. Flow (prot) | 0 | 1747 | 0 | 0 | 1667 | 0 | 0 | 1547 | 0 | 0 | 1479 | 0 |
| Flt Permitted | | 0.998 | | | | | | 0.970 | | | | |
| Satd. Flow (perm) | 0 | 1747 | 0 | 0 | 1667 | 0 | 0 | 1547 | 0 | 0 | 1479 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 576 | | | 561 | | | 457 | | | 244 | |
| Travel Time (s) | | 13.1 | | | 12.8 | | | 10.4 | | | 5.5 | |
| Confl. Peds. (#/hr) | | | 13 | 13 | | | 134 | | 51 | | | |
| Confl. Bikes (#/hr) | | | 17 | | | | | | 2 | | | |
| Peak Hour Factor | 0.92 | 0.85 | 0.85 | 0.88 | 0.88 | 0.92 | 0.81 | 0.92 | 0.81 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 0% | 1% | 0% | 0% | 6% | 0% | 3% | 0% | 0% | 0% | 0% | 0% |
| Adj. Flow (vph) | 24 | 496 | 0 | 0 | 222 | 0 | 44 | 0 | 26 | 0 | 0 | 35 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 520 | 0 | 0 | 222 | 0 | 0 | 70 | 0 | 0 | 35 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.10 | 1.14 | 1.14 | 1.10 | 1.14 | 1.25 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |

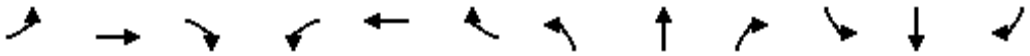
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 60.5% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 22 | 422 | 0 | 0 | 195 | 0 | 36 | 0 | 21 | 0 | 0 | 32 |
| Future Volume (Veh/h) | 22 | 422 | 0 | 0 | 195 | 0 | 36 | 0 | 21 | 0 | 0 | 32 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.92 | 0.85 | 0.85 | 0.88 | 0.88 | 0.92 | 0.81 | 0.92 | 0.81 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 24 | 496 | 0 | 0 | 222 | 0 | 44 | 0 | 26 | 0 | 0 | 35 |
| Pedestrians | | 134 | | | 51 | | | 13 | | | | |
| Lane Width (ft) | | 13.0 | | | 13.0 | | | 12.0 | | | | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | | |
| Percent Blockage | | 12 | | | 5 | | | 1 | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 576 | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 222 | | | 509 | | | 948 | 779 | 560 | 843 | 779 | 356 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 222 | | | 509 | | | 948 | 779 | 560 | 843 | 779 | 356 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 100 | | | 77 | 100 | 95 | 100 | 100 | 94 |
| cM capacity (veh/h) | 1359 | | | 1055 | | | 192 | 320 | 502 | 253 | 320 | 609 |

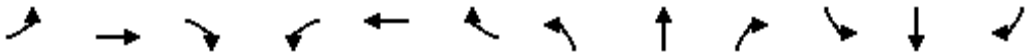
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 520 | 222 | 70 | 35 |
| Volume Left | 24 | 0 | 44 | 0 |
| Volume Right | 0 | 0 | 26 | 35 |
| cSH | 1359 | 1700 | 249 | 609 |
| Volume to Capacity | 0.02 | 0.13 | 0.28 | 0.06 |
| Queue Length 95th (ft) | 1 | 0 | 28 | 5 |
| Control Delay (s) | 0.5 | 0.0 | 25.0 | 11.3 |
| Lane LOS | A | | C | B |
| Approach Delay (s) | 0.5 | 0.0 | 25.0 | 11.3 |
| Approach LOS | | | C | B |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 2.9 | | | |
| Intersection Capacity Utilization | 60.5% | ICU Level of Service | B | |
| Analysis Period (min) | 15 | | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 27 | 406 | 0 | 0 | 199 | 87 | 37 | 38 | 21 | 377 | 0 | 68 |
| Future Volume (vph) | 27 | 406 | 0 | 0 | 199 | 87 | 37 | 38 | 21 | 377 | 0 | 68 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 15 | 12 | 12 | 16 | 12 | 12 | 16 | 12 | 12 | 14 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | | | 0.959 | | | 0.971 | | | 0.979 | |
| Flt Protected | | 0.997 | | | | | | 0.981 | | | 0.959 | |
| Satd. Flow (prot) | 0 | 1630 | 0 | 0 | 1804 | 0 | 0 | 1763 | 0 | 0 | 1705 | 0 |
| Flt Permitted | | 0.997 | | | | | | 0.981 | | | 0.959 | |
| Satd. Flow (perm) | 0 | 1630 | 0 | 0 | 1804 | 0 | 0 | 1763 | 0 | 0 | 1705 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 848 | | | 1822 | | | 402 | | | 2052 | |
| Travel Time (s) | | 19.3 | | | 41.4 | | | 9.1 | | | 46.6 | |
| Confl. Peds. (#/hr) | 4 | | | 5 | | 4 | 1 | | 24 | 24 | | 1 |
| Confl. Bikes (#/hr) | | | 5 | | | 1 | | | 1 | | | 5 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.93 | 0.93 | 0.93 | 0.87 | 0.87 | 0.87 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 12% | 3% | 0% | 0% | 3% | 3% | 3% | 9% | 0% | 0% | 0% | 3% |
| Parking (#/hr) | | 0 | 0 | | | | | | | | | |
| Adj. Flow (vph) | 31 | 461 | 0 | 0 | 214 | 94 | 43 | 44 | 24 | 405 | 0 | 73 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 492 | 0 | 0 | 308 | 0 | 0 | 111 | 0 | 0 | 478 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.16 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 1.05 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |

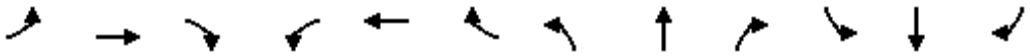
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 87.6% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 27 | 406 | 0 | 0 | 199 | 87 | 37 | 38 | 21 | 377 | 0 | 68 |
| Future Volume (Veh/h) | 27 | 406 | 0 | 0 | 199 | 87 | 37 | 38 | 21 | 377 | 0 | 68 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.93 | 0.93 | 0.93 | 0.87 | 0.87 | 0.87 | 0.93 | 0.93 | 0.93 |
| Hourly flow rate (vph) | 31 | 461 | 0 | 0 | 214 | 94 | 43 | 44 | 24 | 405 | 0 | 73 |
| Pedestrians | | 1 | | | 24 | | | 5 | | | 4 | |
| Lane Width (ft) | | 15.0 | | | 16.0 | | | 16.0 | | | 14.0 | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Percent Blockage | | 0 | | | 3 | | | 1 | | | 0 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 312 | | | 466 | | | 863 | 840 | 490 | 858 | 793 | 266 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 312 | | | 466 | | | 863 | 840 | 490 | 858 | 793 | 266 |
| tC, single (s) | 4.2 | | | 4.1 | | | 7.1 | 6.6 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.3 | | | 2.2 | | | 3.5 | 4.1 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 97 | | | 100 | | | 82 | 84 | 96 | 0 | 100 | 90 |
| cM capacity (veh/h) | 1189 | | | 1100 | | | 239 | 284 | 564 | 222 | 312 | 766 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 492 | 308 | 111 | 478 |
| Volume Left | 31 | 0 | 43 | 405 |
| Volume Right | 0 | 94 | 24 | 73 |
| cSH | 1189 | 1100 | 294 | 249 |
| Volume to Capacity | 0.03 | 0.00 | 0.38 | 1.92 |
| Queue Length 95th (ft) | 2 | 0 | 42 | 847 |
| Control Delay (s) | 0.8 | 0.0 | 24.5 | 460.2 |
| Lane LOS | A | | C | F |
| Approach Delay (s) | 0.8 | 0.0 | 24.5 | 460.2 |
| Approach LOS | | | C | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 160.6 | | |
| Intersection Capacity Utilization | 87.6% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 16 | 21 | 0 | 5 | 21 | 44 | 21 | 591 | 16 | 21 | 614 | 16 |
| Future Volume (vph) | 16 | 21 | 0 | 5 | 21 | 44 | 21 | 591 | 16 | 21 | 614 | 16 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | 0.97 | | | 0.91 | | | 1.00 | | | 1.00 | |
| Frt | | | | | 0.915 | | | 0.997 | | | 0.997 | |
| Flt Protected | | 0.979 | | | 0.996 | | | 0.998 | | | 0.998 | |
| Satd. Flow (prot) | 0 | 1406 | 0 | 0 | 1195 | 0 | 0 | 1410 | 0 | 0 | 1410 | 0 |
| Flt Permitted | | 0.856 | | | 0.981 | | | 0.971 | | | 0.973 | |
| Satd. Flow (perm) | 0 | 1191 | 0 | 0 | 1169 | 0 | 0 | 1370 | 0 | 0 | 1374 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | 70 | | | 2 | | | 2 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 659 | | | 649 | | | 380 | | | 618 | |
| Travel Time (s) | | 15.0 | | | 14.8 | | | 8.6 | | | 14.0 | |
| Confl. Peds. (#/hr) | 33 | | 29 | 29 | | 33 | 143 | | 60 | 60 | | 143 |
| Confl. Bikes (#/hr) | | | | | | | | | 1 | | | 7 |
| Peak Hour Factor | 0.80 | 0.80 | 0.80 | 0.52 | 0.52 | 0.52 | 0.95 | 0.95 | 0.95 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% | 8% | 0% | 1% | 0% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Adj. Flow (vph) | 20 | 26 | 0 | 10 | 40 | 85 | 22 | 622 | 17 | 21 | 627 | 16 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 46 | 0 | 0 | 135 | 0 | 0 | 661 | 0 | 0 | 664 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |

| Lane Group | Ø2 |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | |
| Future Volume (vph) | |
| Ideal Flow (vphpl) | |
| Lane Width (ft) | |
| Lane Util. Factor | |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Right Turn on Red | |
| Satd. Flow (RTOR) | |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | |
| Heavy Vehicles (%) | |
| Parking (#/hr) | |
| Adj. Flow (vph) | |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | |
| Enter Blocked Intersection | |
| Lane Alignment | |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | |
| Turning Speed (mph) | |
| Number of Detectors | |
| Detector Template | |
| Leading Detector (ft) | |
| Trailing Detector (ft) | |
| Detector 1 Position(ft) | |
| Detector 1 Size(ft) | |
| Detector 1 Type | |
| Detector 1 Channel | |
| Detector 1 Extend (s) | |
| Detector 1 Queue (s) | |
| Detector 1 Delay (s) | |
| Detector 2 Position(ft) | |
| Detector 2 Size(ft) | |
| Detector 2 Type | |
| Detector 2 Channel | |
| Detector 2 Extend (s) | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Detector Phase | 5 | 5 | | 5 | 5 | | 1 | 1 | | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | |
| Minimum Split (s) | 12.0 | 12.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Total Split (s) | 18.0 | 18.0 | | 18.0 | 18.0 | | 54.0 | 54.0 | | 54.0 | 54.0 | |
| Total Split (%) | 17.6% | 17.6% | | 17.6% | 17.6% | | 52.9% | 52.9% | | 52.9% | 52.9% | |
| Maximum Green (s) | 14.0 | 14.0 | | 14.0 | 14.0 | | 50.0 | 50.0 | | 50.0 | 50.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Lost Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lead/Lag | | | | | | | Lead | Lead | | Lead | Lead | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | Max | Max | | Max | Max | | Max | Max | | Max | Max | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 14.3 | | | 14.3 | | | 51.0 | | | 51.0 | |
| Actuated g/C Ratio | | 0.15 | | | 0.15 | | | 0.53 | | | 0.53 | |
| v/c Ratio | | 0.26 | | | 0.58 | | | 0.91 | | | 0.91 | |
| Control Delay | | 43.9 | | | 32.6 | | | 42.4 | | | 42.6 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 43.9 | | | 32.6 | | | 42.4 | | | 42.6 | |
| LOS | | D | | | C | | | D | | | D | |
| Approach Delay | | 43.9 | | | 32.6 | | | 42.4 | | | 42.6 | |
| Approach LOS | | D | | | C | | | D | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 102 | | | |
| Actuated Cycle Length: 96 | | | |
| Natural Cycle: 90 | | | |
| Control Type: Semi Act-Uncoord | | | |
| Maximum v/c Ratio: 0.91 | | | |
| Intersection Signal Delay: 41.6 | | Intersection LOS: D | |
| Intersection Capacity Utilization 61.0% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 11: L Street & E 5th Street



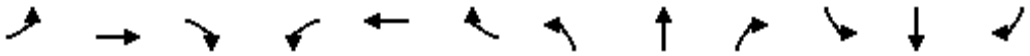
| Lane Group | Ø2 |
|---|---|
| Turn Type | |
| Protected Phases | 2 |
| Permitted Phases | |
| Detector Phase | |
| Switch Phase | |
| Minimum Initial (s) | 4.0 |
| Minimum Split (s) | 30.0 |
| Total Split (s) | 30.0 |
| Total Split (%) | 29% |
| Maximum Green (s) | 26.0 |
| Yellow Time (s) | 3.0 |
| All-Red Time (s) | 1.0 |
| Lost Time Adjust (s) | |
| Total Lost Time (s) | |
| Lead/Lag | Lag |
| Lead-Lag Optimize? | |
| Vehicle Extension (s) | 2.0 |
| Recall Mode | None |
| Walk Time (s) | 14.0 |
| Flash Dont Walk (s) | 12.0 |
| Pedestrian Calls (#/hr) | 66 |
| Act Effct Green (s) | |
| Actuated g/C Ratio | |
| v/c Ratio | |
| Control Delay | |
| Queue Delay | |
| Total Delay | |
| LOS | |
| Approach Delay | |
| Approach LOS | |

| Intersection Summary |
|---|

| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 46 | 135 | 661 | 664 |
| v/c Ratio | 0.26 | 0.58 | 0.91 | 0.91 |
| Control Delay | 43.9 | 32.6 | 42.4 | 42.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 43.9 | 32.6 | 42.4 | 42.6 |
| Queue Length 50th (ft) | 27 | 39 | 407 | 409 |
| Queue Length 95th (ft) | 55 | 35 | #663 | #666 |
| Internal Link Dist (ft) | 579 | 569 | 300 | 538 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 177 | 233 | 728 | 730 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.26 | 0.58 | 0.91 | 0.91 |

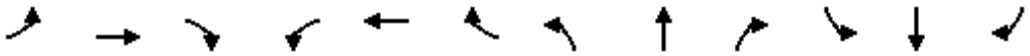
Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 16 | 21 | 0 | 5 | 21 | 44 | 21 | 591 | 16 | 21 | 614 | 16 |
| Future Volume (vph) | 16 | 21 | 0 | 5 | 21 | 44 | 21 | 591 | 16 | 21 | 614 | 16 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Total Lost time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Frpb, ped/bikes | | 1.00 | | | 0.92 | | | 1.00 | | | 1.00 | |
| Flpb, ped/bikes | | 0.97 | | | 0.99 | | | 1.00 | | | 1.00 | |
| Frt | | 1.00 | | | 0.92 | | | 1.00 | | | 1.00 | |
| Flt Protected | | 0.98 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | | 1363 | | | 1195 | | | 1408 | | | 1410 | |
| Flt Permitted | | 0.86 | | | 0.98 | | | 0.97 | | | 0.97 | |
| Satd. Flow (perm) | | 1192 | | | 1176 | | | 1369 | | | 1374 | |
| Peak-hour factor, PHF | 0.80 | 0.80 | 0.80 | 0.52 | 0.52 | 0.52 | 0.95 | 0.95 | 0.95 | 0.98 | 0.98 | 0.98 |
| Adj. Flow (vph) | 20 | 26 | 0 | 10 | 40 | 85 | 22 | 622 | 17 | 21 | 627 | 16 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 60 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| Lane Group Flow (vph) | 0 | 46 | 0 | 0 | 75 | 0 | 0 | 660 | 0 | 0 | 663 | 0 |
| Confl. Peds. (#/hr) | 33 | | 29 | 29 | | 33 | 143 | | 60 | 60 | | 143 |
| Confl. Bikes (#/hr) | | | | | | | | | 1 | | | 7 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% | 8% | 0% | 1% | 0% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 14.3 | | | 14.3 | | | 51.0 | | | 51.0 | |
| Effective Green, g (s) | | 14.3 | | | 14.3 | | | 51.0 | | | 51.0 | |
| Actuated g/C Ratio | | 0.15 | | | 0.15 | | | 0.53 | | | 0.53 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | | | 2.0 | | | 2.0 | |
| Lane Grp Cap (vph) | | 175 | | | 173 | | | 720 | | | 723 | |
| v/s Ratio Prot | | | | | | | | | | | | |
| v/s Ratio Perm | | 0.04 | | | c0.06 | | | 0.48 | | | c0.48 | |
| v/c Ratio | | 0.26 | | | 0.44 | | | 0.92 | | | 0.92 | |
| Uniform Delay, d1 | | 36.6 | | | 37.6 | | | 21.0 | | | 21.0 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 3.6 | | | 7.8 | | | 18.4 | | | 18.4 | |
| Delay (s) | | 40.3 | | | 45.4 | | | 39.5 | | | 39.4 | |
| Level of Service | | D | | | D | | | D | | | D | |
| Approach Delay (s) | | 40.3 | | | 45.4 | | | 39.5 | | | 39.4 | |
| Approach LOS | | D | | | D | | | D | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 40.0 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.62 | | |
| Actuated Cycle Length (s) | 96.9 | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 61.0% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 21 | 27 | 16 | 5 | 16 | 11 | 16 | 538 | 16 | 21 | 511 | 28 |
| Future Volume (vph) | 21 | 27 | 16 | 5 | 16 | 11 | 16 | 538 | 16 | 21 | 511 | 28 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 16 | 12 | 12 | 15 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | 0.96 | | | 0.97 | | | 1.00 | | | 0.99 | |
| Frt | | 0.967 | | | 0.955 | | | 0.996 | | | 0.993 | |
| Flt Protected | | 0.984 | | | 0.992 | | | 0.999 | | | 0.998 | |
| Satd. Flow (prot) | 0 | 1489 | 0 | 0 | 1513 | 0 | 0 | 1584 | 0 | 0 | 1552 | 0 |
| Flt Permitted | | 0.922 | | | 0.969 | | | 0.981 | | | 0.971 | |
| Satd. Flow (perm) | 0 | 1380 | 0 | 0 | 1458 | 0 | 0 | 1553 | 0 | 0 | 1509 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 18 | | | 12 | | | 4 | | | 7 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 602 | | | 677 | | | 676 | | | 535 | |
| Travel Time (s) | | 13.7 | | | 15.4 | | | 15.4 | | | 12.2 | |
| Confl. Peds. (#/hr) | 15 | | 38 | 38 | | 15 | 58 | | 32 | 32 | | 58 |
| Confl. Bikes (#/hr) | | | | | | | | | 1 | | | 2 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.89 | 0.89 | 0.89 | 0.87 | 0.87 | 0.87 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 10% | 12% | 0% | 0% | 8% | 0% | 0% | 0% | 0% | 0% | 1% | 4% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | | | | | |
| Adj. Flow (vph) | 24 | 31 | 18 | 6 | 18 | 12 | 18 | 618 | 18 | 23 | 568 | 31 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 73 | 0 | 0 | 36 | 0 | 0 | 654 | 0 | 0 | 622 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.12 | 1.14 | 1.14 | 1.16 | 1.14 | 1.14 | 1.25 | 1.14 | 1.14 | 1.25 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Detector Phase | 5 | 5 | | 5 | 5 | | 1 | 1 | | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 6.0 | 6.0 | | 6.0 | 6.0 | | 20.0 | 20.0 | | 20.0 | 20.0 | |
| Minimum Split (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 24.0 | 24.0 | | 24.0 | 24.0 | |
| Total Split (s) | 24.0 | 24.0 | | 24.0 | 24.0 | | 54.0 | 54.0 | | 54.0 | 54.0 | |
| Total Split (%) | 30.8% | 30.8% | | 30.8% | 30.8% | | 69.2% | 69.2% | | 69.2% | 69.2% | |
| Maximum Green (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 50.0 | 50.0 | | 50.0 | 50.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Lost Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | Max | Max | | Max | Max | | Max | Max | | Max | Max | |
| Walk Time (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | |
| Flash Dont Walk (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | |
| Pedestrian Calls (#/hr) | 13 | 13 | | 13 | 13 | | 23 | 23 | | 23 | 23 | |
| Act Effct Green (s) | | 20.0 | | | 20.0 | | | 50.0 | | | 50.0 | |
| Actuated g/C Ratio | | 0.26 | | | 0.26 | | | 0.64 | | | 0.64 | |
| v/c Ratio | | 0.20 | | | 0.09 | | | 0.66 | | | 0.64 | |
| Control Delay | | 19.8 | | | 17.4 | | | 12.6 | | | 12.3 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 19.8 | | | 17.4 | | | 12.6 | | | 12.3 | |
| LOS | | B | | | B | | | B | | | B | |
| Approach Delay | | 19.8 | | | 17.4 | | | 12.6 | | | 12.3 | |
| Approach LOS | | B | | | B | | | B | | | B | |

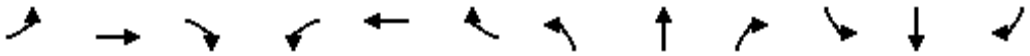
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 78 | | | |
| Actuated Cycle Length: 78 | | | |
| Natural Cycle: 60 | | | |
| Control Type: Semi Act-Uncoord | | | |
| Maximum v/c Ratio: 0.66 | | | |
| Intersection Signal Delay: 13.0 | | Intersection LOS: B | |
| Intersection Capacity Utilization 62.5% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 12: L Street & E 8th Street



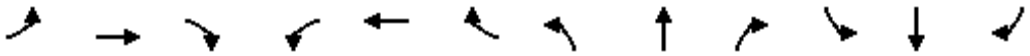
| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 73 | 36 | 654 | 622 |
| v/c Ratio | 0.20 | 0.09 | 0.66 | 0.64 |
| Control Delay | 19.8 | 17.4 | 12.6 | 12.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 19.8 | 17.4 | 12.6 | 12.3 |
| Queue Length 50th (ft) | 21 | 9 | 172 | 160 |
| Queue Length 95th (ft) | 52 | 31 | 263 | 265 |
| Internal Link Dist (ft) | 522 | 597 | 596 | 455 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 367 | 382 | 996 | 969 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.20 | 0.09 | 0.66 | 0.64 |

Intersection Summary



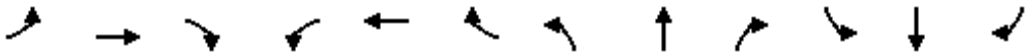
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 21 | 27 | 16 | 5 | 16 | 11 | 16 | 538 | 16 | 21 | 511 | 28 |
| Future Volume (vph) | 21 | 27 | 16 | 5 | 16 | 11 | 16 | 538 | 16 | 21 | 511 | 28 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 16 | 12 | 12 | 15 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Total Lost time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Frpb, ped/bikes | | 0.97 | | | 0.98 | | | 1.00 | | | 0.99 | |
| Flpb, ped/bikes | | 0.99 | | | 0.99 | | | 1.00 | | | 1.00 | |
| Frt | | 0.97 | | | 0.95 | | | 1.00 | | | 0.99 | |
| Flt Protected | | 0.98 | | | 0.99 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | | 1472 | | | 1493 | | | 1582 | | | 1551 | |
| Flt Permitted | | 0.92 | | | 0.97 | | | 0.98 | | | 0.97 | |
| Satd. Flow (perm) | | 1379 | | | 1459 | | | 1553 | | | 1508 | |
| Peak-hour factor, PHF | 0.88 | 0.88 | 0.88 | 0.89 | 0.89 | 0.89 | 0.87 | 0.87 | 0.87 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 24 | 31 | 18 | 6 | 18 | 12 | 18 | 618 | 18 | 23 | 568 | 31 |
| RTOR Reduction (vph) | 0 | 13 | 0 | 0 | 9 | 0 | 0 | 1 | 0 | 0 | 3 | 0 |
| Lane Group Flow (vph) | 0 | 60 | 0 | 0 | 27 | 0 | 0 | 653 | 0 | 0 | 619 | 0 |
| Confl. Peds. (#/hr) | 15 | | 38 | 38 | | 15 | 58 | | 32 | 32 | | 58 |
| Confl. Bikes (#/hr) | | | | | | | | | 1 | | | 2 |
| Heavy Vehicles (%) | 10% | 12% | 0% | 0% | 8% | 0% | 0% | 0% | 0% | 0% | 1% | 4% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 20.0 | | | 20.0 | | | 50.0 | | | 50.0 | |
| Effective Green, g (s) | | 20.0 | | | 20.0 | | | 50.0 | | | 50.0 | |
| Actuated g/C Ratio | | 0.26 | | | 0.26 | | | 0.64 | | | 0.64 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | | | 2.0 | | | 2.0 | |
| Lane Grp Cap (vph) | | 353 | | | 374 | | | 995 | | | 966 | |
| v/s Ratio Prot | | | | | | | | | | | | |
| v/s Ratio Perm | | c0.04 | | | 0.02 | | | c0.42 | | | 0.41 | |
| v/c Ratio | | 0.17 | | | 0.07 | | | 0.66 | | | 0.64 | |
| Uniform Delay, d1 | | 22.5 | | | 22.0 | | | 8.7 | | | 8.5 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 1.0 | | | 0.4 | | | 3.4 | | | 3.3 | |
| Delay (s) | | 23.6 | | | 22.3 | | | 12.0 | | | 11.8 | |
| Level of Service | | C | | | C | | | B | | | B | |
| Approach Delay (s) | | 23.6 | | | 22.3 | | | 12.0 | | | 11.8 | |
| Approach LOS | | C | | | C | | | B | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 12.8 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.52 | | |
| Actuated Cycle Length (s) | 78.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 62.5% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 5 | 5 | 0 | 0 | 16 | 16 | 5 | 532 | 5 | 5 | 485 | 21 |
| Future Volume (vph) | 5 | 5 | 0 | 0 | 16 | 16 | 5 | 532 | 5 | 5 | 485 | 21 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | 0.932 | | | 0.999 | | | 0.994 | |
| Flt Protected | | 0.976 | | | | | | | | | | |
| Satd. Flow (prot) | 0 | 1854 | 0 | 0 | 1771 | 0 | 0 | 1898 | 0 | 0 | 1889 | 0 |
| Flt Permitted | | 0.976 | | | | | | | | | | |
| Satd. Flow (perm) | 0 | 1854 | 0 | 0 | 1771 | 0 | 0 | 1898 | 0 | 0 | 1889 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 239 | | | 189 | | | 91 | | | 676 | |
| Travel Time (s) | | 5.4 | | | 4.3 | | | 2.1 | | | 15.4 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 5 | 5 | 0 | 0 | 17 | 17 | 5 | 578 | 5 | 5 | 527 | 23 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 10 | 0 | 0 | 34 | 0 | 0 | 588 | 0 | 0 | 555 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |

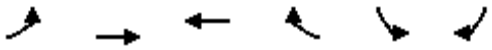
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 42.8% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |



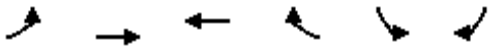
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 5 | 5 | 0 | 0 | 16 | 16 | 5 | 532 | 5 | 5 | 485 | 21 |
| Future Volume (Veh/h) | 5 | 5 | 0 | 0 | 16 | 16 | 5 | 532 | 5 | 5 | 485 | 21 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 5 | 5 | 0 | 0 | 17 | 17 | 5 | 578 | 5 | 5 | 527 | 23 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | 676 | |
| pX, platoon unblocked | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | | 0.82 | | | | | |
| vC, conflicting volume | 1164 | 1142 | 538 | 1142 | 1150 | 580 | 550 | | | 583 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1089 | 1061 | 322 | 1061 | 1072 | 580 | 336 | | | 583 | | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 96 | 97 | 100 | 100 | 91 | 97 | 100 | | | 100 | | |
| cM capacity (veh/h) | 141 | 182 | 591 | 161 | 180 | 518 | 1008 | | | 1001 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 10 | 34 | 588 | 555 |
| Volume Left | 5 | 0 | 5 | 5 |
| Volume Right | 0 | 17 | 5 | 23 |
| cSH | 159 | 267 | 1008 | 1001 |
| Volume to Capacity | 0.06 | 0.13 | 0.00 | 0.00 |
| Queue Length 95th (ft) | 5 | 11 | 0 | 0 |
| Control Delay (s) | 29.1 | 20.5 | 0.1 | 0.1 |
| Lane LOS | D | C | A | A |
| Approach Delay (s) | 29.1 | 20.5 | 0.1 | 0.1 |
| Approach LOS | D | C | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 1.0 | | | |
| Intersection Capacity Utilization | 42.8% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR | Ø2 |
|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | |
| Traffic Volume (vph) | 532 | 411 | 373 | 11 | 0 | 0 | |
| Future Volume (vph) | 532 | 411 | 373 | 11 | 0 | 0 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Lane Util. Factor | 0.95 | 0.95 | 0.95 | 0.95 | 1.00 | 1.00 | |
| Frt | | | 0.996 | | | | |
| Flt Protected | | 0.973 | | | | | |
| Satd. Flow (prot) | 0 | 3513 | 3596 | 0 | 0 | 0 | |
| Flt Permitted | | 0.626 | | | | | |
| Satd. Flow (perm) | 0 | 2260 | 3596 | 0 | 0 | 0 | |
| Right Turn on Red | | | | Yes | | Yes | |
| Satd. Flow (RTOR) | | | 6 | | | | |
| Link Speed (mph) | | 30 | 30 | | 30 | | |
| Link Distance (ft) | | 336 | 398 | | 184 | | |
| Travel Time (s) | | 7.6 | 9.0 | | 4.2 | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | |
| Adj. Flow (vph) | 578 | 447 | 405 | 12 | 0 | 0 | |
| Shared Lane Traffic (%) | | | | | | | |
| Lane Group Flow (vph) | 0 | 1025 | 417 | 0 | 0 | 0 | |
| Enter Blocked Intersection | No | No | No | No | No | No | |
| Lane Alignment | Left | Left | Left | Right | Left | Right | |
| Median Width(ft) | | 0 | 0 | | 0 | | |
| Link Offset(ft) | | 0 | 0 | | 0 | | |
| Crosswalk Width(ft) | | 16 | 16 | | 16 | | |
| Two way Left Turn Lane | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Turning Speed (mph) | 15 | | | 9 | 15 | 9 | |
| Number of Detectors | 1 | 2 | 2 | | | | |
| Detector Template | Left | Thru | Thru | | | | |
| Leading Detector (ft) | 20 | 100 | 100 | | | | |
| Trailing Detector (ft) | 0 | 0 | 0 | | | | |
| Detector 1 Position(ft) | 0 | 0 | 0 | | | | |
| Detector 1 Size(ft) | 20 | 6 | 6 | | | | |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | | | | |
| Detector 1 Channel | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | | | | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | | | | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | | | | |
| Detector 2 Position(ft) | | 94 | 94 | | | | |
| Detector 2 Size(ft) | | 6 | 6 | | | | |
| Detector 2 Type | | Cl+Ex | Cl+Ex | | | | |
| Detector 2 Channel | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | 0.0 | | | | |
| Turn Type | Perm | NA | NA | | | | |
| Protected Phases | | 1 | 1 | | | | 2 |
| Permitted Phases | 1 | | | | | | |
| Detector Phase | 1 | 1 | 1 | | | | |
| Switch Phase | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | 8.0 | | | | 10.0 |



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR | Ø2 |
|---|---|---|---|---|---|---|---|
| Minimum Split (s) | 25.4 | 25.4 | 25.4 | | | | 25.0 |
| Total Split (s) | 70.0 | 70.0 | 70.0 | | | | 25.0 |
| Total Split (%) | 73.7% | 73.7% | 73.7% | | | | 26% |
| Maximum Green (s) | 62.6 | 62.6 | 62.6 | | | | 20.5 |
| Yellow Time (s) | 5.4 | 5.4 | 5.4 | | | | 3.5 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | | | 1.0 |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | | | |
| Total Lost Time (s) | | 7.4 | 7.4 | | | | |
| Lead/Lag | Lead | Lead | Lead | | | | Lag |
| Lead-Lag Optimize? | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | | | | 2.0 |
| Recall Mode | Max | Max | Max | | | | None |
| Walk Time (s) | | | | | | | 18.0 |
| Flash Dont Walk (s) | | | | | | | 1.0 |
| Pedestrian Calls (#/hr) | | | | | | | 28 |
| Act Effct Green (s) | | 83.6 | 83.6 | | | | |
| Actuated g/C Ratio | | 0.89 | 0.89 | | | | |
| v/c Ratio | | 0.51 | 0.13 | | | | |
| Control Delay | | 5.3 | 2.7 | | | | |
| Queue Delay | | 0.0 | 0.0 | | | | |
| Total Delay | | 5.3 | 2.7 | | | | |
| LOS | | A | A | | | | |
| Approach Delay | | 5.3 | 2.7 | | | | |
| Approach LOS | | A | A | | | | |

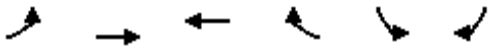
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 95 | | | |
| Actuated Cycle Length: 94.4 | | | |
| Natural Cycle: 65 | | | |
| Control Type: Semi Act-Uncoord | | | |
| Maximum v/c Ratio: 0.51 | | | |
| Intersection Signal Delay: 4.6 | | Intersection LOS: A | |
| Intersection Capacity Utilization 52.5% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 14: Day Blvd Ped



| Lane Group | EBT | WBT |
|---|---|---|
| Lane Group Flow (vph) | 1025 | 417 |
| v/c Ratio | 0.51 | 0.13 |
| Control Delay | 5.3 | 2.7 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 5.3 | 2.7 |
| Queue Length 50th (ft) | 0 | 0 |
| Queue Length 95th (ft) | 231 | 58 |
| Internal Link Dist (ft) | 256 | 318 |
| Turn Bay Length (ft) | | |
| Base Capacity (vph) | 2002 | 3187 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.51 | 0.13 |

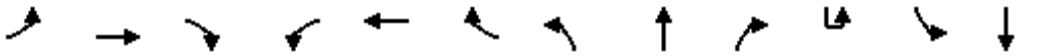
Intersection Summary



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 532 | 411 | 373 | 11 | 0 | 0 |
| Future Volume (vph) | 532 | 411 | 373 | 11 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 7.4 | 7.4 | | | |
| Lane Util. Factor | | 0.95 | 0.95 | | | |
| Frt | | 1.00 | 1.00 | | | |
| Flt Protected | | 0.97 | 1.00 | | | |
| Satd. Flow (prot) | | 3511 | 3594 | | | |
| Flt Permitted | | 0.63 | 1.00 | | | |
| Satd. Flow (perm) | | 2259 | 3594 | | | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 578 | 447 | 405 | 12 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 1 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 1025 | 416 | 0 | 0 | 0 |
| Turn Type | Perm | NA | NA | | | |
| Protected Phases | | 1 | 1 | | | |
| Permitted Phases | 1 | | | | | |
| Actuated Green, G (s) | | 78.7 | 78.7 | | | |
| Effective Green, g (s) | | 78.7 | 78.7 | | | |
| Actuated g/C Ratio | | 0.81 | 0.81 | | | |
| Clearance Time (s) | | 7.4 | 7.4 | | | |
| Vehicle Extension (s) | | 2.0 | 2.0 | | | |
| Lane Grp Cap (vph) | | 1829 | 2909 | | | |
| v/s Ratio Prot | | | 0.12 | | | |
| v/s Ratio Perm | | c0.45 | | | | |
| v/c Ratio | | 0.56 | 0.14 | | | |
| Uniform Delay, d1 | | 3.2 | 2.0 | | | |
| Progression Factor | | 1.00 | 1.00 | | | |
| Incremental Delay, d2 | | 1.2 | 0.1 | | | |
| Delay (s) | | 4.5 | 2.1 | | | |
| Level of Service | | A | A | | | |
| Approach Delay (s) | | 4.5 | 2.1 | | 0.0 | |
| Approach LOS | | A | A | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 3.8 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.52 | | |
| Actuated Cycle Length (s) | 97.2 | Sum of lost time (s) | 11.9 |
| Intersection Capacity Utilization | 52.5% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBU | SBL | SBT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 140 | 96 | 5 | 147 | 53 | 113 | 10 | 991 | 328 | 5 | 349 | 541 |
| Future Volume (vph) | 140 | 96 | 5 | 147 | 53 | 113 | 10 | 991 | 328 | 5 | 349 | 541 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 14 | 12 | 12 | 13 | 16 | 10 | 11 | 12 | 12 | 13 | 12 |
| Storage Length (ft) | 0 | | 0 | 350 | | 0 | 70 | | 0 | | 350 | |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 0 | | 1 | |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | | 25 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 1.00 | 0.95 |
| Ped Bike Factor | | 0.98 | | | 0.99 | | 0.96 | 0.99 | | | 1.00 | 0.97 |
| Frt | | 0.997 | | | | 0.850 | | 0.963 | | | | 0.971 |
| Flt Protected | | 0.972 | | | 0.965 | | 0.950 | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 1594 | 0 | 0 | 1541 | 1458 | 1516 | 2802 | 0 | 0 | 1556 | 2731 |
| Flt Permitted | | 0.633 | | | 0.626 | | 0.155 | | | | 0.155 | |
| Satd. Flow (perm) | 0 | 1021 | 0 | 0 | 991 | 1458 | 237 | 2802 | 0 | 0 | 253 | 2731 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | |
| Satd. Flow (RTOR) | | 1 | | | | 131 | | 46 | | | | 36 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | | 30 |
| Link Distance (ft) | | 745 | | | 950 | | | 1523 | | | | 585 |
| Travel Time (s) | | 16.9 | | | 21.6 | | | 34.6 | | | | 13.3 |
| Confl. Peds. (#/hr) | 32 | | 17 | 17 | | 32 | 127 | | 36 | | 36 | |
| Confl. Bikes (#/hr) | | | 7 | | | 3 | | | 7 | | | |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.86 | 0.86 | 0.86 | 0.89 | 0.89 | 0.89 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 11% | 11% | 0% | 8% | 18% | 13% | 0% | 8% | 2% | 0% | 8% | 13% |
| Adj. Flow (vph) | 165 | 113 | 6 | 171 | 62 | 131 | 11 | 1113 | 369 | 5 | 371 | 576 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 284 | 0 | 0 | 233 | 131 | 11 | 1482 | 0 | 0 | 376 | 713 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | R NA | Left | Left |
| Median Width(ft) | | 0 | | | 6 | | | 13 | | | | 17 |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | | 0 |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | | 16 |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.05 | 1.14 | 1.14 | 1.10 | 0.97 | 1.25 | 1.19 | 1.14 | 1.14 | 1.10 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 9 | 15 | |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | | 1 | 1 | 2 |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | | Left | Left | Thru |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | 20 | 20 | 100 | | 20 | 20 | 100 |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | 20 | 20 | 6 | | 20 | 20 | 6 |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | | 94 |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | | 6 |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | Cl+Ex |

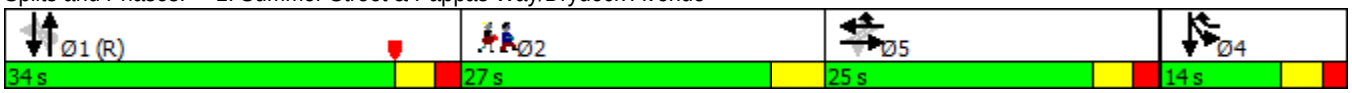


| Lane Group | SBR | Ø2 |
|---|---|---|
| Lane Configurations | | |
| Traffic Volume (vph) | 129 | |
| Future Volume (vph) | 129 | |
| Ideal Flow (vphpl) | 1900 | |
| Lane Width (ft) | 12 | |
| Storage Length (ft) | 0 | |
| Storage Lanes | 0 | |
| Taper Length (ft) | | |
| Lane Util. Factor | 0.95 | |
| Ped Bike Factor | | |
| Frt | | |
| Flt Protected | | |
| Satd. Flow (prot) | 0 | |
| Flt Permitted | | |
| Satd. Flow (perm) | 0 | |
| Right Turn on Red | Yes | |
| Satd. Flow (RTOR) | | |
| Link Speed (mph) | | |
| Link Distance (ft) | | |
| Travel Time (s) | | |
| Confl. Peds. (#/hr) | 127 | |
| Confl. Bikes (#/hr) | 12 | |
| Peak Hour Factor | 0.94 | |
| Heavy Vehicles (%) | 6% | |
| Adj. Flow (vph) | 137 | |
| Shared Lane Traffic (%) | | |
| Lane Group Flow (vph) | 0 | |
| Enter Blocked Intersection | No | |
| Lane Alignment | Right | |
| Median Width(ft) | | |
| Link Offset(ft) | | |
| Crosswalk Width(ft) | | |
| Two way Left Turn Lane | | |
| Headway Factor | 1.14 | |
| Turning Speed (mph) | 9 | |
| Number of Detectors | | |
| Detector Template | | |
| Leading Detector (ft) | | |
| Trailing Detector (ft) | | |
| Detector 1 Position(ft) | | |
| Detector 1 Size(ft) | | |
| Detector 1 Type | | |
| Detector 1 Channel | | |
| Detector 1 Extend (s) | | |
| Detector 1 Queue (s) | | |
| Detector 1 Delay (s) | | |
| Detector 2 Position(ft) | | |
| Detector 2 Size(ft) | | |
| Detector 2 Type | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBU | SBL | SBT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | 0.0 |
| Turn Type | Perm | NA | | Perm | NA | pt+ov | Perm | NA | | D.Pm | D.P+P | NA |
| Protected Phases | | 5 | | | 5 | 5 4 | | 1 | | | 4 | 1 4 |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | 1 | |
| Detector Phase | 5 | 5 | | 5 | 5 | 5 4 | 1 | 1 | | 1 | 4 | 1 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | |
| Minimum Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | | 13.0 | 13.0 | | 13.0 | 13.0 | |
| Total Split (s) | 25.0 | 25.0 | | 25.0 | 25.0 | | 34.0 | 34.0 | | 34.0 | 14.0 | |
| Total Split (%) | 25.0% | 25.0% | | 25.0% | 25.0% | | 34.0% | 34.0% | | 34.0% | 14.0% | |
| Maximum Green (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 29.0 | 29.0 | | 29.0 | 9.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | 0.0 | 0.0 | | | 0.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | 5.0 | 5.0 | | | 5.0 | |
| Lead/Lag | | | | | | | Lead | Lead | | Lead | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | None | None | | None | None | | C-Max | C-Max | | C-Max | None | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 41.6 | | | 41.6 | 55.6 | 29.0 | 29.0 | | | 38.0 | 43.0 |
| Actuated g/C Ratio | | 0.42 | | | 0.42 | 0.56 | 0.29 | 0.29 | | | 0.38 | 0.43 |
| v/c Ratio | | 0.67 | | | 0.57 | 0.15 | 0.16 | 1.75 | | | 1.77 | 0.60 |
| Control Delay | | 36.2 | | | 32.9 | 3.9 | 33.6 | 369.7 | | | 383.9 | 23.2 |
| Queue Delay | | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | | | 0.0 | 0.0 |
| Total Delay | | 36.2 | | | 32.9 | 3.9 | 33.6 | 369.7 | | | 383.9 | 23.2 |
| LOS | | D | | | C | A | C | F | | | F | C |
| Approach Delay | | 36.2 | | | 22.5 | | | 367.2 | | | | 147.7 |
| Approach LOS | | D | | | C | | | F | | | | F |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 100 | | | |
| Actuated Cycle Length: 100 | | | |
| Offset: 0 (0%), Referenced to phase 1:NBSB, Start of Yellow | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 1.77 | | | |
| Intersection Signal Delay: 225.3 | | Intersection LOS: F | |
| Intersection Capacity Utilization 106.5% | | ICU Level of Service G | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 1: Summer Street & Pappas Way/Drydock Avenue





| Lane Group | SBR | Ø2 |
|---|---|---|
| Detector 2 Channel | | |
| Detector 2 Extend (s) | | |
| Turn Type | | |
| Protected Phases | | 2 |
| Permitted Phases | | |
| Detector Phase | | |
| Switch Phase | | |
| Minimum Initial (s) | | 4.0 |
| Minimum Split (s) | | 27.0 |
| Total Split (s) | | 27.0 |
| Total Split (%) | | 27% |
| Maximum Green (s) | | 23.0 |
| Yellow Time (s) | | 4.0 |
| All-Red Time (s) | | 0.0 |
| Lost Time Adjust (s) | | |
| Total Lost Time (s) | | |
| Lead/Lag | | Lag |
| Lead-Lag Optimize? | | |
| Vehicle Extension (s) | | 2.0 |
| Recall Mode | | None |
| Walk Time (s) | | 7.0 |
| Flash Dont Walk (s) | | 16.0 |
| Pedestrian Calls (#/hr) | | 10 |
| Act Effct Green (s) | | |
| Actuated g/C Ratio | | |
| v/c Ratio | | |
| Control Delay | | |
| Queue Delay | | |
| Total Delay | | |
| LOS | | |
| Approach Delay | | |
| Approach LOS | | |

| Intersection Summary |
|---|



| Lane Group | EBT | WBT | WBR | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 284 | 233 | 131 | 11 | 1482 | 376 | 713 |
| v/c Ratio | 0.67 | 0.57 | 0.15 | 0.16 | 1.75 | 1.77 | 0.60 |
| Control Delay | 36.2 | 32.9 | 3.9 | 33.6 | 369.7 | 383.9 | 23.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 36.2 | 32.9 | 3.9 | 33.6 | 369.7 | 383.9 | 23.2 |
| Queue Length 50th (ft) | 128 | 99 | 0 | 5 | ~741 | ~313 | 170 |
| Queue Length 95th (ft) | #379 | #308 | 35 | 21 | #866 | #495 | 230 |
| Internal Link Dist (ft) | 665 | 870 | | | 1443 | | 505 |
| Turn Bay Length (ft) | | | | 70 | | 350 | |
| Base Capacity (vph) | 425 | 412 | 868 | 68 | 845 | 213 | 1194 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.67 | 0.57 | 0.15 | 0.16 | 1.75 | 1.77 | 0.60 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBU | SBL | SBT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 140 | 96 | 5 | 147 | 53 | 113 | 10 | 991 | 328 | 5 | 349 | 541 |
| Future Volume (vph) | 140 | 96 | 5 | 147 | 53 | 113 | 10 | 991 | 328 | 5 | 349 | 541 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 14 | 12 | 12 | 13 | 16 | 10 | 11 | 12 | 12 | 13 | 12 |
| Total Lost time (s) | | 5.0 | | | 5.0 | 5.0 | 5.0 | 5.0 | | | 5.0 | 5.0 |
| Lane Util. Factor | | 1.00 | | | 1.00 | 1.00 | 1.00 | 0.95 | | | 1.00 | 0.95 |
| Frpb, ped/bikes | | 1.00 | | | 1.00 | 1.00 | 1.00 | 0.99 | | | 1.00 | 0.96 |
| Flpb, ped/bikes | | 0.99 | | | 0.99 | 1.00 | 0.95 | 1.00 | | | 1.00 | 1.00 |
| Frt | | 1.00 | | | 1.00 | 0.85 | 1.00 | 0.96 | | | 1.00 | 0.97 |
| Flt Protected | | 0.97 | | | 0.96 | 1.00 | 0.95 | 1.00 | | | 0.95 | 1.00 |
| Satd. Flow (prot) | | 1580 | | | 1532 | 1458 | 1447 | 2797 | | | 1555 | 2725 |
| Flt Permitted | | 0.63 | | | 0.63 | 1.00 | 0.16 | 1.00 | | | 0.16 | 1.00 |
| Satd. Flow (perm) | | 1029 | | | 994 | 1458 | 236 | 2797 | | | 254 | 2725 |
| Peak-hour factor, PHF | 0.85 | 0.85 | 0.85 | 0.86 | 0.86 | 0.86 | 0.89 | 0.89 | 0.89 | 0.94 | 0.94 | 0.94 |
| Adj. Flow (vph) | 165 | 113 | 6 | 171 | 62 | 131 | 11 | 1113 | 369 | 5 | 371 | 576 |
| RTOR Reduction (vph) | 0 | 1 | 0 | 0 | 0 | 58 | 0 | 34 | 0 | 0 | 0 | 22 |
| Lane Group Flow (vph) | 0 | 283 | 0 | 0 | 233 | 73 | 11 | 1448 | 0 | 0 | 376 | 691 |
| Confl. Peds. (#/hr) | 32 | | 17 | 17 | | 32 | 127 | | 36 | | 36 | |
| Confl. Bikes (#/hr) | | | 7 | | | 3 | | | 7 | | | |
| Heavy Vehicles (%) | 11% | 11% | 0% | 8% | 18% | 13% | 0% | 8% | 2% | 0% | 8% | 13% |
| Turn Type | Perm | NA | | Perm | NA | pt+ov | Perm | NA | | D.Pm | D.P+P | NA |
| Protected Phases | | 5 | | | 5 | 5 4 | | 1 | | | 4 | 1 4 |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | 1 | |
| Actuated Green, G (s) | | 41.6 | | | 41.6 | 55.6 | 25.8 | 25.8 | | | 34.8 | 39.8 |
| Effective Green, g (s) | | 41.6 | | | 41.6 | 55.6 | 25.8 | 25.8 | | | 34.8 | 39.8 |
| Actuated g/C Ratio | | 0.42 | | | 0.42 | 0.56 | 0.26 | 0.26 | | | 0.35 | 0.40 |
| Clearance Time (s) | | 5.0 | | | 5.0 | | 5.0 | 5.0 | | | 5.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | | 2.0 | 2.0 | | | 2.0 | |
| Lane Grp Cap (vph) | | 428 | | | 413 | 810 | 60 | 721 | | | 205 | 1084 |
| v/s Ratio Prot | | | | | | 0.05 | | c0.52 | | | c0.16 | 0.25 |
| v/s Ratio Perm | | c0.28 | | | 0.23 | | 0.05 | | | | 0.47 | |
| v/c Ratio | | 0.66 | | | 0.56 | 0.09 | 0.18 | 2.01 | | | 1.83 | 0.64 |
| Uniform Delay, d1 | | 23.5 | | | 22.3 | 10.4 | 28.9 | 37.1 | | | 28.7 | 24.3 |
| Progression Factor | | 1.00 | | | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 | 1.00 |
| Incremental Delay, d2 | | 3.0 | | | 1.1 | 0.0 | 6.6 | 458.6 | | | 393.8 | 0.9 |
| Delay (s) | | 26.5 | | | 23.3 | 10.4 | 35.5 | 495.7 | | | 422.4 | 25.2 |
| Level of Service | | C | | | C | B | D | F | | | F | C |
| Approach Delay (s) | | 26.5 | | | 18.7 | | | 492.3 | | | | 162.4 |
| Approach LOS | | C | | | B | | | F | | | | F |

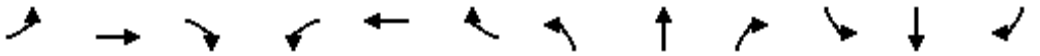
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 286.7 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 1.18 | | |
| Actuated Cycle Length (s) | 100.0 | Sum of lost time (s) | 19.0 |
| Intersection Capacity Utilization | 106.5% | ICU Level of Service | G |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



| Movement | SBR |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | 129 |
| Future Volume (vph) | 129 |
| Ideal Flow (vphpl) | 1900 |
| Lane Width | 12 |
| Total Lost time (s) | |
| Lane Util. Factor | |
| Frpb, ped/bikes | |
| Flpb, ped/bikes | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Peak-hour factor, PHF | 0.94 |
| Adj. Flow (vph) | 137 |
| RTOR Reduction (vph) | 0 |
| Lane Group Flow (vph) | 0 |
| Confl. Peds. (#/hr) | 127 |
| Confl. Bikes (#/hr) | 12 |
| Heavy Vehicles (%) | 6% |
| Turn Type | |
| Protected Phases | |
| Permitted Phases | |
| Actuated Green, G (s) | |
| Effective Green, g (s) | |
| Actuated g/C Ratio | |
| Clearance Time (s) | |
| Vehicle Extension (s) | |
| Lane Grp Cap (vph) | |
| v/s Ratio Prot | |
| v/s Ratio Perm | |
| v/c Ratio | |
| Uniform Delay, d1 | |
| Progression Factor | |
| Incremental Delay, d2 | |
| Delay (s) | |
| Level of Service | |
| Approach Delay (s) | |
| Approach LOS | |

| Intersection Summary |
|---|

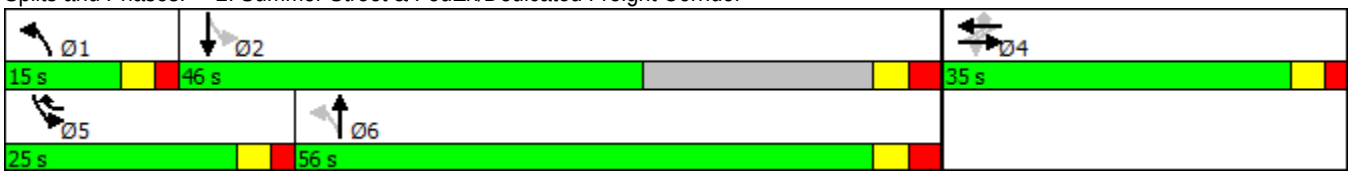


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 31 | 0 | 0 | 16 | 0 | 55 | 0 | 1241 | 21 | 94 | 621 | 0 |
| Future Volume (vph) | 31 | 0 | 0 | 16 | 0 | 55 | 0 | 1241 | 21 | 94 | 621 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 13 | 13 | 13 | 12 | 12 | 12 | 10 | 10 | 10 | 11 | 11 | 11 |
| Storage Length (ft) | 0 | | 0 | 0 | | 60 | 60 | | 0 | 120 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 50 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Frt | | | | | | 0.850 | | 0.997 | | | | |
| Flt Protected | | 0.950 | | | 0.950 | | | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1679 | 0 | 0 | 1624 | 727 | 1596 | 3023 | 0 | 785 | 2991 | 0 |
| Flt Permitted | | 0.746 | | | 0.735 | | | | | 0.121 | | |
| Satd. Flow (perm) | 0 | 1318 | 0 | 0 | 1257 | 727 | 1596 | 3023 | 0 | 100 | 2991 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | | 28 | | 2 | | | | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 203 | | | 352 | | | 675 | | | 1523 | |
| Travel Time (s) | | 4.6 | | | 8.0 | | | 15.3 | | | 34.6 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 100% | 0% | 0% | 0% | 100% | 5% | 0% |
| Adj. Flow (vph) | 34 | 0 | 0 | 17 | 0 | 60 | 0 | 1349 | 23 | 102 | 675 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 34 | 0 | 0 | 17 | 60 | 0 | 1372 | 0 | 102 | 675 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 12 | | | 11 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.10 | 1.10 | 1.10 | 1.14 | 1.14 | 1.14 | 1.25 | 1.25 | 1.25 | 1.19 | 1.19 | 1.19 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | 20 | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | 20 | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | pm+ov | pm+pt | NA | | pm+pt | NA | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Protected Phases | | 4 | | | 4 | 5 | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 4 | | | 4 | | 4 | 6 | 6 | | 2 | | |
| Detector Phase | 4 | 4 | | 4 | 4 | 5 | 1 | 6 | | 5 | 2 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 6.0 | 6.0 | | 6.0 | 6.0 | 6.0 | 6.0 | 10.0 | | 6.0 | 10.0 | |
| Minimum Split (s) | 26.0 | 26.0 | | 26.0 | 26.0 | 11.0 | 11.0 | 24.0 | | 11.0 | 24.0 | |
| Total Split (s) | 35.0 | 35.0 | | 35.0 | 35.0 | 25.0 | 15.0 | 56.0 | | 25.0 | 46.0 | |
| Total Split (%) | 30.2% | 30.2% | | 30.2% | 30.2% | 21.6% | 12.9% | 48.3% | | 21.6% | 39.7% | |
| Maximum Green (s) | 30.0 | 30.0 | | 30.0 | 30.0 | 20.0 | 10.0 | 50.0 | | 20.0 | 40.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 3.0 | | 2.0 | 3.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | 5.0 | 5.0 | 6.0 | | 5.0 | 6.0 | |
| Lead/Lag | | | | | | Lead | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | None | None | | None | None | None | None | Ped | | None | Max | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | | 7.0 | | | | |
| Flash Dont Walk (s) | 14.0 | 14.0 | | 14.0 | 14.0 | | | 9.0 | | | | |
| Pedestrian Calls (#/hr) | 10 | 10 | | 10 | 10 | | | 10 | | | | |
| Act Effct Green (s) | | 9.1 | | | 9.1 | 21.9 | | 53.3 | | 72.4 | 74.2 | |
| Actuated g/C Ratio | | 0.11 | | | 0.11 | 0.25 | | 0.62 | | 0.84 | 0.86 | |
| v/c Ratio | | 0.25 | | | 0.13 | 0.29 | | 0.74 | | 0.55 | 0.26 | |
| Control Delay | | 41.5 | | | 39.2 | 16.6 | | 18.9 | | 22.4 | 3.1 | |
| Queue Delay | | 0.0 | | | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | |
| Total Delay | | 41.5 | | | 39.2 | 16.6 | | 18.9 | | 22.4 | 3.1 | |
| LOS | | D | | | D | B | | B | | C | A | |
| Approach Delay | | 41.5 | | | 21.6 | | | 18.9 | | | 5.6 | |
| Approach LOS | | D | | | C | | | B | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 116 | | | |
| Actuated Cycle Length: 86.5 | | | |
| Natural Cycle: 90 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 0.74 | | | |
| Intersection Signal Delay: 14.8 | | Intersection LOS: B | |
| Intersection Capacity Utilization 66.6% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 2: Summer Street & FedEx/Dedicated Freight Corridor

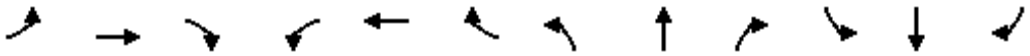




| Lane Group | EBT | WBT | WBR | NBT | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 34 | 17 | 60 | 1372 | 102 | 675 |
| v/c Ratio | 0.25 | 0.13 | 0.29 | 0.74 | 0.55 | 0.26 |
| Control Delay | 41.5 | 39.2 | 16.6 | 18.9 | 22.4 | 3.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 41.5 | 39.2 | 16.6 | 18.9 | 22.4 | 3.1 |
| Queue Length 50th (ft) | 18 | 9 | 13 | 276 | 10 | 37 |
| Queue Length 95th (ft) | 48 | 29 | 41 | #638 | 79 | 109 |
| Internal Link Dist (ft) | 123 | 272 | | 595 | | 1443 |
| Turn Bay Length (ft) | | | 60 | | 120 | |
| Base Capacity (vph) | 469 | 447 | 266 | 1905 | 246 | 2523 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.07 | 0.04 | 0.23 | 0.72 | 0.41 | 0.27 |

Intersection Summary

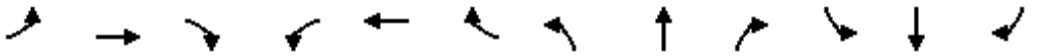
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 31 | 0 | 0 | 16 | 0 | 55 | 0 | 1241 | 21 | 94 | 621 | 0 |
| Future Volume (vph) | 31 | 0 | 0 | 16 | 0 | 55 | 0 | 1241 | 21 | 94 | 621 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 13 | 13 | 13 | 12 | 12 | 12 | 10 | 10 | 10 | 11 | 11 | 11 |
| Total Lost time (s) | | 5.0 | | | 5.0 | 5.0 | | 6.0 | | 5.0 | 6.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | 1.00 | | 0.95 | | 1.00 | 0.95 | |
| Frt | | 1.00 | | | 1.00 | 0.85 | | 1.00 | | 1.00 | 1.00 | |
| Flt Protected | | 0.95 | | | 0.95 | 1.00 | | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 1679 | | | 1624 | 727 | | 3025 | | 785 | 2991 | |
| Flt Permitted | | 0.75 | | | 0.73 | 1.00 | | 1.00 | | 0.12 | 1.00 | |
| Satd. Flow (perm) | | 1319 | | | 1257 | 727 | | 3025 | | 100 | 2991 | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 34 | 0 | 0 | 17 | 0 | 60 | 0 | 1349 | 23 | 102 | 675 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 22 | 0 | 1 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 34 | 0 | 0 | 17 | 38 | 0 | 1371 | 0 | 102 | 675 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 100% | 0% | 0% | 0% | 100% | 5% | 0% |
| Turn Type | Perm | NA | | Perm | NA | pm+ov | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | | 4 | | | 4 | 5 | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 4 | | | 4 | | 4 | 6 | 6 | | 2 | | |
| Actuated Green, G (s) | | 6.2 | | | 6.2 | 19.2 | | 53.4 | | 71.4 | 71.4 | |
| Effective Green, g (s) | | 6.2 | | | 6.2 | 19.2 | | 53.4 | | 71.4 | 71.4 | |
| Actuated g/C Ratio | | 0.07 | | | 0.07 | 0.22 | | 0.60 | | 0.81 | 0.81 | |
| Clearance Time (s) | | 5.0 | | | 5.0 | 5.0 | | 6.0 | | 5.0 | 6.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | 2.0 | | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | | 92 | | | 87 | 198 | | 1823 | | 181 | 2410 | |
| v/s Ratio Prot | | | | | | 0.03 | | c0.45 | | c0.08 | 0.23 | |
| v/s Ratio Perm | | c0.03 | | | 0.01 | 0.02 | | | | 0.37 | | |
| v/c Ratio | | 0.37 | | | 0.20 | 0.19 | | 0.75 | | 0.56 | 0.28 | |
| Uniform Delay, d1 | | 39.3 | | | 38.8 | 28.4 | | 12.8 | | 9.8 | 2.2 | |
| Progression Factor | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 0.9 | | | 0.4 | 0.2 | | 1.6 | | 2.4 | 0.3 | |
| Delay (s) | | 40.2 | | | 39.2 | 28.5 | | 14.4 | | 12.2 | 2.4 | |
| Level of Service | | D | | | D | C | | B | | B | A | |
| Approach Delay (s) | | 40.2 | | | 30.9 | | | 14.4 | | | 3.7 | |
| Approach LOS | | D | | | C | | | B | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 11.7 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.69 | | |
| Actuated Cycle Length (s) | 88.6 | Sum of lost time (s) | 16.0 |
| Intersection Capacity Utilization | 66.6% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



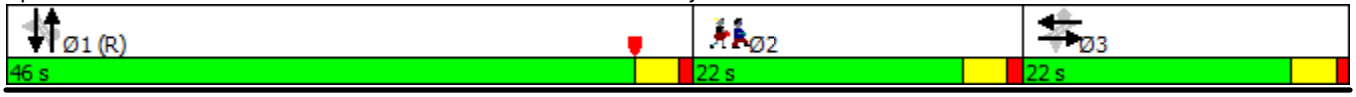
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 16 | 0 | 10 | 29 | 0 | 37 | 31 | 1130 | 25 | 36 | 585 | 47 |
| Future Volume (vph) | 16 | 0 | 10 | 29 | 0 | 37 | 31 | 1130 | 25 | 36 | 585 | 47 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 14 | 12 | 12 | 12 | 12 | 12 | 10 | 10 | 12 | 10 | 10 | 10 |
| Storage Length (ft) | 0 | | 0 | 0 | | 100 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Ped Bike Factor | | | | | | | | 1.00 | | | 0.98 | |
| Frt | | 0.947 | | | | 0.850 | | 0.997 | | | 0.989 | |
| Flt Protected | | 0.970 | | | 0.950 | | | 0.999 | | | 0.997 | |
| Satd. Flow (prot) | 0 | 1347 | 0 | 0 | 1624 | 1454 | 0 | 2989 | 0 | 0 | 2845 | 0 |
| Flt Permitted | | 0.857 | | | 0.730 | | | 0.919 | | | 0.761 | |
| Satd. Flow (perm) | 0 | 1190 | 0 | 0 | 1248 | 1454 | 0 | 2744 | 0 | 0 | 2172 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 362 | | | 235 | | | 355 | | | 675 | |
| Travel Time (s) | | 8.2 | | | 5.3 | | | 8.1 | | | 15.3 | |
| Confl. Peds. (#/hr) | | | | | | | 126 | | | | | 126 |
| Confl. Bikes (#/hr) | | | | | | | | | | | | 4 |
| Peak Hour Factor | 0.64 | 0.92 | 0.64 | 0.92 | 0.92 | 0.92 | 0.97 | 0.97 | 0.92 | 0.92 | 0.89 | 0.89 |
| Heavy Vehicles (%) | 8% | 0% | 30% | 0% | 0% | 0% | 3% | 1% | 0% | 0% | 3% | 0% |
| Parking (#/hr) | | | | | | | 1 | | | | | 1 |
| Adj. Flow (vph) | 25 | 0 | 16 | 32 | 0 | 40 | 32 | 1165 | 27 | 39 | 657 | 53 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 41 | 0 | 0 | 32 | 40 | 0 | 1224 | 0 | 0 | 749 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.05 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.25 | 1.25 | 1.14 | 1.25 | 1.25 | 1.25 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | 20 | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | 20 | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |

| Lane Group | Ø2 |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | |
| Future Volume (vph) | |
| Ideal Flow (vphpl) | |
| Lane Width (ft) | |
| Storage Length (ft) | |
| Storage Lanes | |
| Taper Length (ft) | |
| Lane Util. Factor | |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Right Turn on Red | |
| Satd. Flow (RTOR) | |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | |
| Heavy Vehicles (%) | |
| Parking (#/hr) | |
| Adj. Flow (vph) | |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | |
| Enter Blocked Intersection | |
| Lane Alignment | |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | |
| Turning Speed (mph) | |
| Number of Detectors | |
| Detector Template | |
| Leading Detector (ft) | |
| Trailing Detector (ft) | |
| Detector 1 Position(ft) | |
| Detector 1 Size(ft) | |
| Detector 1 Type | |
| Detector 1 Channel | |
| Detector 1 Extend (s) | |
| Detector 1 Queue (s) | |
| Detector 1 Delay (s) | |
| Detector 2 Position(ft) | |
| Detector 2 Size(ft) | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | Perm | Perm | NA | | Perm | NA | |
| Protected Phases | | 3 | | | 3 | | | 1 | | | 1 | |
| Permitted Phases | 3 | | | 3 | | 3 | 1 | | | 1 | | |
| Detector Phase | 3 | 3 | | 3 | 3 | 3 | 1 | 1 | | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Minimum Split (s) | 22.0 | 22.0 | | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | | 22.0 | 22.0 | |
| Total Split (s) | 22.0 | 22.0 | | 22.0 | 22.0 | 22.0 | 46.0 | 46.0 | | 46.0 | 46.0 | |
| Total Split (%) | 24.4% | 24.4% | | 24.4% | 24.4% | 24.4% | 51.1% | 51.1% | | 51.1% | 51.1% | |
| Maximum Green (s) | 18.0 | 18.0 | | 18.0 | 18.0 | 18.0 | 42.0 | 42.0 | | 42.0 | 42.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | 0.0 | | 0.0 | | | 0.0 | |
| Total Lost Time (s) | | 4.0 | | | 4.0 | 4.0 | | 4.0 | | | 4.0 | |
| Lead/Lag | | | | | | | Lead | Lead | | Lead | Lead | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | Ped | Ped | | Ped | Ped | Ped | C-Max | C-Max | | C-Max | C-Max | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 11.0 | 11.0 | | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | | 11.0 | 11.0 | |
| Pedestrian Calls (#/hr) | 30 | 30 | | 30 | 30 | 30 | 30 | 30 | | 30 | 30 | |
| Act Effct Green (s) | | 18.0 | | | 18.0 | 18.0 | | 42.0 | | | 42.0 | |
| Actuated g/C Ratio | | 0.20 | | | 0.20 | 0.20 | | 0.47 | | | 0.47 | |
| v/c Ratio | | 0.17 | | | 0.13 | 0.14 | | 0.96 | | | 0.74 | |
| Control Delay | | 32.1 | | | 31.2 | 31.2 | | 41.0 | | | 25.0 | |
| Queue Delay | | 0.0 | | | 0.0 | 0.0 | | 43.1 | | | 0.0 | |
| Total Delay | | 32.1 | | | 31.2 | 31.2 | | 84.1 | | | 25.0 | |
| LOS | | C | | | C | C | | F | | | C | |
| Approach Delay | | 32.1 | | | 31.2 | | | 84.1 | | | 25.0 | |
| Approach LOS | | C | | | C | | | F | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 0 (0%), Referenced to phase 1:NBSB, Start of Yellow | | | |
| Natural Cycle: 90 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.96 | | | |
| Intersection Signal Delay: 60.1 | | Intersection LOS: E | |
| Intersection Capacity Utilization 75.4% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 3: Summer Street & Elkins Street/Elkins Driveway



| Lane Group | Ø2 |
|---|---|
| Detector 2 Type | |
| Detector 2 Channel | |
| Detector 2 Extend (s) | |
| Turn Type | |
| Protected Phases | 2 |
| Permitted Phases | |
| Detector Phase | |
| Switch Phase | |
| Minimum Initial (s) | 4.0 |
| Minimum Split (s) | 22.0 |
| Total Split (s) | 22.0 |
| Total Split (%) | 24% |
| Maximum Green (s) | 18.0 |
| Yellow Time (s) | 3.0 |
| All-Red Time (s) | 1.0 |
| Lost Time Adjust (s) | |
| Total Lost Time (s) | |
| Lead/Lag | Lag |
| Lead-Lag Optimize? | |
| Vehicle Extension (s) | 2.0 |
| Recall Mode | Max |
| Walk Time (s) | 7.0 |
| Flash Dont Walk (s) | 11.0 |
| Pedestrian Calls (#/hr) | 60 |
| Act Effct Green (s) | |
| Actuated g/C Ratio | |
| v/c Ratio | |
| Control Delay | |
| Queue Delay | |
| Total Delay | |
| LOS | |
| Approach Delay | |
| Approach LOS | |

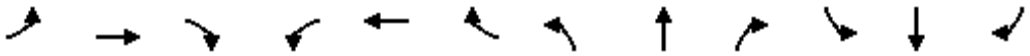
| Intersection Summary |
|---|



| Lane Group | EBT | WBT | WBR | NBT | SBT |
|---|---|---|---|---|---|
| Lane Group Flow (vph) | 41 | 32 | 40 | 1224 | 749 |
| v/c Ratio | 0.17 | 0.13 | 0.14 | 0.96 | 0.74 |
| Control Delay | 32.1 | 31.2 | 31.2 | 41.0 | 25.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 43.1 | 0.0 |
| Total Delay | 32.1 | 31.2 | 31.2 | 84.1 | 25.0 |
| Queue Length 50th (ft) | 19 | 15 | 19 | 339 | 175 |
| Queue Length 95th (ft) | 48 | 40 | 47 | #496 | 245 |
| Internal Link Dist (ft) | 282 | 155 | | 275 | 595 |
| Turn Bay Length (ft) | | | 100 | | |
| Base Capacity (vph) | 238 | 249 | 290 | 1280 | 1013 |
| Starvation Cap Reductn | 0 | 0 | 0 | 207 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.17 | 0.13 | 0.14 | 1.14 | 0.74 |

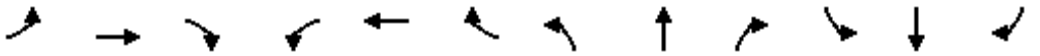
Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 16 | 0 | 10 | 29 | 0 | 37 | 31 | 1130 | 25 | 36 | 585 | 47 |
| Future Volume (vph) | 16 | 0 | 10 | 29 | 0 | 37 | 31 | 1130 | 25 | 36 | 585 | 47 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 14 | 12 | 12 | 12 | 12 | 12 | 10 | 10 | 12 | 10 | 10 | 10 |
| Total Lost time (s) | | 4.0 | | | 4.0 | 4.0 | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | 1.00 | | 0.95 | | | 0.95 | |
| Frpb, ped/bikes | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | | 0.98 | |
| Flpb, ped/bikes | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Frt | | 0.95 | | | 1.00 | 0.85 | | 1.00 | | | 0.99 | |
| Flt Protected | | 0.97 | | | 0.95 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | | 1348 | | | 1624 | 1454 | | 2981 | | | 2847 | |
| Flt Permitted | | 0.86 | | | 0.73 | 1.00 | | 0.92 | | | 0.76 | |
| Satd. Flow (perm) | | 1191 | | | 1249 | 1454 | | 2742 | | | 2173 | |
| Peak-hour factor, PHF | 0.64 | 0.92 | 0.64 | 0.92 | 0.92 | 0.92 | 0.97 | 0.97 | 0.92 | 0.92 | 0.89 | 0.89 |
| Adj. Flow (vph) | 25 | 0 | 16 | 32 | 0 | 40 | 32 | 1165 | 27 | 39 | 657 | 53 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 41 | 0 | 0 | 32 | 40 | 0 | 1224 | 0 | 0 | 749 | 0 |
| Confl. Peds. (#/hr) | | | | | | | 126 | | | | | 126 |
| Confl. Bikes (#/hr) | | | | | | | | | | | | 4 |
| Heavy Vehicles (%) | 8% | 0% | 30% | 0% | 0% | 0% | 3% | 1% | 0% | 0% | 3% | 0% |
| Parking (#/hr) | | | | | | | 1 | | | | | 1 |
| Turn Type | Perm | NA | | Perm | NA | Perm | Perm | NA | | Perm | NA | |
| Protected Phases | | 3 | | | 3 | | | 1 | | | 1 | |
| Permitted Phases | 3 | | | 3 | | 3 | 1 | | | 1 | | |
| Actuated Green, G (s) | | 18.0 | | | 18.0 | 18.0 | | 42.0 | | | 42.0 | |
| Effective Green, g (s) | | 18.0 | | | 18.0 | 18.0 | | 42.0 | | | 42.0 | |
| Actuated g/C Ratio | | 0.20 | | | 0.20 | 0.20 | | 0.47 | | | 0.47 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | 4.0 | | 4.0 | | | 4.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | 2.0 | | 2.0 | | | 2.0 | |
| Lane Grp Cap (vph) | | 238 | | | 249 | 290 | | 1279 | | | 1014 | |
| v/s Ratio Prot | | | | | | | | | | | | |
| v/s Ratio Perm | | c0.03 | | | 0.03 | 0.03 | | c0.45 | | | 0.34 | |
| v/c Ratio | | 0.17 | | | 0.13 | 0.14 | | 0.96 | | | 0.74 | |
| Uniform Delay, d1 | | 29.8 | | | 29.6 | 29.6 | | 23.1 | | | 19.5 | |
| Progression Factor | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 0.1 | | | 0.1 | 0.1 | | 16.8 | | | 4.8 | |
| Delay (s) | | 30.0 | | | 29.6 | 29.7 | | 39.9 | | | 24.4 | |
| Level of Service | | C | | | C | C | | D | | | C | |
| Approach Delay (s) | | 30.0 | | | 29.7 | | | 39.9 | | | 24.4 | |
| Approach LOS | | C | | | C | | | D | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 33.8 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.55 | | |
| Actuated Cycle Length (s) | 90.0 | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 75.4% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

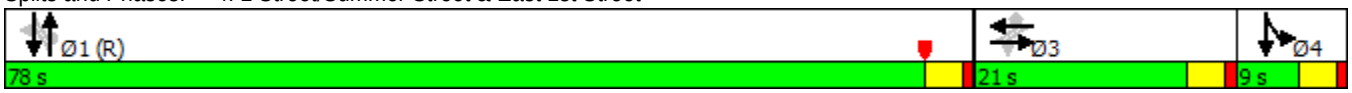


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 48 | 59 | 41 | 28 | 101 | 365 | 41 | 758 | 46 | 157 | 398 | 94 |
| Future Volume (vph) | 48 | 59 | 41 | 28 | 101 | 365 | 41 | 758 | 46 | 157 | 398 | 94 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 15 | 12 | 12 | 10 | 10 | 12 | 9 | 9 | 12 | 12 | 12 |
| Storage Length (ft) | 0 | | 0 | 0 | | 100 | 100 | | 0 | 100 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 0 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | 0.97 | | | 0.99 | 0.95 | | 0.99 | | 0.97 | 0.94 | |
| Frt | | 0.962 | | | | 0.850 | | 0.992 | | | 0.971 | |
| Flt Protected | | 0.984 | | | 0.989 | | | 0.998 | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1608 | 0 | 0 | 1511 | 1343 | 0 | 2761 | 0 | 1413 | 1498 | 0 |
| Flt Permitted | | 0.670 | | | 0.851 | | | 0.598 | | 0.282 | | |
| Satd. Flow (perm) | 0 | 1087 | 0 | 0 | 1291 | 1281 | 0 | 1654 | 0 | 407 | 1498 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 15 | | | | 254 | | 12 | | | 34 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 540 | | | 576 | | | 340 | | | 355 | |
| Travel Time (s) | | 12.3 | | | 13.1 | | | 7.7 | | | 8.1 | |
| Confl. Peds. (#/hr) | 16 | | 17 | 17 | | 16 | 104 | | 44 | 44 | | 104 |
| Confl. Bikes (#/hr) | | | 2 | | | 2 | | | 11 | | | 2 |
| Peak Hour Factor | 0.84 | 0.84 | 0.84 | 0.83 | 0.83 | 0.83 | 0.94 | 0.94 | 0.94 | 0.91 | 0.91 | 0.91 |
| Heavy Vehicles (%) | 12% | 6% | 7% | 17% | 1% | 1% | 2% | 2% | 38% | 15% | 3% | 8% |
| Adj. Flow (vph) | 57 | 70 | 49 | 34 | 122 | 440 | 44 | 806 | 49 | 173 | 437 | 103 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 176 | 0 | 0 | 156 | 440 | 0 | 899 | 0 | 173 | 540 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.01 | 1.14 | 1.14 | 1.25 | 1.25 | 1.14 | 1.30 | 1.30 | 1.14 | 1.14 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | 20 | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | 20 | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | Perm | Perm | NA | | D.P+P | NA | |
| Protected Phases | | 3 | | | 3 | | | 1 | | 4 | 1 4 | |
| Permitted Phases | 3 | | | 3 | | 3 | 1 | | | 1 | | |
| Detector Phase | 3 | 3 | | 3 | 3 | 3 | 1 | 1 | | 4 | 1 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 10.0 | 10.0 | | 4.0 | | |
| Minimum Split (s) | 20.0 | 20.0 | | 20.0 | 20.0 | 20.0 | 22.0 | 22.0 | | 8.0 | | |
| Total Split (s) | 21.0 | 21.0 | | 21.0 | 21.0 | 21.0 | 78.0 | 78.0 | | 9.0 | | |
| Total Split (%) | 19.4% | 19.4% | | 19.4% | 19.4% | 19.4% | 72.2% | 72.2% | | 8.3% | | |
| Maximum Green (s) | 17.0 | 17.0 | | 17.0 | 17.0 | 17.0 | 74.0 | 74.0 | | 5.0 | | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | | 1.0 | | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | 0.0 | | 0.0 | | 0.0 | | |
| Total Lost Time (s) | | 4.0 | | | 4.0 | 4.0 | | 4.0 | | 4.0 | | |
| Lead/Lag | Lead | Lead | | Lead | Lead | Lead | | | | Lag | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 2.0 | | |
| Recall Mode | Max | Max | | Max | Max | Max | C-Max | C-Max | | None | | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | | | |
| Flash Dont Walk (s) | 9.0 | 9.0 | | 9.0 | 9.0 | 9.0 | 11.0 | 11.0 | | | | |
| Pedestrian Calls (#/hr) | 60 | 60 | | 60 | 60 | 60 | 60 | 60 | | | | |
| Act Effct Green (s) | | 17.0 | | | 17.0 | 17.0 | | 74.0 | | 79.0 | 83.0 | |
| Actuated g/C Ratio | | 0.16 | | | 0.16 | 0.16 | | 0.69 | | 0.73 | 0.77 | |
| v/c Ratio | | 0.96 | | | 0.77 | 1.06 | | 0.79 | | 0.50 | 0.47 | |
| Control Delay | | 100.1 | | | 68.8 | 80.8 | | 18.0 | | 8.9 | 5.7 | |
| Queue Delay | | 0.0 | | | 0.0 | 0.0 | | 0.0 | | 0.0 | 2.4 | |
| Total Delay | | 100.1 | | | 68.8 | 80.8 | | 18.0 | | 8.9 | 8.1 | |
| LOS | | F | | | E | F | | B | | A | A | |
| Approach Delay | | 100.1 | | | 77.7 | | | 18.0 | | | 8.3 | |
| Approach LOS | | F | | | E | | | B | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 108 | | | |
| Actuated Cycle Length: 108 | | | |
| Offset: 0 (0%), Referenced to phase 1:NBSB, Start of Yellow | | | |
| Natural Cycle: 80 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 1.06 | | | |
| Intersection Signal Delay: 36.1 | | Intersection LOS: D | |
| Intersection Capacity Utilization 83.5% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 4: L Street/Summer Street & East 1st Street



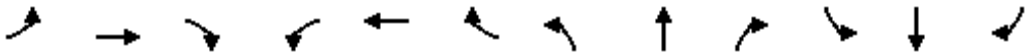


| Lane Group | EBT | WBT | WBR | NBT | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 176 | 156 | 440 | 899 | 173 | 540 |
| v/c Ratio | 0.96 | 0.77 | 1.06 | 0.79 | 0.50 | 0.47 |
| Control Delay | 100.1 | 68.8 | 80.8 | 18.0 | 8.9 | 5.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.4 |
| Total Delay | 100.1 | 68.8 | 80.8 | 18.0 | 8.9 | 8.1 |
| Queue Length 50th (ft) | 113 | 105 | ~176 | 198 | 26 | 103 |
| Queue Length 95th (ft) | #227 | #183 | #308 | 303 | 44 | 156 |
| Internal Link Dist (ft) | 460 | 496 | | 260 | | 275 |
| Turn Bay Length (ft) | | | 100 | | 100 | |
| Base Capacity (vph) | 183 | 203 | 415 | 1137 | 344 | 1159 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 471 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.96 | 0.77 | 1.06 | 0.79 | 0.50 | 0.78 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

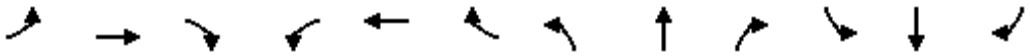
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 48 | 59 | 41 | 28 | 101 | 365 | 41 | 758 | 46 | 157 | 398 | 94 |
| Future Volume (vph) | 48 | 59 | 41 | 28 | 101 | 365 | 41 | 758 | 46 | 157 | 398 | 94 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 15 | 12 | 12 | 10 | 10 | 12 | 9 | 9 | 12 | 12 | 12 |
| Total Lost time (s) | | 4.0 | | | 4.0 | 4.0 | | 4.0 | | 4.0 | 4.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | 1.00 | | 0.95 | | 1.00 | 1.00 | |
| Frpb, ped/bikes | | 0.98 | | | 1.00 | 0.95 | | 0.99 | | 1.00 | 0.94 | |
| Flpb, ped/bikes | | 0.99 | | | 0.99 | 1.00 | | 1.00 | | 0.99 | 1.00 | |
| Frt | | 0.96 | | | 1.00 | 0.85 | | 0.99 | | 1.00 | 0.97 | |
| Flt Protected | | 0.98 | | | 0.99 | 1.00 | | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 1598 | | | 1501 | 1281 | | 2759 | | 1402 | 1498 | |
| Flt Permitted | | 0.67 | | | 0.85 | 1.00 | | 0.60 | | 0.28 | 1.00 | |
| Satd. Flow (perm) | | 1087 | | | 1291 | 1281 | | 1655 | | 416 | 1498 | |
| Peak-hour factor, PHF | 0.84 | 0.84 | 0.84 | 0.83 | 0.83 | 0.83 | 0.94 | 0.94 | 0.94 | 0.91 | 0.91 | 0.91 |
| Adj. Flow (vph) | 57 | 70 | 49 | 34 | 122 | 440 | 44 | 806 | 49 | 173 | 437 | 103 |
| RTOR Reduction (vph) | 0 | 13 | 0 | 0 | 0 | 214 | 0 | 4 | 0 | 0 | 8 | 0 |
| Lane Group Flow (vph) | 0 | 163 | 0 | 0 | 156 | 226 | 0 | 895 | 0 | 173 | 532 | 0 |
| Confl. Peds. (#/hr) | 16 | | 17 | 17 | | 16 | 104 | | 44 | 44 | | 104 |
| Confl. Bikes (#/hr) | | | 2 | | | 2 | | | 11 | | | 2 |
| Heavy Vehicles (%) | 12% | 6% | 7% | 17% | 1% | 1% | 2% | 2% | 38% | 15% | 3% | 8% |
| Turn Type | Perm | NA | | Perm | NA | Perm | Perm | NA | | D.P+P | NA | |
| Protected Phases | | 3 | | | 3 | | | 1 | | 4 | 1 4 | |
| Permitted Phases | 3 | | | 3 | | 3 | 1 | | | 1 | | |
| Actuated Green, G (s) | | 17.0 | | | 17.0 | 17.0 | | 74.0 | | 79.0 | 83.0 | |
| Effective Green, g (s) | | 17.0 | | | 17.0 | 17.0 | | 74.0 | | 79.0 | 83.0 | |
| Actuated g/C Ratio | | 0.16 | | | 0.16 | 0.16 | | 0.69 | | 0.73 | 0.77 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | 4.0 | | 4.0 | | 4.0 | | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | 3.0 | | 3.0 | | 2.0 | | |
| Lane Grp Cap (vph) | | 171 | | | 203 | 201 | | 1133 | | 349 | 1151 | |
| v/s Ratio Prot | | | | | | | | | | 0.02 | c0.36 | |
| v/s Ratio Perm | | 0.15 | | | 0.12 | c0.18 | | c0.54 | | 0.34 | | |
| v/c Ratio | | 0.96 | | | 0.77 | 1.12 | | 0.79 | | 0.50 | 0.46 | |
| Uniform Delay, d1 | | 45.1 | | | 43.6 | 45.5 | | 11.7 | | 4.9 | 4.5 | |
| Progression Factor | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 58.0 | | | 23.9 | 100.9 | | 5.6 | | 0.4 | 0.1 | |
| Delay (s) | | 103.1 | | | 67.5 | 146.4 | | 17.3 | | 5.3 | 4.6 | |
| Level of Service | | F | | | E | F | | B | | A | A | |
| Approach Delay (s) | | 103.1 | | | 125.7 | | | 17.3 | | | 4.8 | |
| Approach LOS | | F | | | F | | | B | | | A | |

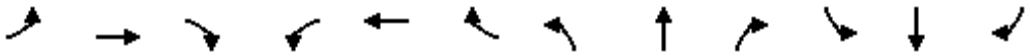
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 47.0 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.84 | | |
| Actuated Cycle Length (s) | 108.0 | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 83.5% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 16 | 5 | 21 | 10 | 16 | 60 | 41 | 749 | 31 | 10 | 448 | 21 |
| Future Volume (vph) | 16 | 5 | 21 | 10 | 16 | 60 | 41 | 749 | 31 | 10 | 448 | 21 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 16 | 12 | 12 | 16 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.932 | | | 0.905 | | | 0.995 | | | 0.994 | |
| Flt Protected | | 0.981 | | | 0.994 | | | 0.997 | | | 0.999 | |
| Satd. Flow (prot) | 0 | 1459 | 0 | 0 | 1402 | 0 | 0 | 1835 | 0 | 0 | 1851 | 0 |
| Flt Permitted | | 0.981 | | | 0.994 | | | 0.997 | | | 0.999 | |
| Satd. Flow (perm) | 0 | 1459 | 0 | 0 | 1402 | 0 | 0 | 1835 | 0 | 0 | 1851 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 429 | | | 453 | | | 298 | | | 340 | |
| Travel Time (s) | | 9.8 | | | 10.3 | | | 6.8 | | | 7.7 | |
| Confl. Peds. (#/hr) | 15 | | 20 | 20 | | 15 | 90 | | 41 | 41 | | 90 |
| Confl. Bikes (#/hr) | | | | | | 1 | | | 9 | | | |
| Peak Hour Factor | 0.57 | 0.57 | 0.57 | 0.88 | 0.88 | 0.88 | 0.94 | 0.94 | 0.94 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 10% | 7% | 0% | 3% | 4% | 25% | 0% | 4% | 5% |
| Adj. Flow (vph) | 28 | 9 | 37 | 11 | 18 | 68 | 44 | 797 | 33 | 10 | 467 | 22 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 74 | 0 | 0 | 97 | 0 | 0 | 874 | 0 | 0 | 499 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.25 | 1.14 | 1.14 | 1.25 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 0.97 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 86.4% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 16 | 5 | 21 | 10 | 16 | 60 | 41 | 749 | 31 | 10 | 448 | 21 |
| Future Volume (Veh/h) | 16 | 5 | 21 | 10 | 16 | 60 | 41 | 749 | 31 | 10 | 448 | 21 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.57 | 0.57 | 0.57 | 0.88 | 0.88 | 0.88 | 0.94 | 0.94 | 0.94 | 0.96 | 0.96 | 0.96 |
| Hourly flow rate (vph) | 28 | 9 | 37 | 11 | 18 | 68 | 44 | 797 | 33 | 10 | 467 | 22 |
| Pedestrians | | 90 | | | 41 | | | 20 | | | 15 | |
| Lane Width (ft) | | 10.0 | | | 10.0 | | | 16.0 | | | 16.0 | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Percent Blockage | | 6 | | | 3 | | | 2 | | | 2 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | 602 | | | 340 | |
| pX, platoon unblocked | 0.80 | 0.80 | 0.91 | 0.80 | 0.80 | 0.75 | 0.91 | | | 0.75 | | |
| vC, conflicting volume | 1582 | 1547 | 588 | 1502 | 1542 | 870 | 579 | | | 871 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1354 | 1311 | 500 | 1254 | 1304 | 663 | 490 | | | 665 | | |
| tC, single (s) | *4.0 | *4.0 | *5.0 | *4.0 | *4.0 | *4.0 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.6 | 4.1 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 87 | 97 | 93 | 96 | 93 | 86 | 95 | | | 99 | | |
| cM capacity (veh/h) | 220 | 271 | 568 | 267 | 271 | 501 | 913 | | | 683 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 74 | 97 | 874 | 499 |
| Volume Left | 28 | 11 | 44 | 10 |
| Volume Right | 37 | 68 | 33 | 22 |
| cSH | 328 | 399 | 913 | 683 |
| Volume to Capacity | 0.23 | 0.24 | 0.05 | 0.01 |
| Queue Length 95th (ft) | 21 | 24 | 4 | 1 |
| Control Delay (s) | 19.1 | 16.9 | 1.3 | 0.4 |
| Lane LOS | C | C | A | A |
| Approach Delay (s) | 19.1 | 16.9 | 1.3 | 0.4 |
| Approach LOS | C | C | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 2.8 | | | |
| Intersection Capacity Utilization | 86.4% | ICU Level of Service | E | |
| Analysis Period (min) | 15 | | | |

* User Entered Value



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBU | NBL | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 17 | 0 | 21 | 5 | 16 | 31 | 5 | 21 | 748 | 31 | 16 | 436 |
| Future Volume (vph) | 17 | 0 | 21 | 5 | 16 | 31 | 5 | 21 | 748 | 31 | 16 | 436 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 12 | 16 | 12 | 12 | 16 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.925 | | | 0.919 | | | | 0.995 | | | 0.994 |
| Flt Protected | | 0.978 | | | 0.995 | | | | 0.998 | | | 0.998 |
| Satd. Flow (prot) | 0 | 1258 | 0 | 0 | 1313 | 0 | 0 | 0 | 1853 | 0 | 0 | 1834 |
| Flt Permitted | | 0.978 | | | 0.995 | | | | 0.998 | | | 0.998 |
| Satd. Flow (perm) | 0 | 1258 | 0 | 0 | 1313 | 0 | 0 | 0 | 1853 | 0 | 0 | 1834 |
| Link Speed (mph) | | 30 | | | 30 | | | | 30 | | | 30 |
| Link Distance (ft) | | 638 | | | 716 | | | | 304 | | | 298 |
| Travel Time (s) | | 14.5 | | | 16.3 | | | | 6.9 | | | 6.8 |
| Confl. Peds. (#/hr) | 22 | | 31 | 31 | | 22 | | 75 | | 46 | 46 | |
| Confl. Bikes (#/hr) | | | | | | | | | | 9 | | |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.67 | 0.67 | 0.67 | 0.92 | 0.94 | 0.94 | 0.94 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 0% | 0% | 6% | 0% | 0% | 0% | 0% | 5% | 4% | 0% | 6% | 5% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | | | | | |
| Adj. Flow (vph) | 20 | 0 | 25 | 7 | 24 | 46 | 5 | 22 | 796 | 33 | 17 | 469 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 45 | 0 | 0 | 77 | 0 | 0 | 0 | 856 | 0 | 0 | 510 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | R NA | Left | Left | Right | Left | Left |
| Median Width(ft) | | 0 | | | 0 | | | | 0 | | | 0 |
| Link Offset(ft) | | 0 | | | 0 | | | | 0 | | | 0 |
| Crosswalk Width(ft) | | 16 | | | 16 | | | | 16 | | | 16 |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 0.97 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 9 | 15 | | 9 | 15 | |
| Sign Control | | Stop | | | Stop | | | | Free | | | Free |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 76.3% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |



| Lane Group | SBR |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | 22 |
| Future Volume (vph) | 22 |
| Ideal Flow (vphpl) | 1900 |
| Lane Width (ft) | 12 |
| Lane Util. Factor | 1.00 |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | 0 |
| Flt Permitted | |
| Satd. Flow (perm) | 0 |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | 75 |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | 0.93 |
| Heavy Vehicles (%) | 0% |
| Parking (#/hr) | |
| Adj. Flow (vph) | 24 |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | 0 |
| Enter Blocked Intersection | No |
| Lane Alignment | Right |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | 1.14 |
| Turning Speed (mph) | 9 |
| Sign Control | |

| Intersection Summary |
|---|

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBU | NBL | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 17 | 0 | 21 | 5 | 16 | 31 | 5 | 21 | 748 | 31 | 16 | 436 |
| Future Volume (Veh/h) | 17 | 0 | 21 | 5 | 16 | 31 | 5 | 21 | 748 | 31 | 16 | 436 |
| Sign Control | | Stop | | | Stop | | | | Free | | | Free |
| Grade | | 0% | | | 0% | | | | 0% | | | 0% |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.67 | 0.67 | 0.67 | 0.92 | 0.94 | 0.94 | 0.94 | 0.93 | 0.93 |
| Hourly flow rate (vph) | 20 | 0 | 25 | 7 | 24 | 46 | 0 | 22 | 796 | 33 | 17 | 469 |
| Pedestrians | | 75 | | | 46 | | | | 31 | | | 22 |
| Lane Width (ft) | | 10.0 | | | 10.0 | | | | 16.0 | | | 16.0 |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | | 4.0 | | | 4.0 |
| Percent Blockage | | 5 | | | 3 | | | | 3 | | | 2 |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | | None | | | None |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | 304 | | | 638 |
| pX, platoon unblocked | 0.77 | 0.77 | 0.98 | 0.77 | 0.77 | 0.76 | 0.00 | 0.98 | | | 0.76 | |
| vC, conflicting volume | 1526 | 1509 | 587 | 1474 | 1504 | 880 | 0 | 568 | | | 875 | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1476 | 1453 | 568 | 1407 | 1448 | 687 | 0 | 549 | | | 680 | |
| tC, single (s) | *4.0 | 6.5 | *5.0 | *4.0 | *4.0 | *4.0 | 0.0 | 4.1 | | | 4.2 | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.4 | 3.5 | 4.0 | 3.3 | 0.0 | 2.2 | | | 2.3 | |
| p0 queue free % | 90 | 100 | 96 | 97 | 90 | 91 | 0 | 98 | | | 97 | |
| cM capacity (veh/h) | 203 | 89 | 563 | 246 | 244 | 493 | 0 | 934 | | | 660 | |

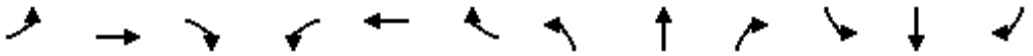
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 45 | 77 | 851 | 510 |
| Volume Left | 20 | 7 | 22 | 17 |
| Volume Right | 25 | 46 | 33 | 24 |
| cSH | 315 | 350 | 934 | 660 |
| Volume to Capacity | 0.14 | 0.22 | 0.02 | 0.03 |
| Queue Length 95th (ft) | 12 | 21 | 2 | 2 |
| Control Delay (s) | 18.3 | 18.2 | 0.6 | 0.7 |
| Lane LOS | C | C | A | A |
| Approach Delay (s) | 18.3 | 18.2 | 0.6 | 0.7 |
| Approach LOS | C | C | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 2.1 | | | |
| Intersection Capacity Utilization | 76.3% | ICU Level of Service | D | |
| Analysis Period (min) | 15 | | | |

* User Entered Value



| Movement | SBR |
|---|---|
| Lane Configurations | |
| Traffic Volume (veh/h) | 22 |
| Future Volume (Veh/h) | 22 |
| Sign Control | |
| Grade | |
| Peak Hour Factor | 0.93 |
| Hourly flow rate (vph) | 24 |
| Pedestrians | |
| Lane Width (ft) | |
| Walking Speed (ft/s) | |
| Percent Blockage | |
| Right turn flare (veh) | |
| Median type | |
| Median storage veh) | |
| Upstream signal (ft) | |
| pX, platoon unblocked | |
| vC, conflicting volume | |
| vC1, stage 1 conf vol | |
| vC2, stage 2 conf vol | |
| vCu, unblocked vol | |
| tC, single (s) | |
| tC, 2 stage (s) | |
| tF (s) | |
| p0 queue free % | |
| cM capacity (veh/h) | |
| Direction, Lane # | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 88 | 98 | 47 | 31 | 150 | 70 | 67 | 653 | 10 | 53 | 310 | 94 |
| Future Volume (vph) | 88 | 98 | 47 | 31 | 150 | 70 | 67 | 653 | 10 | 53 | 310 | 94 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 11 | 12 | 12 | 16 | 12 | 10 | 10 | 10 | 10 | 10 | 10 |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 0 | | 250 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 0 | | 1 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 0.95 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Ped Bike Factor | | 0.93 | | | 0.92 | | | 1.00 | | | 0.98 | |
| Frt | | 0.970 | | | 0.962 | | | 0.998 | | | 0.969 | |
| Flt Protected | | 0.981 | | | 0.994 | | | 0.995 | | | 0.994 | |
| Satd. Flow (prot) | 0 | 2520 | 0 | 0 | 1376 | 0 | 0 | 2824 | 0 | 0 | 2603 | 0 |
| Flt Permitted | | 0.616 | | | 0.931 | | | 0.779 | | | 0.682 | |
| Satd. Flow (perm) | 0 | 1523 | 0 | 0 | 1270 | 0 | 0 | 2203 | 0 | 0 | 1781 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 642 | | | 138 | | | 618 | | | 304 | |
| Travel Time (s) | | 14.6 | | | 3.1 | | | 14.0 | | | 6.9 | |
| Confl. Peds. (#/hr) | 104 | | 84 | 84 | | 104 | 117 | | 118 | 118 | | 117 |
| Confl. Bikes (#/hr) | | | | | | 3 | | | 9 | | | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.97 | 0.97 | 0.97 | 0.95 | 0.95 | 0.95 | 0.85 | 0.85 | 0.85 |
| Heavy Vehicles (%) | 16% | 7% | 0% | 6% | 10% | 25% | 3% | 1% | 0% | 2% | 3% | 10% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Adj. Flow (vph) | 98 | 109 | 52 | 32 | 155 | 72 | 71 | 687 | 11 | 62 | 365 | 111 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 259 | 0 | 0 | 259 | 0 | 0 | 769 | 0 | 0 | 538 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.27 | 1.14 | 1.14 | 1.12 | 1.14 | 1.25 | 1.33 | 1.25 | 1.25 | 1.33 | 1.25 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |

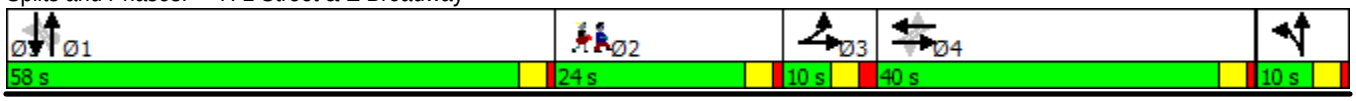
| Lane Group | Ø2 |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | |
| Future Volume (vph) | |
| Ideal Flow (vphpl) | |
| Lane Width (ft) | |
| Storage Length (ft) | |
| Storage Lanes | |
| Taper Length (ft) | |
| Lane Util. Factor | |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Right Turn on Red | |
| Satd. Flow (RTOR) | |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | |
| Heavy Vehicles (%) | |
| Parking (#/hr) | |
| Adj. Flow (vph) | |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | |
| Enter Blocked Intersection | |
| Lane Alignment | |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | |
| Turning Speed (mph) | |
| Number of Detectors | |
| Detector Template | |
| Leading Detector (ft) | |
| Trailing Detector (ft) | |
| Detector 1 Position(ft) | |
| Detector 1 Size(ft) | |
| Detector 1 Type | |
| Detector 1 Channel | |
| Detector 1 Extend (s) | |
| Detector 1 Queue (s) | |
| Detector 1 Delay (s) | |
| Detector 2 Position(ft) | |
| Detector 2 Size(ft) | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | D.P+P | NA | | Perm | NA | | D.P+P | NA | | Perm | NA | |
| Protected Phases | 3 | 3 4 | | | 4 | | 5 | 1 5 | | | 1 | |
| Permitted Phases | 4 | | | 4 | | | 1 | | | 1 | | |
| Detector Phase | 3 | 3 4 | | 4 | 4 | | 5 | 1 5 | | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | | | 10.0 | 10.0 | | 6.0 | | | 30.0 | 30.0 | |
| Minimum Split (s) | 10.0 | | | 14.0 | 14.0 | | 10.0 | | | 34.0 | 34.0 | |
| Total Split (s) | 10.0 | | | 40.0 | 40.0 | | 10.0 | | | 58.0 | 58.0 | |
| Total Split (%) | 7.0% | | | 28.2% | 28.2% | | 7.0% | | | 40.8% | 40.8% | |
| Maximum Green (s) | 5.0 | | | 36.0 | 36.0 | | 6.0 | | | 54.0 | 54.0 | |
| Yellow Time (s) | 3.0 | | | 3.0 | 3.0 | | 3.0 | | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | | | 1.0 | 1.0 | | 1.0 | | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | | | | | 0.0 | | | | | | 0.0 | |
| Total Lost Time (s) | | | | | 4.0 | | | | | | 4.0 | |
| Lead/Lag | Lead | | | Lag | Lag | | | | | Lead | Lead | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | | | 2.0 | 2.0 | | 2.0 | | | 2.0 | 2.0 | |
| Recall Mode | Max | | | Max | Max | | Max | | | Max | Max | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 40.0 | | | 36.0 | | | 60.0 | | | 54.0 | |
| Actuated g/C Ratio | | 0.28 | | | 0.25 | | | 0.42 | | | 0.38 | |
| v/c Ratio | | 0.56 | | | 0.81 | | | 0.80 | | | 0.79 | |
| Control Delay | | 45.8 | | | 69.6 | | | 42.2 | | | 49.2 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 45.8 | | | 69.6 | | | 42.2 | | | 49.2 | |
| LOS | | D | | | E | | | D | | | D | |
| Approach Delay | | 45.8 | | | 69.6 | | | 42.2 | | | 49.2 | |
| Approach LOS | | D | | | E | | | D | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 142 | | | |
| Actuated Cycle Length: 142 | | | |
| Natural Cycle: 105 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 0.81 | | | |
| Intersection Signal Delay: 48.7 | | Intersection LOS: D | |
| Intersection Capacity Utilization 89.9% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |

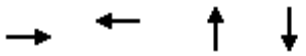
Description: L Street is very wide and during peak hours vehicles form two lanes.

Splits and Phases: 7: L Street & E Broadway



| Lane Group | Ø2 |
|---|---|
| Detector 2 Type | |
| Detector 2 Channel | |
| Detector 2 Extend (s) | |
| Turn Type | |
| Protected Phases | 2 |
| Permitted Phases | |
| Detector Phase | |
| Switch Phase | |
| Minimum Initial (s) | 4.0 |
| Minimum Split (s) | 24.0 |
| Total Split (s) | 24.0 |
| Total Split (%) | 17% |
| Maximum Green (s) | 20.0 |
| Yellow Time (s) | 3.0 |
| All-Red Time (s) | 1.0 |
| Lost Time Adjust (s) | |
| Total Lost Time (s) | |
| Lead/Lag | Lag |
| Lead-Lag Optimize? | |
| Vehicle Extension (s) | 2.0 |
| Recall Mode | None |
| Walk Time (s) | 8.0 |
| Flash Dont Walk (s) | 12.0 |
| Pedestrian Calls (#/hr) | 121 |
| Act Effct Green (s) | |
| Actuated g/C Ratio | |
| v/c Ratio | |
| Control Delay | |
| Queue Delay | |
| Total Delay | |
| LOS | |
| Approach Delay | |
| Approach LOS | |

| Intersection Summary |
|---|

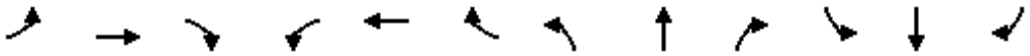


| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 259 | 259 | 769 | 538 |
| v/c Ratio | 0.56 | 0.81 | 0.80 | 0.79 |
| Control Delay | 45.8 | 69.6 | 42.2 | 49.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 45.8 | 69.6 | 42.2 | 49.2 |
| Queue Length 50th (ft) | 95 | 226 | 277 | 231 |
| Queue Length 95th (ft) | 136 | #368 | 347 | 285 |
| Internal Link Dist (ft) | 562 | 58 | 538 | 224 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 464 | 321 | 957 | 677 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.56 | 0.81 | 0.80 | 0.79 |

Intersection Summary

Description: L Street is very wide and during peak hours vehicles form two lanes.

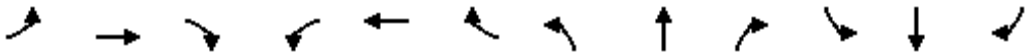
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 88 | 98 | 47 | 31 | 150 | 70 | 67 | 653 | 10 | 53 | 310 | 94 |
| Future Volume (vph) | 88 | 98 | 47 | 31 | 150 | 70 | 67 | 653 | 10 | 53 | 310 | 94 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 11 | 12 | 12 | 16 | 12 | 10 | 10 | 10 | 10 | 10 | 10 |
| Total Lost time (s) | | 5.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 0.95 | | | 1.00 | | | 0.95 | | | 0.95 | |
| Frpb, ped/bikes | | 0.97 | | | 0.94 | | | 1.00 | | | 0.98 | |
| Flpb, ped/bikes | | 0.98 | | | 0.99 | | | 1.00 | | | 1.00 | |
| Frt | | 0.97 | | | 0.96 | | | 1.00 | | | 0.97 | |
| Flt Protected | | 0.98 | | | 0.99 | | | 1.00 | | | 0.99 | |
| Satd. Flow (prot) | | 2464 | | | 1356 | | | 2817 | | | 2596 | |
| Flt Permitted | | 0.62 | | | 0.93 | | | 0.78 | | | 0.68 | |
| Satd. Flow (perm) | | 1547 | | | 1271 | | | 2206 | | | 1781 | |
| Peak-hour factor, PHF | 0.90 | 0.90 | 0.90 | 0.97 | 0.97 | 0.97 | 0.95 | 0.95 | 0.95 | 0.85 | 0.85 | 0.85 |
| Adj. Flow (vph) | 98 | 109 | 52 | 32 | 155 | 72 | 71 | 687 | 11 | 62 | 365 | 111 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 259 | 0 | 0 | 259 | 0 | 0 | 769 | 0 | 0 | 538 | 0 |
| Confl. Peds. (#/hr) | 104 | | 84 | 84 | | 104 | 117 | | 118 | 118 | | 117 |
| Confl. Bikes (#/hr) | | | | | | 3 | | | 9 | | | |
| Heavy Vehicles (%) | 16% | 7% | 0% | 6% | 10% | 25% | 3% | 1% | 0% | 2% | 3% | 10% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Turn Type | D.P+P | NA | | Perm | NA | | D.P+P | NA | | Perm | NA | |
| Protected Phases | 3 | 3 4 | | | 4 | | 5 | 1 5 | | | 1 | |
| Permitted Phases | 4 | | | 4 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 41.0 | | | 36.0 | | | 60.0 | | | 54.0 | |
| Effective Green, g (s) | | 41.0 | | | 36.0 | | | 60.0 | | | 54.0 | |
| Actuated g/C Ratio | | 0.29 | | | 0.25 | | | 0.42 | | | 0.38 | |
| Clearance Time (s) | | | | | 4.0 | | | | | | 4.0 | |
| Vehicle Extension (s) | | | | | 2.0 | | | | | | 2.0 | |
| Lane Grp Cap (vph) | | 478 | | | 322 | | | 957 | | | 677 | |
| v/s Ratio Prot | | c0.02 | | | | | | c0.03 | | | | |
| v/s Ratio Perm | | 0.14 | | | c0.20 | | | c0.31 | | | 0.30 | |
| v/c Ratio | | 0.54 | | | 0.80 | | | 0.80 | | | 0.79 | |
| Uniform Delay, d1 | | 42.6 | | | 49.7 | | | 35.8 | | | 39.1 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 4.4 | | | 18.9 | | | 7.1 | | | 9.3 | |
| Delay (s) | | 46.9 | | | 68.6 | | | 43.0 | | | 48.4 | |
| Level of Service | | D | | | E | | | D | | | D | |
| Approach Delay (s) | | 46.9 | | | 68.6 | | | 43.0 | | | 48.4 | |
| Approach LOS | | D | | | E | | | D | | | D | |

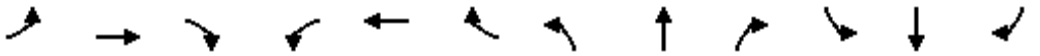
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 48.8 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.66 | | |
| Actuated Cycle Length (s) | 142.0 | Sum of lost time (s) | 21.0 |
| Intersection Capacity Utilization | 89.9% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |
| Description: L Street is very wide and during peak hours vehicles form two lanes. | | | |

c Critical Lane Group



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 26 | 118 | 0 | 0 | 225 | 5 | 124 | 10 | 26 | 5 | 0 | 57 |
| Future Volume (vph) | 26 | 118 | 0 | 0 | 225 | 5 | 124 | 10 | 26 | 5 | 0 | 57 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 13 | 12 | 10 | 10 | 12 | 12 | 16 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | | | 0.997 | | | 0.891 | | | 0.876 | |
| Flt Protected | | 0.991 | | | | | 0.950 | | | | 0.996 | |
| Satd. Flow (prot) | 0 | 1378 | 0 | 0 | 1547 | 0 | 1325 | 1242 | 0 | 0 | 1215 | 0 |
| Flt Permitted | | 0.991 | | | | | 0.950 | | | | 0.996 | |
| Satd. Flow (perm) | 0 | 1378 | 0 | 0 | 1547 | 0 | 1325 | 1242 | 0 | 0 | 1215 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 1822 | | | 540 | | | 382 | | | 350 | |
| Travel Time (s) | | 41.4 | | | 12.3 | | | 8.7 | | | 8.0 | |
| Confl. Peds. (#/hr) | 8 | | 18 | 18 | | 8 | 13 | | 28 | 28 | | 13 |
| Confl. Bikes (#/hr) | | | 1 | | | 3 | | | 1 | | | |
| Peak Hour Factor | 0.70 | 0.70 | 0.70 | 0.68 | 0.68 | 0.68 | 0.71 | 0.71 | 0.71 | 0.50 | 0.50 | 0.50 |
| Heavy Vehicles (%) | 9% | 11% | 2% | 0% | 2% | 25% | 3% | 11% | 0% | 17% | 0% | 26% |
| Parking (#/hr) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Adj. Flow (vph) | 37 | 169 | 0 | 0 | 331 | 7 | 175 | 14 | 37 | 10 | 0 | 114 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 206 | 0 | 0 | 338 | 0 | 175 | 51 | 0 | 0 | 124 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 10 | | | 10 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.30 | 1.14 | 1.14 | 1.25 | 1.14 | 1.42 | 1.42 | 1.14 | 1.14 | 1.12 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 48.5% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

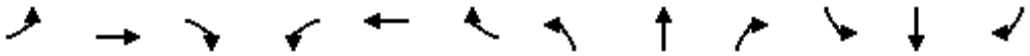


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 26 | 118 | 0 | 0 | 225 | 5 | 124 | 10 | 26 | 5 | 0 | 57 |
| Future Volume (Veh/h) | 26 | 118 | 0 | 0 | 225 | 5 | 124 | 10 | 26 | 5 | 0 | 57 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.70 | 0.70 | 0.70 | 0.68 | 0.68 | 0.68 | 0.71 | 0.71 | 0.71 | 0.50 | 0.50 | 0.50 |
| Hourly flow rate (vph) | 37 | 169 | 0 | 0 | 331 | 7 | 175 | 14 | 37 | 10 | 0 | 114 |
| Pedestrians | | 13 | | | 28 | | | 18 | | | 8 | |
| Lane Width (ft) | | 12.0 | | | 13.0 | | | 10.0 | | | 16.0 | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Percent Blockage | | 1 | | | 3 | | | 1 | | | 1 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 540 | | | | | | | |
| pX, platoon unblocked | 0.97 | | | | | | 0.97 | 0.97 | | 0.97 | 0.97 | 0.97 |
| vC, conflicting volume | 346 | | | 187 | | | 722 | 607 | 215 | 658 | 604 | 356 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 308 | | | 187 | | | 697 | 578 | 215 | 630 | 574 | 318 |
| tC, single (s) | 4.2 | | | 4.1 | | | *6.5 | 6.6 | 6.2 | 7.3 | 6.5 | 6.5 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.3 | | | 2.2 | | | 3.5 | 4.1 | 3.3 | 3.7 | 4.0 | 3.5 |
| p0 queue free % | 97 | | | 100 | | | 41 | 96 | 95 | 97 | 100 | 82 |
| cM capacity (veh/h) | 1165 | | | 1382 | | | 298 | 381 | 799 | 311 | 396 | 636 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | SB 1 |
|---|---|---|---|---|---|
| Volume Total | 206 | 338 | 175 | 51 | 124 |
| Volume Left | 37 | 0 | 175 | 0 | 10 |
| Volume Right | 0 | 7 | 0 | 37 | 114 |
| cSH | 1165 | 1700 | 298 | 614 | 587 |
| Volume to Capacity | 0.03 | 0.20 | 0.59 | 0.08 | 0.21 |
| Queue Length 95th (ft) | 2 | 0 | 87 | 7 | 20 |
| Control Delay (s) | 1.7 | 0.0 | 32.9 | 11.4 | 12.8 |
| Lane LOS | A | | D | B | B |
| Approach Delay (s) | 1.7 | 0.0 | 28.0 | | 12.8 |
| Approach LOS | | | D | | B |

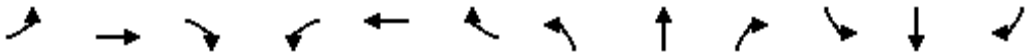
| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 9.3 | | | |
| Intersection Capacity Utilization | 48.5% | ICU Level of Service | | A |
| Analysis Period (min) | 15 | | | |

* User Entered Value



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 56 | 191 | 0 | 0 | 334 | 0 | 95 | 0 | 10 | 0 | 0 | 65 |
| Future Volume (vph) | 56 | 191 | 0 | 0 | 334 | 0 | 95 | 0 | 10 | 0 | 0 | 65 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 13 | 12 | 12 | 13 | 12 | 10 | 12 | 12 | 12 | 12 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | | | | | | 0.987 | | | 0.865 | |
| Flt Protected | | 0.990 | | | | | | 0.957 | | | | |
| Satd. Flow (prot) | 0 | 1564 | 0 | 0 | 1750 | 0 | 0 | 1586 | 0 | 0 | 1479 | 0 |
| Flt Permitted | | 0.990 | | | | | | 0.957 | | | | |
| Satd. Flow (perm) | 0 | 1564 | 0 | 0 | 1750 | 0 | 0 | 1586 | 0 | 0 | 1479 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 576 | | | 561 | | | 457 | | | 201 | |
| Travel Time (s) | | 13.1 | | | 12.8 | | | 10.4 | | | 4.6 | |
| Confl. Peds. (#/hr) | | | 13 | 13 | | | 4 | | | | | |
| Confl. Bikes (#/hr) | | | 1 | | | | | | 3 | | | |
| Peak Hour Factor | 0.92 | 0.84 | 0.84 | 0.77 | 0.77 | 0.92 | 0.70 | 0.92 | 0.70 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 0% | 15% | 0% | 0% | 1% | 0% | 2% | 0% | 0% | 0% | 0% | 0% |
| Adj. Flow (vph) | 61 | 227 | 0 | 0 | 434 | 0 | 136 | 0 | 14 | 0 | 0 | 71 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 288 | 0 | 0 | 434 | 0 | 0 | 150 | 0 | 0 | 71 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.10 | 1.14 | 1.14 | 1.10 | 1.14 | 1.25 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |

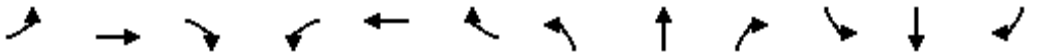
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 57.3% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 56 | 191 | 0 | 0 | 334 | 0 | 95 | 0 | 10 | 0 | 0 | 65 |
| Future Volume (Veh/h) | 56 | 191 | 0 | 0 | 334 | 0 | 95 | 0 | 10 | 0 | 0 | 65 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.92 | 0.84 | 0.84 | 0.77 | 0.77 | 0.92 | 0.70 | 0.92 | 0.70 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 61 | 227 | 0 | 0 | 434 | 0 | 136 | 0 | 14 | 0 | 0 | 71 |
| Pedestrians | | 4 | | | | | | 13 | | | | |
| Lane Width (ft) | | 13.0 | | | | | | 12.0 | | | | |
| Walking Speed (ft/s) | | 4.0 | | | | | | 4.0 | | | | |
| Percent Blockage | | 0 | | | | | | 1 | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 576 | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 434 | | | 240 | | | 871 | 796 | 240 | 797 | 796 | 438 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 434 | | | 240 | | | 871 | 796 | 240 | 797 | 796 | 438 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 95 | | | 100 | | | 40 | 100 | 98 | 100 | 100 | 89 |
| cM capacity (veh/h) | 1136 | | | 1324 | | | 225 | 302 | 795 | 287 | 302 | 621 |

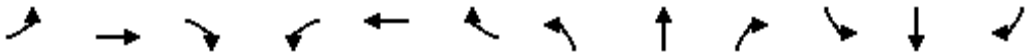
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 288 | 434 | 150 | 71 |
| Volume Left | 61 | 0 | 136 | 0 |
| Volume Right | 0 | 0 | 14 | 71 |
| cSH | 1136 | 1700 | 241 | 621 |
| Volume to Capacity | 0.05 | 0.26 | 0.62 | 0.11 |
| Queue Length 95th (ft) | 4 | 0 | 93 | 10 |
| Control Delay (s) | 2.2 | 0.0 | 41.6 | 11.5 |
| Lane LOS | A | | E | B |
| Approach Delay (s) | 2.2 | 0.0 | 41.6 | 11.5 |
| Approach LOS | | | E | B |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 8.1 | | | |
| Intersection Capacity Utilization | 57.3% | ICU Level of Service | B | |
| Analysis Period (min) | 15 | | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 29 | 204 | 0 | 0 | 402 | 217 | 78 | 57 | 11 | 126 | 0 | 71 |
| Future Volume (vph) | 29 | 204 | 0 | 0 | 402 | 217 | 78 | 57 | 11 | 126 | 0 | 71 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 15 | 12 | 12 | 16 | 12 | 12 | 16 | 12 | 12 | 14 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | | | 0.953 | | | 0.990 | | | 0.951 | |
| Flt Protected | | 0.994 | | | | | | 0.974 | | | 0.969 | |
| Satd. Flow (prot) | 0 | 1388 | 0 | 0 | 1755 | 0 | 0 | 1800 | 0 | 0 | 1439 | 0 |
| Flt Permitted | | 0.994 | | | | | | 0.974 | | | 0.969 | |
| Satd. Flow (perm) | 0 | 1388 | 0 | 0 | 1755 | 0 | 0 | 1800 | 0 | 0 | 1439 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 848 | | | 1822 | | | 402 | | | 2052 | |
| Travel Time (s) | | 19.3 | | | 41.4 | | | 9.1 | | | 46.6 | |
| Confl. Peds. (#/hr) | 4 | | | 5 | | 4 | 1 | | 24 | 24 | | 1 |
| Confl. Bikes (#/hr) | | | 2 | | | 6 | | | 9 | | | |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.70 | 0.70 | 0.70 | 0.74 | 0.74 | 0.74 | 0.88 | 0.88 | 0.88 |
| Heavy Vehicles (%) | 9% | 23% | 0% | 0% | 7% | 2% | 1% | 2% | 33% | 11% | 0% | 27% |
| Parking (#/hr) | | 0 | 0 | | | | | | | | | |
| Adj. Flow (vph) | 33 | 232 | 0 | 0 | 574 | 310 | 105 | 77 | 15 | 143 | 0 | 81 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 265 | 0 | 0 | 884 | 0 | 0 | 197 | 0 | 0 | 224 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.16 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 1.05 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |

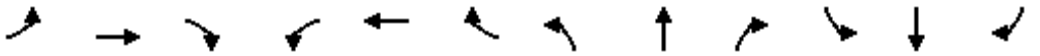
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 62.5% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 29 | 204 | 0 | 0 | 402 | 217 | 78 | 57 | 11 | 126 | 0 | 71 |
| Future Volume (Veh/h) | 29 | 204 | 0 | 0 | 402 | 217 | 78 | 57 | 11 | 126 | 0 | 71 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.70 | 0.70 | 0.70 | 0.74 | 0.74 | 0.74 | 0.88 | 0.88 | 0.88 |
| Hourly flow rate (vph) | 33 | 232 | 0 | 0 | 574 | 310 | 105 | 77 | 15 | 143 | 0 | 81 |
| Pedestrians | | 1 | | | 24 | | | 5 | | | 4 | |
| Lane Width (ft) | | 15.0 | | | 16.0 | | | 16.0 | | | 14.0 | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Percent Blockage | | 0 | | | 3 | | | 1 | | | 0 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 888 | | | 237 | | | 1114 | 1191 | 261 | 1108 | 1036 | 734 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 888 | | | 237 | | | 1114 | 1191 | 261 | 1108 | 1036 | 734 |
| tC, single (s) | 4.2 | | | 4.1 | | | 7.1 | 6.5 | 6.5 | 7.2 | 6.5 | 6.5 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.3 | | | 2.2 | | | 3.5 | 4.0 | 3.6 | 3.6 | 4.0 | 3.5 |
| p0 queue free % | 95 | | | 100 | | | 25 | 57 | 98 | 0 | 100 | 79 |
| cM capacity (veh/h) | 731 | | | 1334 | | | 140 | 177 | 685 | 108 | 221 | 380 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 265 | 884 | 197 | 224 |
| Volume Left | 33 | 0 | 105 | 143 |
| Volume Right | 0 | 310 | 15 | 81 |
| cSH | 731 | 1334 | 163 | 146 |
| Volume to Capacity | 0.05 | 0.00 | 1.21 | 1.53 |
| Queue Length 95th (ft) | 4 | 0 | 274 | 381 |
| Control Delay (s) | 1.7 | 0.0 | 193.3 | 327.3 |
| Lane LOS | A | | F | F |
| Approach Delay (s) | 1.7 | 0.0 | 193.3 | 327.3 |
| Approach LOS | | | F | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 71.2 | | |
| Intersection Capacity Utilization | 62.5% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 31 | 21 | 5 | 5 | 31 | 10 | 21 | 616 | 10 | 21 | 299 | 37 |
| Future Volume (vph) | 31 | 21 | 5 | 5 | 31 | 10 | 21 | 616 | 10 | 21 | 299 | 37 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | 0.95 | | | 0.97 | | | 1.00 | | | 0.99 | |
| Frt | | 0.988 | | | 0.972 | | | 0.998 | | | 0.986 | |
| Flt Protected | | 0.973 | | | 0.994 | | | 0.998 | | | 0.997 | |
| Satd. Flow (prot) | 0 | 1109 | 0 | 0 | 1353 | 0 | 0 | 1410 | 0 | 0 | 1344 | 0 |
| Flt Permitted | | 0.824 | | | 0.973 | | | 0.981 | | | 0.949 | |
| Satd. Flow (perm) | 0 | 894 | 0 | 0 | 1320 | 0 | 0 | 1384 | 0 | 0 | 1278 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 4 | | | 11 | | | 1 | | | 8 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 659 | | | 649 | | | 380 | | | 618 | |
| Travel Time (s) | | 15.0 | | | 14.8 | | | 8.6 | | | 14.0 | |
| Confl. Peds. (#/hr) | 28 | | 11 | 11 | | 28 | 108 | | 63 | 63 | | 108 |
| Confl. Bikes (#/hr) | | | | | | | | | 5 | | | |
| Peak Hour Factor | 0.74 | 0.74 | 0.74 | 0.87 | 0.87 | 0.87 | 0.97 | 0.97 | 0.97 | 0.87 | 0.87 | 0.87 |
| Heavy Vehicles (%) | 31% | 18% | 4% | 0% | 0% | 0% | 6% | 1% | 11% | 0% | 4% | 3% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Adj. Flow (vph) | 42 | 28 | 7 | 6 | 36 | 11 | 22 | 635 | 10 | 24 | 344 | 43 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 77 | 0 | 0 | 53 | 0 | 0 | 667 | 0 | 0 | 411 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |

| Lane Group | Ø2 |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | |
| Future Volume (vph) | |
| Ideal Flow (vphpl) | |
| Lane Width (ft) | |
| Lane Util. Factor | |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Right Turn on Red | |
| Satd. Flow (RTOR) | |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | |
| Heavy Vehicles (%) | |
| Parking (#/hr) | |
| Adj. Flow (vph) | |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | |
| Enter Blocked Intersection | |
| Lane Alignment | |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | |
| Turning Speed (mph) | |
| Number of Detectors | |
| Detector Template | |
| Leading Detector (ft) | |
| Trailing Detector (ft) | |
| Detector 1 Position(ft) | |
| Detector 1 Size(ft) | |
| Detector 1 Type | |
| Detector 1 Channel | |
| Detector 1 Extend (s) | |
| Detector 1 Queue (s) | |
| Detector 1 Delay (s) | |
| Detector 2 Position(ft) | |
| Detector 2 Size(ft) | |
| Detector 2 Type | |
| Detector 2 Channel | |
| Detector 2 Extend (s) | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Detector Phase | 5 | 5 | | 5 | 5 | | 1 | 1 | | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | |
| Minimum Split (s) | 12.0 | 12.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Total Split (s) | 18.0 | 18.0 | | 18.0 | 18.0 | | 54.0 | 54.0 | | 54.0 | 54.0 | |
| Total Split (%) | 17.6% | 17.6% | | 17.6% | 17.6% | | 52.9% | 52.9% | | 52.9% | 52.9% | |
| Maximum Green (s) | 14.0 | 14.0 | | 14.0 | 14.0 | | 50.0 | 50.0 | | 50.0 | 50.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Lost Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lead/Lag | | | | | | | Lead | Lead | | Lead | Lead | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | Max | Max | | Max | Max | | Max | Max | | Max | Max | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 14.3 | | | 14.3 | | | 51.0 | | | 51.0 | |
| Actuated g/C Ratio | | 0.15 | | | 0.15 | | | 0.53 | | | 0.53 | |
| v/c Ratio | | 0.57 | | | 0.26 | | | 0.91 | | | 0.60 | |
| Control Delay | | 57.4 | | | 36.5 | | | 42.3 | | | 22.6 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 57.4 | | | 36.5 | | | 42.3 | | | 22.6 | |
| LOS | | E | | | D | | | D | | | C | |
| Approach Delay | | 57.4 | | | 36.5 | | | 42.3 | | | 22.6 | |
| Approach LOS | | E | | | D | | | D | | | C | |

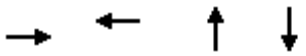
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 102 | | | |
| Actuated Cycle Length: 96 | | | |
| Natural Cycle: 90 | | | |
| Control Type: Semi Act-Uncoord | | | |
| Maximum v/c Ratio: 0.91 | | | |
| Intersection Signal Delay: 36.3 | | Intersection LOS: D | |
| Intersection Capacity Utilization 60.7% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 11: L Street & E 5th Street



| Lane Group | Ø2 |
|---|---|
| Turn Type | |
| Protected Phases | 2 |
| Permitted Phases | |
| Detector Phase | |
| Switch Phase | |
| Minimum Initial (s) | 4.0 |
| Minimum Split (s) | 30.0 |
| Total Split (s) | 30.0 |
| Total Split (%) | 29% |
| Maximum Green (s) | 26.0 |
| Yellow Time (s) | 3.0 |
| All-Red Time (s) | 1.0 |
| Lost Time Adjust (s) | |
| Total Lost Time (s) | |
| Lead/Lag | Lag |
| Lead-Lag Optimize? | |
| Vehicle Extension (s) | 2.0 |
| Recall Mode | None |
| Walk Time (s) | 14.0 |
| Flash Dont Walk (s) | 12.0 |
| Pedestrian Calls (#/hr) | 53 |
| Act Effct Green (s) | |
| Actuated g/C Ratio | |
| v/c Ratio | |
| Control Delay | |
| Queue Delay | |
| Total Delay | |
| LOS | |
| Approach Delay | |
| Approach LOS | |

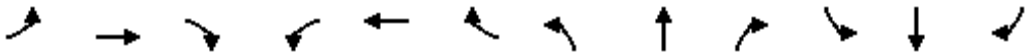
| Intersection Summary |
|---|



| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 77 | 53 | 667 | 411 |
| v/c Ratio | 0.57 | 0.26 | 0.91 | 0.60 |
| Control Delay | 57.4 | 36.5 | 42.3 | 22.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 57.4 | 36.5 | 42.3 | 22.6 |
| Queue Length 50th (ft) | 45 | 25 | 411 | 189 |
| Queue Length 95th (ft) | 77 | 60 | #668 | 284 |
| Internal Link Dist (ft) | 579 | 569 | 300 | 538 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 136 | 205 | 735 | 682 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.57 | 0.26 | 0.91 | 0.60 |

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 31 | 21 | 5 | 5 | 31 | 10 | 21 | 616 | 10 | 21 | 299 | 37 |
| Future Volume (vph) | 31 | 21 | 5 | 5 | 31 | 10 | 21 | 616 | 10 | 21 | 299 | 37 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Total Lost time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Frpb, ped/bikes | | 0.99 | | | 0.98 | | | 1.00 | | | 0.99 | |
| Flpb, ped/bikes | | 0.95 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Frt | | 0.99 | | | 0.97 | | | 1.00 | | | 0.99 | |
| Flt Protected | | 0.97 | | | 0.99 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | | 1059 | | | 1351 | | | 1408 | | | 1343 | |
| Flt Permitted | | 0.82 | | | 0.97 | | | 0.98 | | | 0.95 | |
| Satd. Flow (perm) | | 896 | | | 1322 | | | 1384 | | | 1279 | |
| Peak-hour factor, PHF | 0.74 | 0.74 | 0.74 | 0.87 | 0.87 | 0.87 | 0.97 | 0.97 | 0.97 | 0.87 | 0.87 | 0.87 |
| Adj. Flow (vph) | 42 | 28 | 7 | 6 | 36 | 11 | 22 | 635 | 10 | 24 | 344 | 43 |
| RTOR Reduction (vph) | 0 | 3 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 4 | 0 |
| Lane Group Flow (vph) | 0 | 74 | 0 | 0 | 44 | 0 | 0 | 667 | 0 | 0 | 407 | 0 |
| Confl. Peds. (#/hr) | 28 | | 11 | 11 | | 28 | 108 | | 63 | 63 | | 108 |
| Confl. Bikes (#/hr) | | | | | | | | | 5 | | | |
| Heavy Vehicles (%) | 31% | 18% | 4% | 0% | 0% | 0% | 6% | 1% | 11% | 0% | 4% | 3% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 14.3 | | | 14.3 | | | 51.0 | | | 51.0 | |
| Effective Green, g (s) | | 14.3 | | | 14.3 | | | 51.0 | | | 51.0 | |
| Actuated g/C Ratio | | 0.15 | | | 0.15 | | | 0.53 | | | 0.53 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | | | 2.0 | | | 2.0 | |
| Lane Grp Cap (vph) | | 132 | | | 195 | | | 728 | | | 673 | |
| v/s Ratio Prot | | | | | | | | | | | | |
| v/s Ratio Perm | | c0.08 | | | 0.03 | | | c0.48 | | | 0.32 | |
| v/c Ratio | | 0.56 | | | 0.22 | | | 0.92 | | | 0.61 | |
| Uniform Delay, d1 | | 38.4 | | | 36.4 | | | 21.0 | | | 16.0 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 15.9 | | | 2.6 | | | 18.1 | | | 4.0 | |
| Delay (s) | | 54.3 | | | 39.0 | | | 39.1 | | | 20.0 | |
| Level of Service | | D | | | D | | | D | | | B | |
| Approach Delay (s) | | 54.3 | | | 39.0 | | | 39.1 | | | 20.0 | |
| Approach LOS | | D | | | D | | | D | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 33.6 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.64 | | |
| Actuated Cycle Length (s) | 96.9 | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 60.7% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 26 | 16 | 5 | 5 | 26 | 10 | 16 | 559 | 5 | 10 | 236 | 16 |
| Future Volume (vph) | 26 | 16 | 5 | 5 | 26 | 10 | 16 | 559 | 5 | 10 | 236 | 16 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 16 | 12 | 12 | 15 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | 0.98 | | | 0.99 | | | 1.00 | | | 0.99 | |
| Frt | | 0.986 | | | 0.966 | | | 0.999 | | | 0.992 | |
| Flt Protected | | 0.973 | | | 0.994 | | | 0.999 | | | 0.998 | |
| Satd. Flow (prot) | 0 | 1485 | 0 | 0 | 1328 | 0 | 0 | 1577 | 0 | 0 | 1504 | 0 |
| Flt Permitted | | 0.854 | | | 0.977 | | | 0.990 | | | 0.979 | |
| Satd. Flow (perm) | 0 | 1287 | 0 | 0 | 1305 | 0 | 0 | 1561 | 0 | 0 | 1475 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 6 | | | 17 | | | 1 | | | 8 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 602 | | | 677 | | | 676 | | | 535 | |
| Travel Time (s) | | 13.7 | | | 15.4 | | | 15.4 | | | 12.2 | |
| Confl. Peds. (#/hr) | 11 | | 3 | 3 | | 11 | 32 | | 19 | 19 | | 32 |
| Confl. Bikes (#/hr) | | | | | | 2 | | | 1 | | | |
| Peak Hour Factor | 0.78 | 0.78 | 0.78 | 0.60 | 0.60 | 0.60 | 0.94 | 0.94 | 0.94 | 0.89 | 0.89 | 0.89 |
| Heavy Vehicles (%) | 4% | 29% | 0% | 0% | 33% | 0% | 0% | 1% | 0% | 9% | 4% | 8% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | | | | | |
| Adj. Flow (vph) | 33 | 21 | 6 | 8 | 43 | 17 | 17 | 595 | 5 | 11 | 265 | 18 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 60 | 0 | 0 | 68 | 0 | 0 | 617 | 0 | 0 | 294 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.12 | 1.14 | 1.14 | 1.16 | 1.14 | 1.14 | 1.25 | 1.14 | 1.14 | 1.25 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Detector Phase | 5 | 5 | | 5 | 5 | | 1 | 1 | | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 6.0 | 6.0 | | 6.0 | 6.0 | | 20.0 | 20.0 | | 20.0 | 20.0 | |
| Minimum Split (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 24.0 | 24.0 | | 24.0 | 24.0 | |
| Total Split (s) | 24.0 | 24.0 | | 24.0 | 24.0 | | 54.0 | 54.0 | | 54.0 | 54.0 | |
| Total Split (%) | 30.8% | 30.8% | | 30.8% | 30.8% | | 69.2% | 69.2% | | 69.2% | 69.2% | |
| Maximum Green (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 50.0 | 50.0 | | 50.0 | 50.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Lost Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | Max | Max | | Max | Max | | Max | Max | | Max | Max | |
| Walk Time (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | |
| Flash Dont Walk (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | |
| Pedestrian Calls (#/hr) | 4 | 4 | | 4 | 4 | | 13 | 13 | | 13 | 13 | |
| Act Effct Green (s) | | 20.0 | | | 20.0 | | | 50.0 | | | 50.0 | |
| Actuated g/C Ratio | | 0.26 | | | 0.26 | | | 0.64 | | | 0.64 | |
| v/c Ratio | | 0.18 | | | 0.20 | | | 0.62 | | | 0.31 | |
| Control Delay | | 22.5 | | | 19.9 | | | 11.7 | | | 7.1 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 22.5 | | | 19.9 | | | 11.7 | | | 7.1 | |
| LOS | | C | | | B | | | B | | | A | |
| Approach Delay | | 22.5 | | | 19.9 | | | 11.7 | | | 7.1 | |
| Approach LOS | | C | | | B | | | B | | | A | |

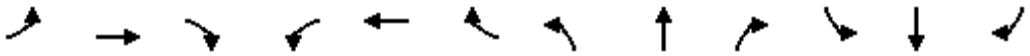
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 78 | | | |
| Actuated Cycle Length: 78 | | | |
| Natural Cycle: 55 | | | |
| Control Type: Semi Act-Uncoord | | | |
| Maximum v/c Ratio: 0.62 | | | |
| Intersection Signal Delay: 11.5 | | Intersection LOS: B | |
| Intersection Capacity Utilization 59.8% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 12: L Street & E 8th Street



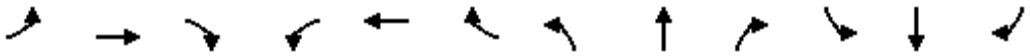
| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 60 | 68 | 617 | 294 |
| v/c Ratio | 0.18 | 0.20 | 0.62 | 0.31 |
| Control Delay | 22.5 | 19.9 | 11.7 | 7.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 22.5 | 19.9 | 11.7 | 7.1 |
| Queue Length 50th (ft) | 20 | 19 | 156 | 54 |
| Queue Length 95th (ft) | 43 | 30 | 255 | 92 |
| Internal Link Dist (ft) | 522 | 597 | 596 | 455 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 334 | 347 | 1001 | 948 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.18 | 0.20 | 0.62 | 0.31 |

Intersection Summary



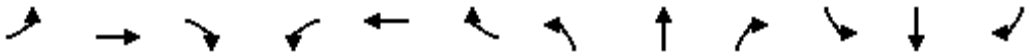
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 26 | 16 | 5 | 5 | 26 | 10 | 16 | 559 | 5 | 10 | 236 | 16 |
| Future Volume (vph) | 26 | 16 | 5 | 5 | 26 | 10 | 16 | 559 | 5 | 10 | 236 | 16 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 16 | 12 | 12 | 15 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Total Lost time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Frpb, ped/bikes | | 1.00 | | | 0.99 | | | 1.00 | | | 0.99 | |
| Flpb, ped/bikes | | 0.99 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Frt | | 0.99 | | | 0.97 | | | 1.00 | | | 0.99 | |
| Flt Protected | | 0.97 | | | 0.99 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | | 1467 | | | 1328 | | | 1574 | | | 1503 | |
| Flt Permitted | | 0.85 | | | 0.98 | | | 0.99 | | | 0.98 | |
| Satd. Flow (perm) | | 1287 | | | 1305 | | | 1560 | | | 1474 | |
| Peak-hour factor, PHF | 0.78 | 0.78 | 0.78 | 0.60 | 0.60 | 0.60 | 0.94 | 0.94 | 0.94 | 0.89 | 0.89 | 0.89 |
| Adj. Flow (vph) | 33 | 21 | 6 | 8 | 43 | 17 | 17 | 595 | 5 | 11 | 265 | 18 |
| RTOR Reduction (vph) | 0 | 4 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 3 | 0 |
| Lane Group Flow (vph) | 0 | 56 | 0 | 0 | 55 | 0 | 0 | 617 | 0 | 0 | 291 | 0 |
| Confl. Peds. (#/hr) | 11 | | 3 | 3 | | 11 | 32 | | 19 | 19 | | 32 |
| Confl. Bikes (#/hr) | | | | | | 2 | | | 1 | | | |
| Heavy Vehicles (%) | 4% | 29% | 0% | 0% | 33% | 0% | 0% | 1% | 0% | 9% | 4% | 8% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 20.0 | | | 20.0 | | | 50.0 | | | 50.0 | |
| Effective Green, g (s) | | 20.0 | | | 20.0 | | | 50.0 | | | 50.0 | |
| Actuated g/C Ratio | | 0.26 | | | 0.26 | | | 0.64 | | | 0.64 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | | | 2.0 | | | 2.0 | |
| Lane Grp Cap (vph) | | 330 | | | 334 | | | 1000 | | | 944 | |
| v/s Ratio Prot | | | | | | | | | | | | |
| v/s Ratio Perm | | c0.04 | | | 0.04 | | | c0.40 | | | 0.20 | |
| v/c Ratio | | 0.17 | | | 0.17 | | | 0.62 | | | 0.31 | |
| Uniform Delay, d1 | | 22.5 | | | 22.5 | | | 8.3 | | | 6.3 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 1.1 | | | 1.1 | | | 2.8 | | | 0.8 | |
| Delay (s) | | 23.6 | | | 23.6 | | | 11.2 | | | 7.1 | |
| Level of Service | | C | | | C | | | B | | | A | |
| Approach Delay (s) | | 23.6 | | | 23.6 | | | 11.2 | | | 7.1 | |
| Approach LOS | | C | | | C | | | B | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 11.5 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.49 | | |
| Actuated Cycle Length (s) | 78.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 59.8% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 5 | 5 | 5 | 16 | 5 | 26 | 512 | 5 | 0 | 190 | 16 |
| Future Volume (vph) | 0 | 5 | 5 | 5 | 16 | 5 | 26 | 512 | 5 | 0 | 190 | 16 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | 0.932 | | | 0.975 | | | 0.999 | | | 0.990 | |
| Flt Protected | | | | | 0.991 | | | 0.998 | | | | |
| Satd. Flow (prot) | 0 | 1771 | 0 | 0 | 1836 | 0 | 0 | 1894 | 0 | 0 | 1881 | 0 |
| Flt Permitted | | | | | 0.991 | | | 0.998 | | | | |
| Satd. Flow (perm) | 0 | 1771 | 0 | 0 | 1836 | 0 | 0 | 1894 | 0 | 0 | 1881 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 487 | | | 392 | | | 93 | | | 676 | |
| Travel Time (s) | | 11.1 | | | 8.9 | | | 2.1 | | | 15.4 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 0 | 5 | 5 | 5 | 17 | 5 | 28 | 557 | 5 | 0 | 207 | 17 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 10 | 0 | 0 | 27 | 0 | 0 | 590 | 0 | 0 | 224 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |

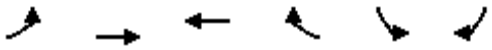
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 55.2% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |



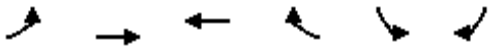
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 5 | 5 | 5 | 16 | 5 | 26 | 512 | 5 | 0 | 190 | 16 |
| Future Volume (Veh/h) | 0 | 5 | 5 | 5 | 16 | 5 | 26 | 512 | 5 | 0 | 190 | 16 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 0 | 5 | 5 | 5 | 17 | 5 | 28 | 557 | 5 | 0 | 207 | 17 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | 676 | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 844 | 834 | 216 | 838 | 840 | 560 | 224 | | | 562 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 844 | 834 | 216 | 838 | 840 | 560 | 224 | | | 562 | | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 100 | 98 | 99 | 98 | 94 | 99 | 98 | | | 100 | | |
| cM capacity (veh/h) | 266 | 300 | 829 | 278 | 298 | 532 | 1357 | | | 1019 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 10 | 27 | 590 | 224 |
| Volume Left | 0 | 5 | 28 | 0 |
| Volume Right | 5 | 5 | 5 | 17 |
| cSH | 441 | 320 | 1357 | 1019 |
| Volume to Capacity | 0.02 | 0.08 | 0.02 | 0.00 |
| Queue Length 95th (ft) | 2 | 7 | 2 | 0 |
| Control Delay (s) | 13.4 | 17.3 | 0.6 | 0.0 |
| Lane LOS | B | C | A | |
| Approach Delay (s) | 13.4 | 17.3 | 0.6 | 0.0 |
| Approach LOS | B | C | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 1.1 | | | |
| Intersection Capacity Utilization | 55.2% | ICU Level of Service | B | |
| Analysis Period (min) | 15 | | | |



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR | Ø2 |
|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | |
| Traffic Volume (vph) | 536 | 347 | 295 | 7 | 0 | 0 | |
| Future Volume (vph) | 536 | 347 | 295 | 7 | 0 | 0 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Lane Util. Factor | 0.95 | 0.95 | 0.95 | 0.95 | 1.00 | 1.00 | |
| Frt | | | 0.996 | | | | |
| Flt Protected | | 0.971 | | | | | |
| Satd. Flow (prot) | 0 | 3505 | 3596 | 0 | 0 | 0 | |
| Flt Permitted | | 0.618 | | | | | |
| Satd. Flow (perm) | 0 | 2231 | 3596 | 0 | 0 | 0 | |
| Right Turn on Red | | | | Yes | | Yes | |
| Satd. Flow (RTOR) | | | 5 | | | | |
| Link Speed (mph) | | 30 | 30 | | 30 | | |
| Link Distance (ft) | | 289 | 295 | | 140 | | |
| Travel Time (s) | | 6.6 | 6.7 | | 3.2 | | |
| Peak Hour Factor | 0.85 | 0.85 | 0.73 | 0.73 | 0.92 | 0.92 | |
| Adj. Flow (vph) | 631 | 408 | 404 | 10 | 0 | 0 | |
| Shared Lane Traffic (%) | | | | | | | |
| Lane Group Flow (vph) | 0 | 1039 | 414 | 0 | 0 | 0 | |
| Enter Blocked Intersection | No | No | No | No | No | No | |
| Lane Alignment | Left | Left | Left | Right | Left | Right | |
| Median Width(ft) | | 0 | 0 | | 0 | | |
| Link Offset(ft) | | 0 | 0 | | 0 | | |
| Crosswalk Width(ft) | | 16 | 16 | | 16 | | |
| Two way Left Turn Lane | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Turning Speed (mph) | 15 | | | 9 | 15 | 9 | |
| Number of Detectors | 1 | 2 | 2 | | | | |
| Detector Template | Left | Thru | Thru | | | | |
| Leading Detector (ft) | 20 | 100 | 100 | | | | |
| Trailing Detector (ft) | 0 | 0 | 0 | | | | |
| Detector 1 Position(ft) | 0 | 0 | 0 | | | | |
| Detector 1 Size(ft) | 20 | 6 | 6 | | | | |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | | | | |
| Detector 1 Channel | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | | | | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | | | | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | | | | |
| Detector 2 Position(ft) | | 94 | 94 | | | | |
| Detector 2 Size(ft) | | 6 | 6 | | | | |
| Detector 2 Type | | Cl+Ex | Cl+Ex | | | | |
| Detector 2 Channel | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | 0.0 | | | | |
| Turn Type | Perm | NA | NA | | | | |
| Protected Phases | | 1 | 1 | | | | 2 |
| Permitted Phases | 1 | | | | | | |
| Detector Phase | 1 | 1 | 1 | | | | |
| Switch Phase | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | 8.0 | | | | 10.0 |



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR | Ø2 |
|---|---|---|---|---|---|---|---|
| Minimum Split (s) | 22.0 | 22.0 | 22.0 | | | | 25.0 |
| Total Split (s) | 70.0 | 70.0 | 70.0 | | | | 25.0 |
| Total Split (%) | 73.7% | 73.7% | 73.7% | | | | 26% |
| Maximum Green (s) | 62.6 | 62.6 | 62.6 | | | | 20.5 |
| Yellow Time (s) | 5.4 | 5.4 | 5.4 | | | | 3.5 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | | | 1.0 |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | | | |
| Total Lost Time (s) | | 7.4 | 7.4 | | | | |
| Lead/Lag | Lead | Lead | Lead | | | | Lag |
| Lead-Lag Optimize? | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | | | | 2.0 |
| Recall Mode | Max | Max | Max | | | | None |
| Walk Time (s) | | | | | | | 18.0 |
| Flash Dont Walk (s) | | | | | | | 1.0 |
| Pedestrian Calls (#/hr) | | | | | | | 24 |
| Act Effct Green (s) | | 83.6 | 83.6 | | | | |
| Actuated g/C Ratio | | 0.89 | 0.89 | | | | |
| v/c Ratio | | 0.53 | 0.13 | | | | |
| Control Delay | | 5.5 | 2.7 | | | | |
| Queue Delay | | 0.0 | 0.0 | | | | |
| Total Delay | | 5.5 | 2.7 | | | | |
| LOS | | A | A | | | | |
| Approach Delay | | 5.5 | 2.7 | | | | |
| Approach LOS | | A | A | | | | |

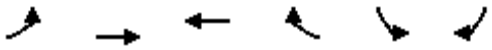
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 95 | | | |
| Actuated Cycle Length: 94.4 | | | |
| Natural Cycle: 65 | | | |
| Control Type: Semi Act-Uncoord | | | |
| Maximum v/c Ratio: 0.53 | | | |
| Intersection Signal Delay: 4.7 | | Intersection LOS: A | |
| Intersection Capacity Utilization 50.4% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 14: Day Blvd Ped



| Lane Group | EBT | WBT |
|---|---|---|
| Lane Group Flow (vph) | 1039 | 414 |
| v/c Ratio | 0.53 | 0.13 |
| Control Delay | 5.5 | 2.7 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 5.5 | 2.7 |
| Queue Length 50th (ft) | 0 | 0 |
| Queue Length 95th (ft) | 213 | 45 |
| Internal Link Dist (ft) | 209 | 215 |
| Turn Bay Length (ft) | | |
| Base Capacity (vph) | 1977 | 3187 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.53 | 0.13 |

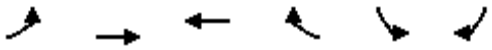
Intersection Summary



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 536 | 347 | 295 | 7 | 0 | 0 |
| Future Volume (vph) | 536 | 347 | 295 | 7 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 7.4 | 7.4 | | | |
| Lane Util. Factor | | 0.95 | 0.95 | | | |
| Frt | | 1.00 | 1.00 | | | |
| Flt Protected | | 0.97 | 1.00 | | | |
| Satd. Flow (prot) | | 3504 | 3597 | | | |
| Flt Permitted | | 0.62 | 1.00 | | | |
| Satd. Flow (perm) | | 2232 | 3597 | | | |
| Peak-hour factor, PHF | 0.85 | 0.85 | 0.73 | 0.73 | 0.92 | 0.92 |
| Adj. Flow (vph) | 631 | 408 | 404 | 10 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 1 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 1039 | 413 | 0 | 0 | 0 |
| Turn Type | Perm | NA | NA | | | |
| Protected Phases | | 1 | 1 | | | |
| Permitted Phases | 1 | | | | | |
| Actuated Green, G (s) | | 78.7 | 78.7 | | | |
| Effective Green, g (s) | | 78.7 | 78.7 | | | |
| Actuated g/C Ratio | | 0.81 | 0.81 | | | |
| Clearance Time (s) | | 7.4 | 7.4 | | | |
| Vehicle Extension (s) | | 2.0 | 2.0 | | | |
| Lane Grp Cap (vph) | | 1807 | 2912 | | | |
| v/s Ratio Prot | | | 0.11 | | | |
| v/s Ratio Perm | | c0.47 | | | | |
| v/c Ratio | | 0.57 | 0.14 | | | |
| Uniform Delay, d1 | | 3.3 | 2.0 | | | |
| Progression Factor | | 1.00 | 1.00 | | | |
| Incremental Delay, d2 | | 1.3 | 0.1 | | | |
| Delay (s) | | 4.6 | 2.1 | | | |
| Level of Service | | A | A | | | |
| Approach Delay (s) | | 4.6 | 2.1 | | 0.0 | |
| Approach LOS | | A | A | | A | |

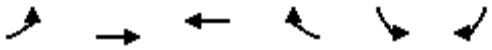
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 3.9 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.53 | | |
| Actuated Cycle Length (s) | 97.2 | Sum of lost time (s) | 11.9 |
| Intersection Capacity Utilization | 50.4% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 536 | 347 | 295 | 7 | 12 | 188 |
| Future Volume (vph) | 536 | 347 | 295 | 7 | 12 | 188 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 10 | 10 | 11 | 11 | 11 | 11 |
| Lane Util. Factor | 0.95 | 0.95 | 0.95 | 0.95 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | | | 0.996 | | 0.873 | |
| Flt Protected | | 0.971 | | | 0.997 | |
| Satd. Flow (prot) | 0 | 2915 | 2943 | 0 | 1248 | 0 |
| Flt Permitted | | 0.971 | | | 0.997 | |
| Satd. Flow (perm) | 0 | 2915 | 2943 | 0 | 1248 | 0 |
| Link Speed (mph) | | 30 | 30 | | 30 | |
| Link Distance (ft) | | 1290 | 1238 | | 93 | |
| Travel Time (s) | | 29.3 | 28.1 | | 2.1 | |
| Confl. Peds. (#/hr) | 8 | | | 8 | 14 | 9 |
| Confl. Bikes (#/hr) | | | | 1 | | 2 |
| Peak Hour Factor | 0.85 | 0.85 | 0.73 | 0.73 | 0.88 | 0.88 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 0% | 0% | 4% |
| Parking (#/hr) | | | 0 | 0 | 0 | 0 |
| Adj. Flow (vph) | 631 | 408 | 404 | 10 | 14 | 214 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 1039 | 414 | 0 | 228 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Left | Right | Left | Right |
| Median Width(ft) | | 0 | 0 | | 11 | |
| Link Offset(ft) | | 0 | 0 | | 0 | |
| Crosswalk Width(ft) | | 16 | 16 | | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.25 | 1.25 | 1.27 | 1.19 | 1.36 | 1.19 |
| Turning Speed (mph) | 15 | | | 9 | 15 | 9 |
| Sign Control | | Free | Free | | Stop | |

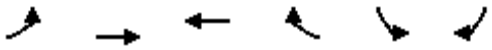
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 67.8% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 536 | 347 | 295 | 7 | 12 | 188 |
| Future Volume (Veh/h) | 536 | 347 | 295 | 7 | 12 | 188 |
| Sign Control | | Free | Free | | Stop | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.85 | 0.85 | 0.73 | 0.73 | 0.88 | 0.88 |
| Hourly flow rate (vph) | 631 | 408 | 404 | 10 | 14 | 214 |
| Pedestrians | | 9 | 14 | | 8 | |
| Lane Width (ft) | | 10.0 | 11.0 | | 11.0 | |
| Walking Speed (ft/s) | | 4.0 | 4.0 | | 4.0 | |
| Percent Blockage | | 1 | 1 | | 1 | |
| Right turn flare (veh) | | | | | | |
| Median type | | None | None | | | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 422 | | | | 1897 | 224 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 422 | | | | 1897 | 224 |
| tC, single (s) | 4.1 | | | | 6.8 | 7.0 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 2.2 | | | | 3.5 | 3.3 |
| p0 queue free % | 44 | | | | 49 | 72 |
| cM capacity (veh/h) | 1134 | | | | 27 | 764 |

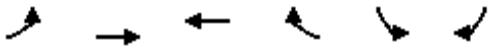
| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | SB 1 |
|---|---|---|---|---|---|
| Volume Total | 767 | 272 | 269 | 145 | 228 |
| Volume Left | 631 | 0 | 0 | 0 | 14 |
| Volume Right | 0 | 0 | 0 | 10 | 214 |
| cSH | 1134 | 1700 | 1700 | 1700 | 288 |
| Volume to Capacity | 0.56 | 0.16 | 0.16 | 0.09 | 0.79 |
| Queue Length 95th (ft) | 89 | 0 | 0 | 0 | 156 |
| Control Delay (s) | 11.2 | 0.0 | 0.0 | 0.0 | 52.4 |
| Lane LOS | B | | | | F |
| Approach Delay (s) | 8.3 | | 0.0 | | 52.4 |
| Approach LOS | | | | | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 12.2 | | |
| Intersection Capacity Utilization | 67.8% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 162 | 252 | 0 | 0 | 0 |
| Future Volume (vph) | 0 | 162 | 252 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 3610 | 1900 | 0 | 0 | 0 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 3610 | 1900 | 0 | 0 | 0 |
| Link Speed (mph) | | 30 | 30 | | 30 | |
| Link Distance (ft) | | 138 | 380 | | 61 | |
| Travel Time (s) | | 3.1 | 8.6 | | 1.4 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 0 | 176 | 274 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 176 | 274 | 0 | 0 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Left | Right | Left | Right |
| Median Width(ft) | | 0 | 0 | | 0 | |
| Link Offset(ft) | | 0 | 0 | | 0 | |
| Crosswalk Width(ft) | | 16 | 16 | | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | | 9 | 15 | 9 |
| Sign Control | | Free | Free | | Stop | |

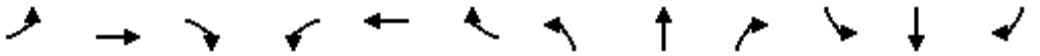
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 16.6% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | ↑↑ | ↑ | | | |
| Traffic Volume (veh/h) | 0 | 162 | 252 | 0 | 0 | 0 |
| Future Volume (Veh/h) | 0 | 162 | 252 | 0 | 0 | 0 |
| Sign Control | | Free | Free | | Stop | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 0 | 176 | 274 | 0 | 0 | 0 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | None | None | | | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | 138 | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 274 | | | | 362 | 274 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 274 | | | | 362 | 274 |
| tC, single (s) | 4.1 | | | | 6.8 | 6.9 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 2.2 | | | | 3.5 | 3.3 |
| p0 queue free % | 100 | | | | 100 | 100 |
| cM capacity (veh/h) | 1301 | | | | 616 | 730 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 |
|---|---|---|---|
| Volume Total | 88 | 88 | 274 |
| Volume Left | 0 | 0 | 0 |
| Volume Right | 0 | 0 | 0 |
| cSH | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.05 | 0.05 | 0.16 |
| Queue Length 95th (ft) | 0 | 0 | 0 |
| Control Delay (s) | 0.0 | 0.0 | 0.0 |
| Lane LOS | | | |
| Approach Delay (s) | 0.0 | | 0.0 |
| Approach LOS | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.0 | | |
| Intersection Capacity Utilization | 16.6% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



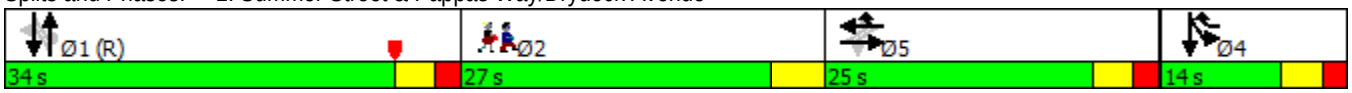
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 67 | 39 | 16 | 272 | 122 | 321 | 10 | 715 | 141 | 91 | 1027 | 228 |
| Future Volume (vph) | 67 | 39 | 16 | 272 | 122 | 321 | 10 | 715 | 141 | 91 | 1027 | 228 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 14 | 12 | 12 | 13 | 16 | 10 | 11 | 12 | 13 | 12 | 12 |
| Storage Length (ft) | 0 | | 0 | 350 | | 0 | 70 | | 0 | 350 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor | | 0.99 | | | 0.98 | | 0.98 | 0.99 | | 0.99 | 0.96 | |
| Frt | | 0.982 | | | | 0.850 | | 0.975 | | | 0.973 | |
| Flt Protected | | 0.973 | | | 0.967 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1642 | 0 | 0 | 1703 | 1569 | 1516 | 2954 | 0 | 1569 | 2955 | 0 |
| Flt Permitted | | 0.358 | | | 0.710 | | 0.146 | | | 0.146 | | |
| Satd. Flow (perm) | 0 | 601 | 0 | 0 | 1221 | 1569 | 229 | 2954 | 0 | 240 | 2955 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 7 | | | | 353 | | 23 | | | 33 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 745 | | | 950 | | | 1510 | | | 501 | |
| Travel Time (s) | | 16.9 | | | 21.6 | | | 34.3 | | | 11.4 | |
| Confl. Peds. (#/hr) | 21 | | 33 | 33 | | 21 | 138 | | 34 | 34 | | 138 |
| Confl. Bikes (#/hr) | | | 1 | | | 1 | | | 2 | | | 25 |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.91 | 0.91 | 0.91 | 0.90 | 0.90 | 0.90 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 6% | 3% | 8% | 0% | 1% | 5% | 0% | 3% | 2% | 7% | 3% | 4% |
| Adj. Flow (vph) | 79 | 46 | 19 | 299 | 134 | 353 | 11 | 794 | 157 | 98 | 1104 | 245 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 144 | 0 | 0 | 433 | 353 | 11 | 951 | 0 | 98 | 1349 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 6 | | | 13 | | | 17 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.05 | 1.14 | 1.14 | 1.10 | 0.97 | 1.25 | 1.19 | 1.14 | 1.10 | 1.14 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | 20 | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | 20 | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |

| Lane Group | Ø2 |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | |
| Future Volume (vph) | |
| Ideal Flow (vphpl) | |
| Lane Width (ft) | |
| Storage Length (ft) | |
| Storage Lanes | |
| Taper Length (ft) | |
| Lane Util. Factor | |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Right Turn on Red | |
| Satd. Flow (RTOR) | |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | |
| Heavy Vehicles (%) | |
| Adj. Flow (vph) | |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | |
| Enter Blocked Intersection | |
| Lane Alignment | |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | |
| Turning Speed (mph) | |
| Number of Detectors | |
| Detector Template | |
| Leading Detector (ft) | |
| Trailing Detector (ft) | |
| Detector 1 Position(ft) | |
| Detector 1 Size(ft) | |
| Detector 1 Type | |
| Detector 1 Channel | |
| Detector 1 Extend (s) | |
| Detector 1 Queue (s) | |
| Detector 1 Delay (s) | |
| Detector 2 Position(ft) | |
| Detector 2 Size(ft) | |
| Detector 2 Type | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | pt+ov | Perm | NA | | D.P+P | NA | |
| Protected Phases | | 5 | | | 5 | 5 4 | | 1 | | 4 | 1 4 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Detector Phase | 5 | 5 | | 5 | 5 | 5 4 | 1 | 1 | | 4 | 1 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | | |
| Minimum Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | | 13.0 | 13.0 | | 13.0 | | |
| Total Split (s) | 25.0 | 25.0 | | 25.0 | 25.0 | | 34.0 | 34.0 | | 14.0 | | |
| Total Split (%) | 25.0% | 25.0% | | 25.0% | 25.0% | | 34.0% | 34.0% | | 14.0% | | |
| Maximum Green (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 29.0 | 29.0 | | 9.0 | | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | 0.0 | 0.0 | | 0.0 | | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | 5.0 | 5.0 | | 5.0 | | |
| Lead/Lag | | | | | | | Lead | Lead | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | | |
| Recall Mode | None | None | | None | None | | C-Max | C-Max | | None | | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 30.8 | | | 30.8 | 44.8 | 29.0 | 29.0 | | 38.0 | 43.0 | |
| Actuated g/C Ratio | | 0.31 | | | 0.31 | 0.45 | 0.29 | 0.29 | | 0.38 | 0.43 | |
| v/c Ratio | | 0.76 | | | 1.15 | 0.39 | 0.17 | 1.09 | | 0.47 | 1.05 | |
| Control Delay | | 63.0 | | | 130.7 | 4.1 | 34.1 | 92.2 | | 25.2 | 66.7 | |
| Queue Delay | | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | | 63.0 | | | 130.7 | 4.1 | 34.1 | 92.2 | | 25.2 | 66.7 | |
| LOS | | E | | | F | A | C | F | | C | E | |
| Approach Delay | | 63.0 | | | 73.8 | | | 91.6 | | | 63.8 | |
| Approach LOS | | E | | | E | | | F | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 100 | | | |
| Actuated Cycle Length: 100 | | | |
| Offset: 0 (0%), Referenced to phase 1:NBSB, Start of Yellow | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 1.15 | | | |
| Intersection Signal Delay: 74.1 | | Intersection LOS: E | |
| Intersection Capacity Utilization 95.9% | | ICU Level of Service F | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 1: Summer Street & Pappas Way/Drydock Avenue



| Lane Group | Ø2 |
|---|---|
| Detector 2 Channel | |
| Detector 2 Extend (s) | |
| Turn Type | |
| Protected Phases | 2 |
| Permitted Phases | |
| Detector Phase | |
| Switch Phase | |
| Minimum Initial (s) | 4.0 |
| Minimum Split (s) | 27.0 |
| Total Split (s) | 27.0 |
| Total Split (%) | 27% |
| Maximum Green (s) | 23.0 |
| Yellow Time (s) | 4.0 |
| All-Red Time (s) | 0.0 |
| Lost Time Adjust (s) | |
| Total Lost Time (s) | |
| Lead/Lag | Lag |
| Lead-Lag Optimize? | |
| Vehicle Extension (s) | 2.0 |
| Recall Mode | None |
| Walk Time (s) | 7.0 |
| Flash Dont Walk (s) | 16.0 |
| Pedestrian Calls (#/hr) | 28 |
| Act Effct Green (s) | |
| Actuated g/C Ratio | |
| v/c Ratio | |
| Control Delay | |
| Queue Delay | |
| Total Delay | |
| LOS | |
| Approach Delay | |
| Approach LOS | |

| Intersection Summary |
|---|

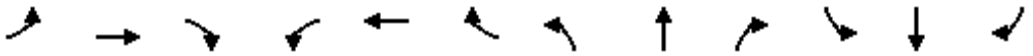


| Lane Group | EBT | WBT | WBR | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 144 | 433 | 353 | 11 | 951 | 98 | 1349 |
| v/c Ratio | 0.76 | 1.15 | 0.39 | 0.17 | 1.09 | 0.47 | 1.05 |
| Control Delay | 63.0 | 130.7 | 4.1 | 34.1 | 92.2 | 25.2 | 66.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 63.0 | 130.7 | 4.1 | 34.1 | 92.2 | 25.2 | 66.7 |
| Queue Length 50th (ft) | ~105 | ~415 | 0 | 5 | ~356 | 37 | ~488 |
| Queue Length 95th (ft) | #212 | #603 | 60 | 22 | #484 | 70 | #626 |
| Internal Link Dist (ft) | 665 | 870 | | | 1430 | | 421 |
| Turn Bay Length (ft) | | | | 70 | | 350 | |
| Base Capacity (vph) | 189 | 376 | 897 | 66 | 872 | 210 | 1289 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.76 | 1.15 | 0.39 | 0.17 | 1.09 | 0.47 | 1.05 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

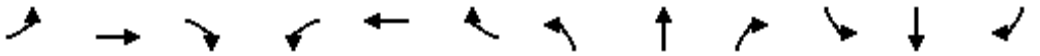
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 67 | 39 | 16 | 272 | 122 | 321 | 10 | 715 | 141 | 91 | 1027 | 228 |
| Future Volume (vph) | 67 | 39 | 16 | 272 | 122 | 321 | 10 | 715 | 141 | 91 | 1027 | 228 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 14 | 12 | 12 | 13 | 16 | 10 | 11 | 12 | 13 | 12 | 12 |
| Total Lost time (s) | | 5.0 | | | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | 1.00 | 1.00 | 0.95 | | 1.00 | 0.95 | |
| Frpb, ped/bikes | | 0.99 | | | 1.00 | 1.00 | 1.00 | 0.99 | | 1.00 | 0.96 | |
| Flpb, ped/bikes | | 1.00 | | | 0.98 | 1.00 | 0.98 | 1.00 | | 1.00 | 1.00 | |
| Frt | | 0.98 | | | 1.00 | 0.85 | 1.00 | 0.98 | | 1.00 | 0.97 | |
| Flt Protected | | 0.97 | | | 0.97 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 1639 | | | 1674 | 1569 | 1487 | 2954 | | 1568 | 2951 | |
| Flt Permitted | | 0.36 | | | 0.71 | 1.00 | 0.15 | 1.00 | | 0.15 | 1.00 | |
| Satd. Flow (perm) | | 603 | | | 1230 | 1569 | 228 | 2954 | | 241 | 2951 | |
| Peak-hour factor, PHF | 0.85 | 0.85 | 0.85 | 0.91 | 0.91 | 0.91 | 0.90 | 0.90 | 0.90 | 0.93 | 0.93 | 0.93 |
| Adj. Flow (vph) | 79 | 46 | 19 | 299 | 134 | 353 | 11 | 794 | 157 | 98 | 1104 | 245 |
| RTOR Reduction (vph) | 0 | 5 | 0 | 0 | 0 | 195 | 0 | 17 | 0 | 0 | 19 | 0 |
| Lane Group Flow (vph) | 0 | 139 | 0 | 0 | 433 | 158 | 11 | 934 | 0 | 98 | 1330 | 0 |
| Confl. Peds. (#/hr) | 21 | | 33 | 33 | | 21 | 138 | | 34 | 34 | | 138 |
| Confl. Bikes (#/hr) | | | 1 | | | 1 | | | 2 | | | 25 |
| Heavy Vehicles (%) | 6% | 3% | 8% | 0% | 1% | 5% | 0% | 3% | 2% | 7% | 3% | 4% |
| Turn Type | Perm | NA | | Perm | NA | pt+ov | Perm | NA | | D.P+P | NA | |
| Protected Phases | | 5 | | | 5 | 5 4 | | 1 | | 4 | 1 4 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 30.8 | | | 30.8 | 44.8 | 27.4 | 27.4 | | 36.4 | 41.4 | |
| Effective Green, g (s) | | 30.8 | | | 30.8 | 44.8 | 27.4 | 27.4 | | 36.4 | 41.4 | |
| Actuated g/C Ratio | | 0.31 | | | 0.31 | 0.45 | 0.27 | 0.27 | | 0.36 | 0.41 | |
| Clearance Time (s) | | 5.0 | | | 5.0 | | 5.0 | 5.0 | | 5.0 | | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | | 2.0 | 2.0 | | 2.0 | | |
| Lane Grp Cap (vph) | | 185 | | | 378 | 702 | 62 | 809 | | 207 | 1221 | |
| v/s Ratio Prot | | | | | | 0.10 | | 0.32 | | 0.04 | c0.45 | |
| v/s Ratio Perm | | 0.23 | | | c0.35 | | 0.05 | | | 0.13 | | |
| v/c Ratio | | 0.75 | | | 1.15 | 0.23 | 0.18 | 1.15 | | 0.47 | 1.09 | |
| Uniform Delay, d1 | | 31.2 | | | 34.6 | 16.9 | 27.7 | 36.3 | | 24.4 | 29.3 | |
| Progression Factor | | 1.00 | | | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 14.2 | | | 92.1 | 0.1 | 6.2 | 83.5 | | 0.6 | 53.5 | |
| Delay (s) | | 45.3 | | | 126.7 | 17.0 | 33.9 | 119.8 | | 25.0 | 82.8 | |
| Level of Service | | D | | | F | B | C | F | | C | F | |
| Approach Delay (s) | | 45.3 | | | 77.4 | | | 118.9 | | | 78.9 | |
| Approach LOS | | D | | | E | | | F | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 88.6 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 0.99 | | |
| Actuated Cycle Length (s) | 100.0 | Sum of lost time (s) | 19.0 |
| Intersection Capacity Utilization | 95.9% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

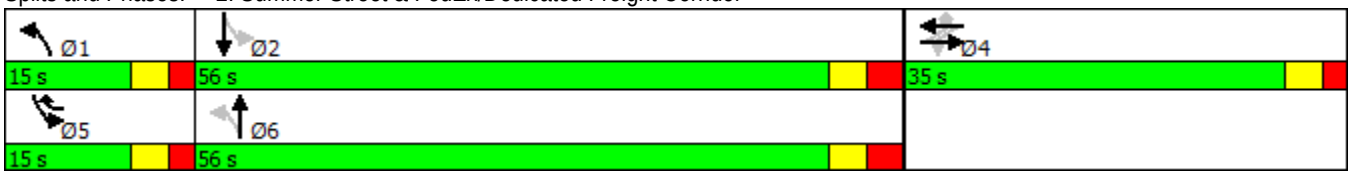


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 21 | 0 | 5 | 16 | 0 | 10 | 5 | 836 | 5 | 0 | 1299 | 16 |
| Future Volume (vph) | 21 | 0 | 5 | 16 | 0 | 10 | 5 | 836 | 5 | 0 | 1299 | 16 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 13 | 13 | 13 | 12 | 12 | 12 | 10 | 10 | 10 | 11 | 11 | 11 |
| Storage Length (ft) | 0 | | 0 | 0 | | 60 | 60 | | 0 | 120 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 50 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Frt | | 0.976 | | | | 0.850 | | 0.999 | | | 0.998 | |
| Flt Protected | | 0.961 | | | 0.950 | | 0.950 | | | | | |
| Satd. Flow (prot) | 0 | 1657 | 0 | 0 | 1624 | 727 | 1516 | 3029 | 0 | 826 | 3044 | 0 |
| Flt Permitted | | 0.752 | | | 0.739 | | 0.152 | | | | | |
| Satd. Flow (perm) | 0 | 1297 | 0 | 0 | 1264 | 727 | 243 | 3029 | 0 | 826 | 3044 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 82 | | | | 31 | | 1 | | | 1 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 228 | | | 352 | | | 665 | | | 1510 | |
| Travel Time (s) | | 5.2 | | | 8.0 | | | 15.1 | | | 34.3 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 100% | 0% | 0% | 0% | 100% | 3% | 0% |
| Adj. Flow (vph) | 23 | 0 | 5 | 17 | 0 | 11 | 5 | 909 | 5 | 0 | 1412 | 17 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 28 | 0 | 0 | 17 | 11 | 5 | 914 | 0 | 0 | 1429 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 12 | | | 11 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.10 | 1.10 | 1.10 | 1.14 | 1.14 | 1.14 | 1.25 | 1.25 | 1.25 | 1.19 | 1.19 | 1.19 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | 20 | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | 20 | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | pm+ov | pm+pt | NA | | pm+pt | NA | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Protected Phases | | 4 | | | 4 | 5 | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 4 | | | 4 | | 4 | 6 | 6 | | 2 | | |
| Detector Phase | 4 | 4 | | 4 | 4 | 5 | 1 | 6 | | 5 | 2 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 6.0 | 6.0 | | 6.0 | 6.0 | 6.0 | 6.0 | 10.0 | | 6.0 | 10.0 | |
| Minimum Split (s) | 26.0 | 26.0 | | 26.0 | 26.0 | 11.0 | 11.0 | 24.0 | | 11.0 | 24.0 | |
| Total Split (s) | 35.0 | 35.0 | | 35.0 | 35.0 | 15.0 | 15.0 | 56.0 | | 15.0 | 56.0 | |
| Total Split (%) | 33.0% | 33.0% | | 33.0% | 33.0% | 14.2% | 14.2% | 52.8% | | 14.2% | 52.8% | |
| Maximum Green (s) | 30.0 | 30.0 | | 30.0 | 30.0 | 10.0 | 10.0 | 50.0 | | 10.0 | 50.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 3.0 | | 2.0 | 3.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | 5.0 | 5.0 | 6.0 | | 5.0 | 6.0 | |
| Lead/Lag | | | | | | Lead | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | None | None | | None | None | None | None | Ped | | None | Max | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | | 7.0 | | | | |
| Flash Dont Walk (s) | 14.0 | 14.0 | | 14.0 | 14.0 | | | 9.0 | | | | |
| Pedestrian Calls (#/hr) | 10 | 10 | | 10 | 10 | | | 10 | | | | |
| Act Effct Green (s) | | 8.5 | | | 8.5 | 15.1 | 59.0 | 59.5 | | | 59.5 | |
| Actuated g/C Ratio | | 0.12 | | | 0.12 | 0.20 | 0.80 | 0.81 | | | 0.81 | |
| v/c Ratio | | 0.13 | | | 0.12 | 0.06 | 0.02 | 0.37 | | | 0.58 | |
| Control Delay | | 1.2 | | | 30.4 | 2.4 | 4.0 | 5.9 | | | 8.6 | |
| Queue Delay | | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | | | 0.0 | |
| Total Delay | | 1.2 | | | 30.4 | 2.4 | 4.0 | 5.9 | | | 8.6 | |
| LOS | | A | | | C | A | A | A | | | A | |
| Approach Delay | | 1.2 | | | 19.4 | | | 5.9 | | | 8.6 | |
| Approach LOS | | A | | | B | | | A | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 106 | | | |
| Actuated Cycle Length: 73.8 | | | |
| Natural Cycle: 80 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 0.58 | | | |
| Intersection Signal Delay: 7.6 | | Intersection LOS: A | |
| Intersection Capacity Utilization 57.9% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

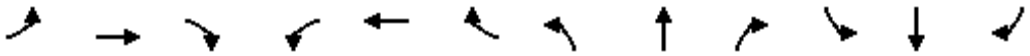
Splits and Phases: 2: Summer Street & FedEx/Dedicated Freight Corridor





| Lane Group | EBT | WBT | WBR | NBL | NBT | SBT |
|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 28 | 17 | 11 | 5 | 914 | 1429 |
| v/c Ratio | 0.13 | 0.12 | 0.06 | 0.02 | 0.37 | 0.58 |
| Control Delay | 1.2 | 30.4 | 2.4 | 4.0 | 5.9 | 8.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 1.2 | 30.4 | 2.4 | 4.0 | 5.9 | 8.6 |
| Queue Length 50th (ft) | 0 | 7 | 0 | 1 | 52 | 108 |
| Queue Length 95th (ft) | 0 | 25 | 4 | 4 | 233 | 477 |
| Internal Link Dist (ft) | 148 | 272 | | | 585 | 1430 |
| Turn Bay Length (ft) | | | 60 | 60 | | |
| Base Capacity (vph) | 583 | 521 | 211 | 371 | 2441 | 2453 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.05 | 0.03 | 0.05 | 0.01 | 0.37 | 0.58 |

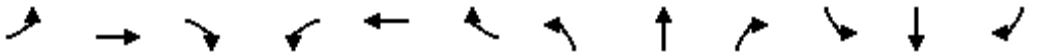
Intersection Summary



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 21 | 0 | 5 | 16 | 0 | 10 | 5 | 836 | 5 | 0 | 1299 | 16 |
| Future Volume (vph) | 21 | 0 | 5 | 16 | 0 | 10 | 5 | 836 | 5 | 0 | 1299 | 16 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 13 | 13 | 13 | 12 | 12 | 12 | 10 | 10 | 10 | 11 | 11 | 11 |
| Total Lost time (s) | | 5.0 | | | 5.0 | 5.0 | 5.0 | 6.0 | | | 6.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | 1.00 | 1.00 | 0.95 | | | 0.95 | |
| Frt | | 0.98 | | | 1.00 | 0.85 | 1.00 | 1.00 | | | 1.00 | |
| Flt Protected | | 0.96 | | | 0.95 | 1.00 | 0.95 | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | | 1656 | | | 1624 | 727 | 1516 | 3030 | | | 3045 | |
| Flt Permitted | | 0.75 | | | 0.74 | 1.00 | 0.15 | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | | 1298 | | | 1264 | 727 | 243 | 3030 | | | 3045 | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 23 | 0 | 5 | 17 | 0 | 11 | 5 | 909 | 5 | 0 | 1412 | 17 |
| RTOR Reduction (vph) | 0 | 26 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 2 | 0 | 0 | 17 | 1 | 5 | 914 | 0 | 0 | 1429 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 100% | 0% | 0% | 0% | 100% | 3% | 0% |
| Turn Type | Perm | NA | | Perm | NA | pm+ov | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | | 4 | | | 4 | 5 | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 4 | | | 4 | | 4 | 6 | 6 | | 2 | | |
| Actuated Green, G (s) | | 6.0 | | | 6.0 | 7.0 | 58.0 | 57.0 | | | 57.0 | |
| Effective Green, g (s) | | 6.0 | | | 6.0 | 7.0 | 58.0 | 57.0 | | | 57.0 | |
| Actuated g/C Ratio | | 0.08 | | | 0.08 | 0.09 | 0.72 | 0.71 | | | 0.71 | |
| Clearance Time (s) | | 5.0 | | | 5.0 | 5.0 | 5.0 | 6.0 | | | 6.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | 2.0 | 2.0 | 2.0 | | | 2.0 | |
| Lane Grp Cap (vph) | | 97 | | | 94 | 109 | 192 | 2158 | | | 2169 | |
| v/s Ratio Prot | | | | | | c0.00 | 0.00 | 0.30 | | | c0.47 | |
| v/s Ratio Perm | | 0.00 | | | c0.01 | 0.00 | 0.02 | | | | | |
| v/c Ratio | | 0.02 | | | 0.18 | 0.01 | 0.03 | 0.42 | | | 0.66 | |
| Uniform Delay, d1 | | 34.3 | | | 34.7 | 33.3 | 3.7 | 4.7 | | | 6.2 | |
| Progression Factor | | 1.00 | | | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 0.0 | | | 0.3 | 0.0 | 0.0 | 0.0 | | | 1.6 | |
| Delay (s) | | 34.3 | | | 35.0 | 33.3 | 3.8 | 4.8 | | | 7.8 | |
| Level of Service | | C | | | D | C | A | A | | | A | |
| Approach Delay (s) | | 34.3 | | | 34.4 | | | 4.8 | | | 7.8 | |
| Approach LOS | | C | | | C | | | A | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 7.3 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.60 | | |
| Actuated Cycle Length (s) | 80.0 | Sum of lost time (s) | 16.0 |
| Intersection Capacity Utilization | 57.9% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



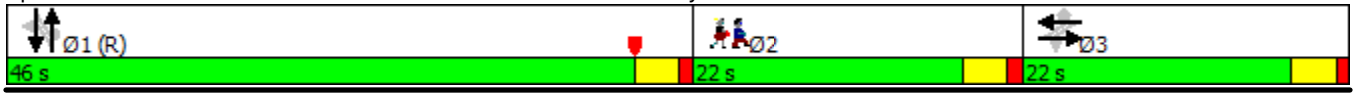
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 16 | 0 | 10 | 41 | 0 | 43 | 0 | 778 | 38 | 42 | 1236 | 10 |
| Future Volume (vph) | 16 | 0 | 10 | 41 | 0 | 43 | 0 | 778 | 38 | 42 | 1236 | 10 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 14 | 12 | 12 | 12 | 12 | 10 | 10 | 12 | 10 | 10 | 10 |
| Storage Length (ft) | 0 | | 0 | 0 | | 100 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Ped Bike Factor | | | | | | | | | | | 1.00 | |
| Frt | | 0.949 | | | | 0.850 | | 0.994 | | | 0.999 | |
| Flt Protected | | 0.970 | | | 0.950 | | | | | | 0.998 | |
| Satd. Flow (prot) | 0 | 1618 | 0 | 0 | 1624 | 1454 | 0 | 2958 | 0 | 0 | 2957 | 0 |
| Flt Permitted | | 0.841 | | | 0.813 | | | | | | 0.875 | |
| Satd. Flow (perm) | 0 | 1403 | 0 | 0 | 1390 | 1454 | 0 | 2958 | 0 | 0 | 2593 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 384 | | | 327 | | | 365 | | | 665 | |
| Travel Time (s) | | 8.7 | | | 7.4 | | | 8.3 | | | 15.1 | |
| Confl. Peds. (#/hr) | | | | | | | 153 | | | | | 153 |
| Confl. Bikes (#/hr) | | | | | | | | | | | | 34 |
| Peak Hour Factor | 0.65 | 0.92 | 0.65 | 0.92 | 0.92 | 0.92 | 0.85 | 0.85 | 0.92 | 0.92 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 6% | 0% | 0% | 0% | 0% | 0% | 0% | 2% | 0% | 0% | 2% | 0% |
| Parking (#/hr) | | | | | | | 1 | | | | | 1 |
| Adj. Flow (vph) | 25 | 0 | 15 | 45 | 0 | 47 | 0 | 915 | 41 | 46 | 1288 | 10 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 40 | 0 | 0 | 45 | 47 | 0 | 956 | 0 | 0 | 1344 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.05 | 1.14 | 1.14 | 1.14 | 1.14 | 1.25 | 1.25 | 1.14 | 1.25 | 1.25 | 1.25 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | 20 | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | 20 | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |

| Lane Group | Ø2 |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | |
| Future Volume (vph) | |
| Ideal Flow (vphpl) | |
| Lane Width (ft) | |
| Storage Length (ft) | |
| Storage Lanes | |
| Taper Length (ft) | |
| Lane Util. Factor | |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Right Turn on Red | |
| Satd. Flow (RTOR) | |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | |
| Heavy Vehicles (%) | |
| Parking (#/hr) | |
| Adj. Flow (vph) | |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | |
| Enter Blocked Intersection | |
| Lane Alignment | |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | |
| Turning Speed (mph) | |
| Number of Detectors | |
| Detector Template | |
| Leading Detector (ft) | |
| Trailing Detector (ft) | |
| Detector 1 Position(ft) | |
| Detector 1 Size(ft) | |
| Detector 1 Type | |
| Detector 1 Channel | |
| Detector 1 Extend (s) | |
| Detector 1 Queue (s) | |
| Detector 1 Delay (s) | |
| Detector 2 Position(ft) | |
| Detector 2 Size(ft) | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | Perm | | NA | | Perm | NA | |
| Protected Phases | | 3 | | | 3 | | | 1 | | | 1 | |
| Permitted Phases | 3 | | | 3 | | 3 | 1 | | | 1 | | |
| Detector Phase | 3 | 3 | | 3 | 3 | 3 | 1 | 1 | | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Minimum Split (s) | 22.0 | 22.0 | | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | | 22.0 | 22.0 | |
| Total Split (s) | 22.0 | 22.0 | | 22.0 | 22.0 | 22.0 | 46.0 | 46.0 | | 46.0 | 46.0 | |
| Total Split (%) | 24.4% | 24.4% | | 24.4% | 24.4% | 24.4% | 51.1% | 51.1% | | 51.1% | 51.1% | |
| Maximum Green (s) | 18.0 | 18.0 | | 18.0 | 18.0 | 18.0 | 42.0 | 42.0 | | 42.0 | 42.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | 0.0 | | 0.0 | | | 0.0 | |
| Total Lost Time (s) | | 4.0 | | | 4.0 | 4.0 | | 4.0 | | | 4.0 | |
| Lead/Lag | | | | | | | Lead | Lead | | Lead | Lead | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | Min | Min | | Min | Min | Min | C-Max | C-Max | | C-Max | C-Max | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 11.0 | 11.0 | | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | | 11.0 | 11.0 | |
| Pedestrian Calls (#/hr) | 60 | 60 | | 60 | 60 | 60 | 60 | 60 | | 60 | 60 | |
| Act Effct Green (s) | | 15.3 | | | 15.3 | 15.3 | | 44.7 | | | 44.7 | |
| Actuated g/C Ratio | | 0.17 | | | 0.17 | 0.17 | | 0.50 | | | 0.50 | |
| v/c Ratio | | 0.17 | | | 0.19 | 0.19 | | 0.65 | | | 1.04 | |
| Control Delay | | 31.7 | | | 32.1 | 32.1 | | 20.4 | | | 62.6 | |
| Queue Delay | | 0.0 | | | 0.0 | 0.0 | | 1.6 | | | 0.0 | |
| Total Delay | | 31.7 | | | 32.1 | 32.1 | | 22.0 | | | 62.6 | |
| LOS | | C | | | C | C | | C | | | E | |
| Approach Delay | | 31.7 | | | 32.1 | | | 22.0 | | | 62.6 | |
| Approach LOS | | C | | | C | | | C | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 0 (0%), Referenced to phase 1:NBSB, Start of Yellow | | | |
| Natural Cycle: 90 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 1.04 | | | |
| Intersection Signal Delay: 45.0 | | Intersection LOS: D | |
| Intersection Capacity Utilization 83.3% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 3: Summer Street & Elkins Street/Elkins Driveway



| Lane Group | Ø2 |
|---|---|
| Detector 2 Type | |
| Detector 2 Channel | |
| Detector 2 Extend (s) | |
| Turn Type | |
| Protected Phases | 2 |
| Permitted Phases | |
| Detector Phase | |
| Switch Phase | |
| Minimum Initial (s) | 4.0 |
| Minimum Split (s) | 22.0 |
| Total Split (s) | 22.0 |
| Total Split (%) | 24% |
| Maximum Green (s) | 18.0 |
| Yellow Time (s) | 3.0 |
| All-Red Time (s) | 1.0 |
| Lost Time Adjust (s) | |
| Total Lost Time (s) | |
| Lead/Lag | Lag |
| Lead-Lag Optimize? | |
| Vehicle Extension (s) | 2.0 |
| Recall Mode | Ped |
| Walk Time (s) | 7.0 |
| Flash Dont Walk (s) | 11.0 |
| Pedestrian Calls (#/hr) | 60 |
| Act Effct Green (s) | |
| Actuated g/C Ratio | |
| v/c Ratio | |
| Control Delay | |
| Queue Delay | |
| Total Delay | |
| LOS | |
| Approach Delay | |
| Approach LOS | |

| Intersection Summary |
|---|

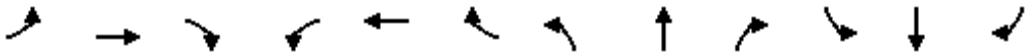


| Lane Group | EBT | WBT | WBR | NBT | SBT |
|---|---|---|---|---|---|
| Lane Group Flow (vph) | 40 | 45 | 47 | 956 | 1344 |
| v/c Ratio | 0.17 | 0.19 | 0.19 | 0.65 | 1.04 |
| Control Delay | 31.7 | 32.1 | 32.1 | 20.4 | 62.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 1.6 | 0.0 |
| Total Delay | 31.7 | 32.1 | 32.1 | 22.0 | 62.6 |
| Queue Length 50th (ft) | 19 | 21 | 22 | 217 | ~464 |
| Queue Length 95th (ft) | 47 | 52 | 52 | 263 | #596 |
| Internal Link Dist (ft) | 304 | 247 | | 285 | 585 |
| Turn Bay Length (ft) | | | 100 | | |
| Base Capacity (vph) | 280 | 278 | 290 | 1469 | 1288 |
| Starvation Cap Reductn | 0 | 0 | 0 | 324 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.14 | 0.16 | 0.16 | 0.83 | 1.04 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 16 | 0 | 10 | 41 | 0 | 43 | 0 | 778 | 38 | 42 | 1236 | 10 |
| Future Volume (vph) | 16 | 0 | 10 | 41 | 0 | 43 | 0 | 778 | 38 | 42 | 1236 | 10 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 14 | 12 | 12 | 12 | 12 | 10 | 10 | 12 | 10 | 10 | 10 |
| Total Lost time (s) | | 4.0 | | | 4.0 | 4.0 | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | 1.00 | | 0.95 | | | 0.95 | |
| Frpb, ped/bikes | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Flpb, ped/bikes | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Frt | | 0.95 | | | 1.00 | 0.85 | | 0.99 | | | 1.00 | |
| Flt Protected | | 0.97 | | | 0.95 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | | 1618 | | | 1624 | 1454 | | 2956 | | | 2958 | |
| Flt Permitted | | 0.84 | | | 0.81 | 1.00 | | 1.00 | | | 0.88 | |
| Satd. Flow (perm) | | 1403 | | | 1390 | 1454 | | 2956 | | | 2593 | |
| Peak-hour factor, PHF | 0.65 | 0.92 | 0.65 | 0.92 | 0.92 | 0.92 | 0.85 | 0.85 | 0.92 | 0.92 | 0.96 | 0.96 |
| Adj. Flow (vph) | 25 | 0 | 15 | 45 | 0 | 47 | 0 | 915 | 41 | 46 | 1288 | 10 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 40 | 0 | 0 | 45 | 47 | 0 | 956 | 0 | 0 | 1344 | 0 |
| Confl. Peds. (#/hr) | | | | | | | 153 | | | | | 153 |
| Confl. Bikes (#/hr) | | | | | | | | | | | | 34 |
| Heavy Vehicles (%) | 6% | 0% | 0% | 0% | 0% | 0% | 0% | 2% | 0% | 0% | 2% | 0% |
| Parking (#/hr) | | | | | | | 1 | | | | | 1 |
| Turn Type | Perm | NA | | Perm | NA | Perm | | NA | | Perm | NA | |
| Protected Phases | | 3 | | | 3 | | | 1 | | | 1 | |
| Permitted Phases | 3 | | | 3 | | 3 | 1 | | | 1 | | |
| Actuated Green, G (s) | | 15.3 | | | 15.3 | 15.3 | | 44.7 | | | 44.7 | |
| Effective Green, g (s) | | 15.3 | | | 15.3 | 15.3 | | 44.7 | | | 44.7 | |
| Actuated g/C Ratio | | 0.17 | | | 0.17 | 0.17 | | 0.50 | | | 0.50 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | 4.0 | | 4.0 | | | 4.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | 2.0 | | 2.0 | | | 2.0 | |
| Lane Grp Cap (vph) | | 238 | | | 236 | 247 | | 1468 | | | 1287 | |
| v/s Ratio Prot | | | | | | | | 0.32 | | | | |
| v/s Ratio Perm | | 0.03 | | | c0.03 | 0.03 | | | | | c0.52 | |
| v/c Ratio | | 0.17 | | | 0.19 | 0.19 | | 0.65 | | | 1.04 | |
| Uniform Delay, d1 | | 31.9 | | | 32.0 | 32.0 | | 16.9 | | | 22.6 | |
| Progression Factor | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 0.1 | | | 0.1 | 0.1 | | 2.3 | | | 37.5 | |
| Delay (s) | | 32.0 | | | 32.2 | 32.2 | | 19.1 | | | 60.1 | |
| Level of Service | | C | | | C | C | | B | | | E | |
| Approach Delay (s) | | 32.0 | | | 32.2 | | | 19.1 | | | 60.1 | |
| Approach LOS | | C | | | C | | | B | | | E | |

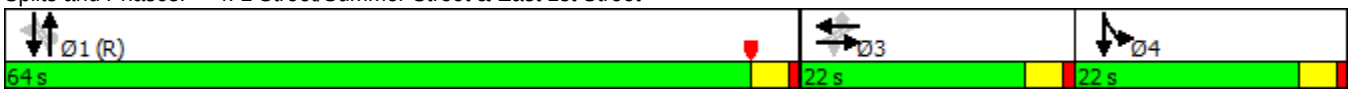
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 42.5 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.64 | | |
| Actuated Cycle Length (s) | 90.0 | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 83.3% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 43 | 110 | 62 | 32 | 49 | 204 | 26 | 563 | 34 | 333 | 805 | 149 |
| Future Volume (vph) | 43 | 110 | 62 | 32 | 49 | 204 | 26 | 563 | 34 | 333 | 805 | 149 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 15 | 12 | 12 | 10 | 10 | 12 | 9 | 9 | 12 | 12 | 12 |
| Storage Length (ft) | 0 | | 0 | 0 | | 150 | 100 | | 0 | 100 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 0 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | 0.95 | | | 0.98 | 0.94 | | 0.99 | | 0.96 | 0.93 | |
| Frt | | 0.961 | | | | 0.850 | | 0.992 | | | 0.977 | |
| Flt Protected | | 0.990 | | | 0.981 | | | 0.998 | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1652 | 0 | 0 | 1520 | 1280 | 0 | 2860 | 0 | 1608 | 1526 | 0 |
| Flt Permitted | | 0.915 | | | 0.622 | | | 0.642 | | 0.328 | | |
| Satd. Flow (perm) | 0 | 1513 | 0 | 0 | 947 | 1197 | 0 | 1840 | 0 | 531 | 1526 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 16 | | | | 240 | | 9 | | | 26 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 540 | | | 576 | | | 340 | | | 365 | |
| Travel Time (s) | | 12.3 | | | 13.1 | | | 7.7 | | | 8.3 | |
| Confl. Peds. (#/hr) | 29 | | 36 | 36 | | 29 | 134 | | 51 | 51 | | 134 |
| Confl. Bikes (#/hr) | | | 12 | | | 1 | | | | | | 19 |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.85 | 0.85 | 0.85 | 0.88 | 0.88 | 0.88 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 13% | 1% | 2% | 0% | 5% | 6% | 0% | 0% | 5% | 1% | 2% | 4% |
| Adj. Flow (vph) | 50 | 128 | 72 | 38 | 58 | 240 | 30 | 640 | 39 | 370 | 894 | 166 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 250 | 0 | 0 | 96 | 240 | 0 | 709 | 0 | 370 | 1060 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.01 | 1.14 | 1.14 | 1.25 | 1.25 | 1.14 | 1.30 | 1.30 | 1.14 | 1.14 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | 20 | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | 20 | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | Perm | Perm | NA | | D.P+P | NA | |
| Protected Phases | | 3 | | | 3 | | | 1 | | 4 | 1 4 | |
| Permitted Phases | 3 | | | 3 | | 3 | 1 | | | 1 | | |
| Detector Phase | 3 | 3 | | 3 | 3 | 3 | 1 | 1 | | 4 | 1 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 10.0 | 10.0 | | 4.0 | | |
| Minimum Split (s) | 22.0 | 22.0 | | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | | 22.0 | | |
| Total Split (s) | 22.0 | 22.0 | | 22.0 | 22.0 | 22.0 | 64.0 | 64.0 | | 22.0 | | |
| Total Split (%) | 20.4% | 20.4% | | 20.4% | 20.4% | 20.4% | 59.3% | 59.3% | | 20.4% | | |
| Maximum Green (s) | 18.0 | 18.0 | | 18.0 | 18.0 | 18.0 | 60.0 | 60.0 | | 18.0 | | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | | 1.0 | | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | 0.0 | | 0.0 | | 0.0 | | |
| Total Lost Time (s) | | 4.0 | | | 4.0 | 4.0 | | 4.0 | | 4.0 | | |
| Lead/Lag | Lead | Lead | | Lead | Lead | Lead | | | | Lag | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 2.0 | | |
| Recall Mode | Max | Max | | Max | Max | Max | C-Max | C-Max | | None | | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | | | |
| Flash Dont Walk (s) | 11.0 | 11.0 | | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | | | | |
| Pedestrian Calls (#/hr) | 60 | 60 | | 60 | 60 | 60 | 60 | 60 | | | | |
| Act Effct Green (s) | | 18.0 | | | 18.0 | 18.0 | | 60.0 | | 78.0 | 82.0 | |
| Actuated g/C Ratio | | 0.17 | | | 0.17 | 0.17 | | 0.56 | | 0.72 | 0.76 | |
| v/c Ratio | | 0.94 | | | 0.61 | 0.60 | | 0.69 | | 0.66 | 0.91 | |
| Control Delay | | 85.3 | | | 59.8 | 12.2 | | 21.5 | | 10.9 | 23.6 | |
| Queue Delay | | 0.0 | | | 0.0 | 0.0 | | 0.0 | | 0.0 | 46.0 | |
| Total Delay | | 85.3 | | | 59.8 | 12.2 | | 21.5 | | 10.9 | 69.6 | |
| LOS | | F | | | E | B | | C | | B | E | |
| Approach Delay | | 85.3 | | | 25.8 | | | 21.5 | | | 54.4 | |
| Approach LOS | | F | | | C | | | C | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 108 | | | |
| Actuated Cycle Length: 108 | | | |
| Offset: 18 (17%), Referenced to phase 1:NBSB, Start of Yellow | | | |
| Natural Cycle: 90 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.94 | | | |
| Intersection Signal Delay: 45.2 | | Intersection LOS: D | |
| Intersection Capacity Utilization 108.6% | | ICU Level of Service G | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 4: L Street/Summer Street & East 1st Street

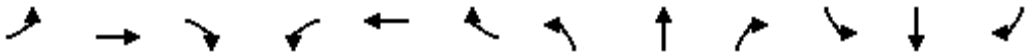




| Lane Group | EBT | WBT | WBR | NBT | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 250 | 96 | 240 | 709 | 370 | 1060 |
| v/c Ratio | 0.94 | 0.61 | 0.60 | 0.69 | 0.66 | 0.91 |
| Control Delay | 85.3 | 59.8 | 12.2 | 21.5 | 10.9 | 23.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 46.0 |
| Total Delay | 85.3 | 59.8 | 12.2 | 21.5 | 10.9 | 69.6 |
| Queue Length 50th (ft) | 163 | 62 | 0 | 174 | 67 | 468 |
| Queue Length 95th (ft) | #298 | #116 | 58 | 238 | 100 | #936 |
| Internal Link Dist (ft) | 460 | 496 | | 260 | | 285 |
| Turn Bay Length (ft) | | | 150 | | 100 | |
| Base Capacity (vph) | 265 | 157 | 399 | 1026 | 563 | 1164 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 200 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.94 | 0.61 | 0.60 | 0.69 | 0.66 | 1.10 |

Intersection Summary

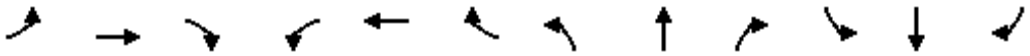
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 43 | 110 | 62 | 32 | 49 | 204 | 26 | 563 | 34 | 333 | 805 | 149 |
| Future Volume (vph) | 43 | 110 | 62 | 32 | 49 | 204 | 26 | 563 | 34 | 333 | 805 | 149 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 15 | 12 | 12 | 10 | 10 | 12 | 9 | 9 | 12 | 12 | 12 |
| Total Lost time (s) | | 4.0 | | | 4.0 | 4.0 | | 4.0 | | 4.0 | 4.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | 1.00 | | 0.95 | | 1.00 | 1.00 | |
| Frpb, ped/bikes | | 0.96 | | | 1.00 | 0.94 | | 0.99 | | 1.00 | 0.93 | |
| Flpb, ped/bikes | | 0.99 | | | 0.98 | 1.00 | | 1.00 | | 0.99 | 1.00 | |
| Frt | | 0.96 | | | 1.00 | 0.85 | | 0.99 | | 1.00 | 0.98 | |
| Flt Protected | | 0.99 | | | 0.98 | 1.00 | | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 1637 | | | 1492 | 1197 | | 2859 | | 1588 | 1525 | |
| Flt Permitted | | 0.92 | | | 0.62 | 1.00 | | 0.64 | | 0.33 | 1.00 | |
| Satd. Flow (perm) | | 1514 | | | 946 | 1197 | | 1840 | | 548 | 1525 | |
| Peak-hour factor, PHF | 0.86 | 0.86 | 0.86 | 0.85 | 0.85 | 0.85 | 0.88 | 0.88 | 0.88 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 50 | 128 | 72 | 38 | 58 | 240 | 30 | 640 | 39 | 370 | 894 | 166 |
| RTOR Reduction (vph) | 0 | 13 | 0 | 0 | 0 | 200 | 0 | 4 | 0 | 0 | 6 | 0 |
| Lane Group Flow (vph) | 0 | 237 | 0 | 0 | 96 | 40 | 0 | 705 | 0 | 370 | 1054 | 0 |
| Confl. Peds. (#/hr) | 29 | | 36 | 36 | | 29 | 134 | | 51 | 51 | | 134 |
| Confl. Bikes (#/hr) | | | 12 | | | 1 | | | | | | 19 |
| Heavy Vehicles (%) | 13% | 1% | 2% | 0% | 5% | 6% | 0% | 0% | 5% | 1% | 2% | 4% |
| Turn Type | Perm | NA | | Perm | NA | Perm | Perm | NA | | D.P+P | NA | |
| Protected Phases | | 3 | | | 3 | | | 1 | | 4 | 1 4 | |
| Permitted Phases | 3 | | | 3 | | 3 | 1 | | | 1 | | |
| Actuated Green, G (s) | | 18.0 | | | 18.0 | 18.0 | | 60.0 | | 78.0 | 82.0 | |
| Effective Green, g (s) | | 18.0 | | | 18.0 | 18.0 | | 60.0 | | 78.0 | 82.0 | |
| Actuated g/C Ratio | | 0.17 | | | 0.17 | 0.17 | | 0.56 | | 0.72 | 0.76 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | 4.0 | | 4.0 | | 4.0 | | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | 3.0 | | 3.0 | | 2.0 | | |
| Lane Grp Cap (vph) | | 252 | | | 157 | 199 | | 1022 | | 569 | 1157 | |
| v/s Ratio Prot | | | | | | | | | | 0.11 | c0.69 | |
| v/s Ratio Perm | | c0.16 | | | 0.10 | 0.03 | | 0.38 | | 0.36 | | |
| v/c Ratio | | 0.94 | | | 0.61 | 0.20 | | 0.69 | | 0.65 | 0.91 | |
| Uniform Delay, d1 | | 44.5 | | | 41.8 | 38.8 | | 17.3 | | 6.2 | 10.1 | |
| Progression Factor | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 42.9 | | | 16.5 | 2.3 | | 3.8 | | 2.0 | 10.5 | |
| Delay (s) | | 87.4 | | | 58.2 | 41.1 | | 21.1 | | 8.3 | 20.7 | |
| Level of Service | | F | | | E | D | | C | | A | C | |
| Approach Delay (s) | | 87.4 | | | 46.0 | | | 21.1 | | | 17.5 | |
| Approach LOS | | F | | | D | | | C | | | B | |

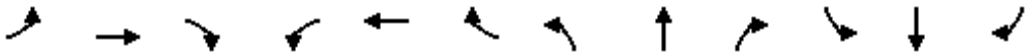
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 28.3 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.95 | | |
| Actuated Cycle Length (s) | 108.0 | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 108.6% | ICU Level of Service | G |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 10 | 0 | 10 | 16 | 0 | 5 | 21 | 612 | 10 | 21 | 852 | 26 |
| Future Volume (vph) | 10 | 0 | 10 | 16 | 0 | 5 | 21 | 612 | 10 | 21 | 852 | 26 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 16 | 12 | 12 | 16 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.932 | | | 0.968 | | | 0.998 | | | 0.996 | |
| Flt Protected | | 0.976 | | | 0.963 | | | 0.998 | | | 0.999 | |
| Satd. Flow (prot) | 0 | 1452 | 0 | 0 | 1488 | 0 | 0 | 1912 | 0 | 0 | 1890 | 0 |
| Flt Permitted | | 0.976 | | | 0.963 | | | 0.998 | | | 0.999 | |
| Satd. Flow (perm) | 0 | 1452 | 0 | 0 | 1488 | 0 | 0 | 1912 | 0 | 0 | 1890 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 429 | | | 453 | | | 298 | | | 340 | |
| Travel Time (s) | | 9.8 | | | 10.3 | | | 6.8 | | | 7.7 | |
| Confl. Peds. (#/hr) | 33 | | 15 | 15 | | 33 | 131 | | 44 | 44 | | 131 |
| Confl. Bikes (#/hr) | | | 1 | | | | | | 1 | | | 18 |
| Peak Hour Factor | 0.50 | 0.50 | 0.50 | 0.86 | 0.86 | 0.86 | 0.89 | 0.89 | 0.89 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% | 0% | 0% | 2% | 4% |
| Adj. Flow (vph) | 20 | 0 | 20 | 19 | 0 | 6 | 24 | 688 | 11 | 23 | 926 | 28 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 40 | 0 | 0 | 25 | 0 | 0 | 723 | 0 | 0 | 977 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.25 | 1.14 | 1.14 | 1.25 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 0.97 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 78.1% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |

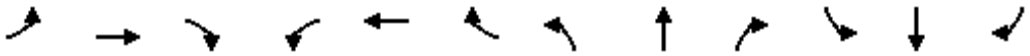


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 10 | 0 | 10 | 16 | 0 | 5 | 21 | 612 | 10 | 21 | 852 | 26 |
| Future Volume (Veh/h) | 10 | 0 | 10 | 16 | 0 | 5 | 21 | 612 | 10 | 21 | 852 | 26 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.50 | 0.50 | 0.50 | 0.86 | 0.86 | 0.86 | 0.89 | 0.89 | 0.89 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 20 | 0 | 20 | 19 | 0 | 6 | 24 | 688 | 11 | 23 | 926 | 28 |
| Pedestrians | | 131 | | | 44 | | | 15 | | | 33 | |
| Lane Width (ft) | | 10.0 | | | 10.0 | | | 16.0 | | | 16.0 | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Percent Blockage | | 9 | | | 3 | | | 2 | | | 4 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | 602 | | | 340 | |
| pX, platoon unblocked | 0.55 | 0.55 | 0.47 | 0.55 | 0.55 | 0.82 | 0.47 | | | 0.82 | | |
| vC, conflicting volume | 1898 | 1908 | 1086 | 1806 | 1916 | 770 | 1085 | | | 743 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1500 | 1519 | 610 | 1335 | 1534 | 614 | 608 | | | 581 | | |
| tC, single (s) | *4.0 | 6.5 | *4.0 | *4.0 | 6.5 | *4.0 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 87 | 100 | 93 | 89 | 100 | 99 | 94 | | | 97 | | |
| cM capacity (veh/h) | 151 | 54 | 301 | 175 | 52 | 554 | 415 | | | 801 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 40 | 25 | 723 | 977 |
| Volume Left | 20 | 19 | 24 | 23 |
| Volume Right | 20 | 6 | 11 | 28 |
| cSH | 201 | 209 | 415 | 801 |
| Volume to Capacity | 0.20 | 0.12 | 0.06 | 0.03 |
| Queue Length 95th (ft) | 18 | 10 | 5 | 2 |
| Control Delay (s) | 27.3 | 24.5 | 1.8 | 0.8 |
| Lane LOS | D | C | A | A |
| Approach Delay (s) | 27.3 | 24.5 | 1.8 | 0.8 |
| Approach LOS | D | C | | |

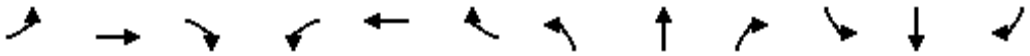
| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 2.2 | | | |
| Intersection Capacity Utilization | 78.1% | ICU Level of Service | D | |
| Analysis Period (min) | 15 | | | |

* User Entered Value



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 21 | 10 | 16 | 0 | 10 | 16 | 10 | 602 | 10 | 16 | 841 | 21 |
| Future Volume (vph) | 21 | 10 | 16 | 0 | 10 | 16 | 10 | 602 | 10 | 16 | 841 | 21 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 16 | 12 | 12 | 16 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.954 | | | 0.918 | | | 0.998 | | | 0.997 | |
| Flt Protected | | 0.978 | | | | | | 0.999 | | | 0.999 | |
| Satd. Flow (prot) | 0 | 1340 | 0 | 0 | 1319 | 0 | 0 | 1910 | 0 | 0 | 1894 | 0 |
| Flt Permitted | | 0.978 | | | | | | 0.999 | | | 0.999 | |
| Satd. Flow (perm) | 0 | 1340 | 0 | 0 | 1319 | 0 | 0 | 1910 | 0 | 0 | 1894 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 638 | | | 716 | | | 304 | | | 298 | |
| Travel Time (s) | | 14.5 | | | 16.3 | | | 6.9 | | | 6.8 | |
| Confl. Peds. (#/hr) | 23 | | 27 | 27 | | 23 | 117 | | 70 | 70 | | 117 |
| Confl. Bikes (#/hr) | | | | | | | | | 1 | | | 15 |
| Peak Hour Factor | 0.67 | 0.67 | 0.67 | 0.63 | 0.63 | 0.63 | 0.86 | 0.86 | 0.86 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% | 13% | 0% | 2% | 0% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | | | | | |
| Adj. Flow (vph) | 31 | 15 | 24 | 0 | 16 | 25 | 12 | 700 | 12 | 17 | 885 | 22 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 70 | 0 | 0 | 41 | 0 | 0 | 724 | 0 | 0 | 924 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 0.97 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 79.3% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 21 | 10 | 16 | 0 | 10 | 16 | 10 | 602 | 10 | 16 | 841 | 21 |
| Future Volume (Veh/h) | 21 | 10 | 16 | 0 | 10 | 16 | 10 | 602 | 10 | 16 | 841 | 21 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.67 | 0.67 | 0.67 | 0.63 | 0.63 | 0.63 | 0.86 | 0.86 | 0.86 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 31 | 15 | 24 | 0 | 16 | 25 | 12 | 700 | 12 | 17 | 885 | 22 |
| Pedestrians | | 117 | | | 70 | | | 27 | | | 23 | |
| Lane Width (ft) | | 10.0 | | | 10.0 | | | 16.0 | | | 16.0 | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Percent Blockage | | 8 | | | 5 | | | 3 | | | 3 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | 304 | | | 638 | |
| pX, platoon unblocked | 0.61 | 0.61 | 0.52 | 0.61 | 0.61 | 0.83 | 0.52 | | | 0.83 | | |
| vC, conflicting volume | 1833 | 1853 | 1040 | 1788 | 1858 | 799 | 1024 | | | 782 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1412 | 1445 | 618 | 1339 | 1453 | 654 | 588 | | | 633 | | |
| tC, single (s) | *4.0 | *4.0 | *4.0 | 7.1 | *4.0 | *4.0 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 81 | 92 | 93 | 100 | 91 | 95 | 97 | | | 98 | | |
| cM capacity (veh/h) | 166 | 184 | 334 | 56 | 183 | 539 | 478 | | | 756 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 70 | 41 | 724 | 924 |
| Volume Left | 31 | 0 | 12 | 17 |
| Volume Right | 24 | 25 | 12 | 22 |
| cSH | 206 | 306 | 478 | 756 |
| Volume to Capacity | 0.34 | 0.13 | 0.03 | 0.02 |
| Queue Length 95th (ft) | 36 | 11 | 2 | 2 |
| Control Delay (s) | 31.2 | 18.6 | 0.8 | 0.6 |
| Lane LOS | D | C | A | A |
| Approach Delay (s) | 31.2 | 18.6 | 0.8 | 0.6 |
| Approach LOS | D | C | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 2.3 | | | |
| Intersection Capacity Utilization | 79.3% | ICU Level of Service | D | |
| Analysis Period (min) | 15 | | | |

* User Entered Value

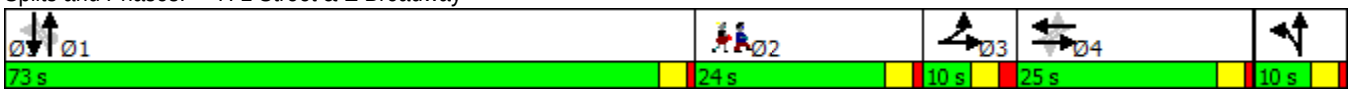
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 52 | 140 | 52 | 10 | 150 | 42 | 78 | 518 | 26 | 69 | 583 | 200 |
| Future Volume (vph) | 52 | 140 | 52 | 10 | 150 | 42 | 78 | 518 | 26 | 69 | 583 | 200 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 11 | 12 | 12 | 16 | 12 | 10 | 10 | 10 | 10 | 10 | 10 |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 0 | | 250 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 0 | | 1 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 0.95 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Ped Bike Factor | | 0.93 | | | 0.94 | | | 1.00 | | | 0.97 | |
| Frt | | 0.968 | | | 0.972 | | | 0.994 | | | 0.965 | |
| Flt Protected | | 0.989 | | | 0.998 | | | 0.994 | | | 0.996 | |
| Satd. Flow (prot) | 0 | 2550 | 0 | 0 | 1544 | 0 | 0 | 2837 | 0 | 0 | 2665 | 0 |
| Flt Permitted | | 0.577 | | | 0.977 | | | 0.637 | | | 0.771 | |
| Satd. Flow (perm) | 0 | 1463 | 0 | 0 | 1496 | 0 | 0 | 1814 | 0 | 0 | 2061 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 642 | | | 187 | | | 618 | | | 304 | |
| Travel Time (s) | | 14.6 | | | 4.3 | | | 14.0 | | | 6.9 | |
| Confl. Peds. (#/hr) | 61 | | 89 | 89 | | 61 | 154 | | 61 | 61 | | 154 |
| Confl. Bikes (#/hr) | | | 7 | | | 1 | | | 1 | | | 6 |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.88 | 0.88 | 0.88 | 0.86 | 0.86 | 0.86 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 2% | 9% | 0% | 0% | 6% | 0% | 0% | 0% | 3% | 13% | 0% | 1% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Adj. Flow (vph) | 58 | 157 | 58 | 11 | 170 | 48 | 91 | 602 | 30 | 74 | 627 | 215 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 273 | 0 | 0 | 229 | 0 | 0 | 723 | 0 | 0 | 916 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.27 | 1.14 | 1.14 | 1.12 | 1.14 | 1.25 | 1.33 | 1.25 | 1.25 | 1.33 | 1.25 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |

| Lane Group | Ø2 |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | |
| Future Volume (vph) | |
| Ideal Flow (vphpl) | |
| Lane Width (ft) | |
| Storage Length (ft) | |
| Storage Lanes | |
| Taper Length (ft) | |
| Lane Util. Factor | |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Right Turn on Red | |
| Satd. Flow (RTOR) | |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | |
| Heavy Vehicles (%) | |
| Parking (#/hr) | |
| Adj. Flow (vph) | |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | |
| Enter Blocked Intersection | |
| Lane Alignment | |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | |
| Turning Speed (mph) | |
| Number of Detectors | |
| Detector Template | |
| Leading Detector (ft) | |
| Trailing Detector (ft) | |
| Detector 1 Position(ft) | |
| Detector 1 Size(ft) | |
| Detector 1 Type | |
| Detector 1 Channel | |
| Detector 1 Extend (s) | |
| Detector 1 Queue (s) | |
| Detector 1 Delay (s) | |
| Detector 2 Position(ft) | |
| Detector 2 Size(ft) | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | D.P+P | NA | | Perm | NA | | D.P+P | NA | | Perm | NA | |
| Protected Phases | 3 | 3 4 | | | 4 | | 5 | 1 5 | | | 1 | |
| Permitted Phases | 4 | | | 4 | | | 1 | | | 1 | | |
| Detector Phase | 3 | 3 4 | | 4 | 4 | | 5 | 1 5 | | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | | | 10.0 | 10.0 | | 6.0 | | | 30.0 | 30.0 | |
| Minimum Split (s) | 10.0 | | | 14.0 | 14.0 | | 10.0 | | | 34.0 | 34.0 | |
| Total Split (s) | 10.0 | | | 25.0 | 25.0 | | 10.0 | | | 73.0 | 73.0 | |
| Total Split (%) | 7.0% | | | 17.6% | 17.6% | | 7.0% | | | 51.4% | 51.4% | |
| Maximum Green (s) | 5.0 | | | 21.0 | 21.0 | | 6.0 | | | 69.0 | 69.0 | |
| Yellow Time (s) | 3.0 | | | 3.0 | 3.0 | | 3.0 | | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | | | 1.0 | 1.0 | | 1.0 | | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | | | | | 0.0 | | | | | | 0.0 | |
| Total Lost Time (s) | | | | | 4.0 | | | | | | 4.0 | |
| Lead/Lag | Lead | | | Lag | Lag | | | | | Lead | Lead | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | | | 2.0 | 2.0 | | 2.0 | | | 2.0 | 2.0 | |
| Recall Mode | Max | | | Max | Max | | Max | | | Max | Max | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 25.1 | | | 21.1 | | | 75.4 | | | 69.4 | |
| Actuated g/C Ratio | | 0.18 | | | 0.15 | | | 0.55 | | | 0.51 | |
| v/c Ratio | | 0.89 | | | 1.00 | | | 0.69 | | | 0.88 | |
| Control Delay | | 82.3 | | | 116.6 | | | 26.2 | | | 42.9 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 82.3 | | | 116.6 | | | 26.2 | | | 42.9 | |
| LOS | | F | | | F | | | C | | | D | |
| Approach Delay | | 82.3 | | | 116.6 | | | 26.2 | | | 42.9 | |
| Approach LOS | | F | | | F | | | C | | | D | |

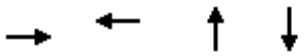
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 142 | | | |
| Actuated Cycle Length: 137.2 | | | |
| Natural Cycle: 125 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 1.00 | | | |
| Intersection Signal Delay: 50.2 | | Intersection LOS: D | |
| Intersection Capacity Utilization 90.3% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 7: L Street & E Broadway



| Lane Group | Ø2 |
|---|---|
| Detector 2 Type | |
| Detector 2 Channel | |
| Detector 2 Extend (s) | |
| Turn Type | |
| Protected Phases | 2 |
| Permitted Phases | |
| Detector Phase | |
| Switch Phase | |
| Minimum Initial (s) | 4.0 |
| Minimum Split (s) | 24.0 |
| Total Split (s) | 24.0 |
| Total Split (%) | 17% |
| Maximum Green (s) | 20.0 |
| Yellow Time (s) | 3.0 |
| All-Red Time (s) | 1.0 |
| Lost Time Adjust (s) | |
| Total Lost Time (s) | |
| Lead/Lag | Lag |
| Lead-Lag Optimize? | |
| Vehicle Extension (s) | 2.0 |
| Recall Mode | None |
| Walk Time (s) | 8.0 |
| Flash Dont Walk (s) | 12.0 |
| Pedestrian Calls (#/hr) | 46 |
| Act Effct Green (s) | |
| Actuated g/C Ratio | |
| v/c Ratio | |
| Control Delay | |
| Queue Delay | |
| Total Delay | |
| LOS | |
| Approach Delay | |
| Approach LOS | |

| Intersection Summary |
|---|

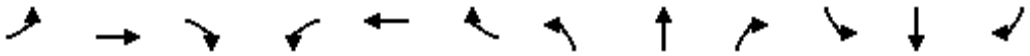


| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 273 | 229 | 723 | 916 |
| v/c Ratio | 0.89 | 1.00 | 0.69 | 0.88 |
| Control Delay | 82.3 | 116.6 | 26.2 | 42.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 82.3 | 116.6 | 26.2 | 42.9 |
| Queue Length 50th (ft) | 118 | ~227 | 202 | 404 |
| Queue Length 95th (ft) | #204 | #386 | 237 | #554 |
| Internal Link Dist (ft) | 562 | 107 | 538 | 224 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 307 | 230 | 1042 | 1042 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.89 | 1.00 | 0.69 | 0.88 |

Intersection Summary

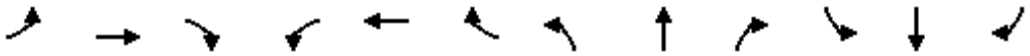
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



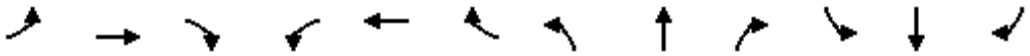
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 52 | 140 | 52 | 10 | 150 | 42 | 78 | 518 | 26 | 69 | 583 | 200 |
| Future Volume (vph) | 52 | 140 | 52 | 10 | 150 | 42 | 78 | 518 | 26 | 69 | 583 | 200 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 11 | 12 | 12 | 16 | 12 | 10 | 10 | 10 | 10 | 10 | 10 |
| Total Lost time (s) | | 5.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 0.95 | | | 1.00 | | | 0.95 | | | 0.95 | |
| Frpb, ped/bikes | | 0.94 | | | 0.95 | | | 1.00 | | | 0.98 | |
| Flpb, ped/bikes | | 0.99 | | | 0.99 | | | 1.00 | | | 1.00 | |
| Frt | | 0.97 | | | 0.97 | | | 0.99 | | | 0.96 | |
| Flt Protected | | 0.99 | | | 1.00 | | | 0.99 | | | 1.00 | |
| Satd. Flow (prot) | | 2533 | | | 1530 | | | 2832 | | | 2664 | |
| Flt Permitted | | 0.58 | | | 0.98 | | | 0.64 | | | 0.77 | |
| Satd. Flow (perm) | | 1478 | | | 1498 | | | 1815 | | | 2062 | |
| Peak-hour factor, PHF | 0.89 | 0.89 | 0.89 | 0.88 | 0.88 | 0.88 | 0.86 | 0.86 | 0.86 | 0.93 | 0.93 | 0.93 |
| Adj. Flow (vph) | 58 | 157 | 58 | 11 | 170 | 48 | 91 | 602 | 30 | 74 | 627 | 215 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 273 | 0 | 0 | 229 | 0 | 0 | 723 | 0 | 0 | 916 | 0 |
| Confl. Peds. (#/hr) | 61 | | 89 | 89 | | 61 | 154 | | 61 | 61 | | 154 |
| Confl. Bikes (#/hr) | | | 7 | | | 1 | | | 1 | | | 6 |
| Heavy Vehicles (%) | 2% | 9% | 0% | 0% | 6% | 0% | 0% | 0% | 3% | 13% | 0% | 1% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Turn Type | D.P+P | NA | | Perm | NA | | D.P+P | NA | | Perm | NA | |
| Protected Phases | 3 | 3 4 | | | 4 | | 5 | 1 5 | | | 1 | |
| Permitted Phases | 4 | | | 4 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 26.1 | | | 21.1 | | | 75.4 | | | 69.4 | |
| Effective Green, g (s) | | 26.1 | | | 21.1 | | | 75.4 | | | 69.4 | |
| Actuated g/C Ratio | | 0.19 | | | 0.15 | | | 0.55 | | | 0.50 | |
| Clearance Time (s) | | | | | 4.0 | | | | | | 4.0 | |
| Vehicle Extension (s) | | | | | 2.0 | | | | | | 2.0 | |
| Lane Grp Cap (vph) | | 317 | | | 229 | | | 1035 | | | 1036 | |
| v/s Ratio Prot | | c0.03 | | | | | | c0.03 | | | | |
| v/s Ratio Perm | | 0.13 | | | c0.15 | | | 0.35 | | | c0.44 | |
| v/c Ratio | | 0.86 | | | 1.00 | | | 0.70 | | | 0.88 | |
| Uniform Delay, d1 | | 54.2 | | | 58.5 | | | 23.0 | | | 30.7 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 25.1 | | | 59.5 | | | 3.9 | | | 11.0 | |
| Delay (s) | | 79.3 | | | 117.9 | | | 26.9 | | | 41.7 | |
| Level of Service | | E | | | F | | | C | | | D | |
| Approach Delay (s) | | 79.3 | | | 117.9 | | | 26.9 | | | 41.7 | |
| Approach LOS | | E | | | F | | | C | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 49.6 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.78 | | |
| Actuated Cycle Length (s) | 138.0 | Sum of lost time (s) | 21.0 |
| Intersection Capacity Utilization | 90.3% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 21 | 210 | 0 | 0 | 220 | 5 | 47 | 10 | 16 | 5 | 0 | 52 |
| Future Volume (vph) | 21 | 210 | 0 | 0 | 220 | 5 | 47 | 10 | 16 | 5 | 0 | 52 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 13 | 12 | 10 | 10 | 12 | 12 | 16 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | | | 0.997 | | | 0.906 | | | 0.877 | |
| Flt Protected | | 0.995 | | | | | 0.950 | | | | 0.996 | |
| Satd. Flow (prot) | 0 | 1462 | 0 | 0 | 1555 | 0 | 1338 | 1241 | 0 | 0 | 1496 | 0 |
| Flt Permitted | | 0.995 | | | | | 0.950 | | | | 0.996 | |
| Satd. Flow (perm) | 0 | 1462 | 0 | 0 | 1555 | 0 | 1338 | 1241 | 0 | 0 | 1496 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 1822 | | | 540 | | | 382 | | | 354 | |
| Travel Time (s) | | 41.4 | | | 12.3 | | | 8.7 | | | 8.0 | |
| Confl. Peds. (#/hr) | 8 | | 18 | 18 | | 8 | 13 | | 28 | 28 | | 13 |
| Confl. Bikes (#/hr) | | | 5 | | | 2 | | | 1 | | | |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.88 | 0.88 | 0.88 | 0.81 | 0.81 | 0.81 | 0.70 | 0.70 | 0.70 |
| Heavy Vehicles (%) | 32% | 2% | 0% | 0% | 2% | 0% | 2% | 13% | 0% | 0% | 0% | 2% |
| Parking (#/hr) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Adj. Flow (vph) | 25 | 247 | 0 | 0 | 250 | 6 | 58 | 12 | 20 | 7 | 0 | 74 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 272 | 0 | 0 | 256 | 0 | 58 | 32 | 0 | 0 | 81 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 10 | | | 10 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.30 | 1.14 | 1.14 | 1.25 | 1.14 | 1.42 | 1.42 | 1.14 | 1.14 | 1.12 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 48.7% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

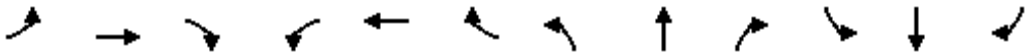


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 21 | 210 | 0 | 0 | 220 | 5 | 47 | 10 | 16 | 5 | 0 | 52 |
| Future Volume (Veh/h) | 21 | 210 | 0 | 0 | 220 | 5 | 47 | 10 | 16 | 5 | 0 | 52 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.88 | 0.88 | 0.88 | 0.81 | 0.81 | 0.81 | 0.70 | 0.70 | 0.70 |
| Hourly flow rate (vph) | 25 | 247 | 0 | 0 | 250 | 6 | 58 | 12 | 20 | 7 | 0 | 74 |
| Pedestrians | | 13 | | | 28 | | | 18 | | | 8 | |
| Lane Width (ft) | | 12.0 | | | 13.0 | | | 10.0 | | | 16.0 | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Percent Blockage | | 1 | | | 3 | | | 1 | | | 1 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 540 | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 264 | | | 265 | | | 655 | 579 | 293 | 612 | 576 | 274 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 264 | | | 265 | | | 655 | 579 | 293 | 612 | 576 | 274 |
| tC, single (s) | 4.4 | | | 4.1 | | | *6.5 | 6.6 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.5 | | | 2.2 | | | 3.5 | 4.1 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 100 | | | 84 | 97 | 97 | 98 | 100 | 90 |
| cM capacity (veh/h) | 1135 | | | 1294 | | | 362 | 394 | 723 | 362 | 412 | 750 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | SB 1 |
|---|---|---|---|---|---|
| Volume Total | 272 | 256 | 58 | 32 | 81 |
| Volume Left | 25 | 0 | 58 | 0 | 7 |
| Volume Right | 0 | 6 | 0 | 20 | 74 |
| cSH | 1135 | 1700 | 362 | 551 | 686 |
| Volume to Capacity | 0.02 | 0.15 | 0.16 | 0.06 | 0.12 |
| Queue Length 95th (ft) | 2 | 0 | 14 | 5 | 10 |
| Control Delay (s) | 1.0 | 0.0 | 16.8 | 11.9 | 10.9 |
| Lane LOS | A | | C | B | B |
| Approach Delay (s) | 1.0 | 0.0 | 15.1 | | 10.9 |
| Approach LOS | | | C | | B |

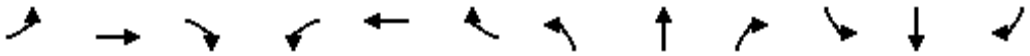
| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 3.6 | | | |
| Intersection Capacity Utilization | 48.7% | ICU Level of Service | | A |
| Analysis Period (min) | 15 | | | |

* User Entered Value



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 67 | 410 | 0 | 0 | 189 | 0 | 33 | 0 | 21 | 0 | 0 | 65 |
| Future Volume (vph) | 67 | 410 | 0 | 0 | 189 | 0 | 33 | 0 | 21 | 0 | 0 | 65 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 13 | 12 | 12 | 13 | 12 | 10 | 12 | 12 | 12 | 12 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | | | | | | 0.948 | | | 0.865 | |
| Flt Protected | | 0.993 | | | | | | 0.970 | | | | |
| Satd. Flow (prot) | 0 | 1740 | 0 | 0 | 1667 | 0 | 0 | 1544 | 0 | 0 | 1479 | 0 |
| Flt Permitted | | 0.993 | | | | | | 0.970 | | | | |
| Satd. Flow (perm) | 0 | 1740 | 0 | 0 | 1667 | 0 | 0 | 1544 | 0 | 0 | 1479 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 576 | | | 561 | | | 457 | | | 244 | |
| Travel Time (s) | | 13.1 | | | 12.8 | | | 10.4 | | | 5.5 | |
| Confl. Peds. (#/hr) | | | 13 | 13 | | | 134 | | 51 | | | |
| Confl. Bikes (#/hr) | | | 17 | | | | | | 2 | | | |
| Peak Hour Factor | 0.92 | 0.85 | 0.85 | 0.88 | 0.88 | 0.92 | 0.81 | 0.92 | 0.81 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 0% | 1% | 0% | 0% | 6% | 0% | 3% | 0% | 0% | 0% | 0% | 0% |
| Adj. Flow (vph) | 73 | 482 | 0 | 0 | 215 | 0 | 41 | 0 | 26 | 0 | 0 | 71 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 555 | 0 | 0 | 215 | 0 | 0 | 67 | 0 | 0 | 71 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.10 | 1.14 | 1.14 | 1.10 | 1.14 | 1.25 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |

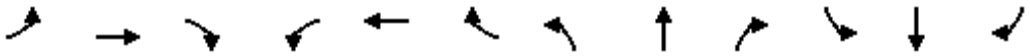
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 62.2% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 67 | 410 | 0 | 0 | 189 | 0 | 33 | 0 | 21 | 0 | 0 | 65 |
| Future Volume (Veh/h) | 67 | 410 | 0 | 0 | 189 | 0 | 33 | 0 | 21 | 0 | 0 | 65 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.92 | 0.85 | 0.85 | 0.88 | 0.88 | 0.92 | 0.81 | 0.92 | 0.81 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 73 | 482 | 0 | 0 | 215 | 0 | 41 | 0 | 26 | 0 | 0 | 71 |
| Pedestrians | | 134 | | | 51 | | | 13 | | | | |
| Lane Width (ft) | | 13.0 | | | 13.0 | | | 12.0 | | | | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | | |
| Percent Blockage | | 12 | | | 5 | | | 1 | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 576 | | | | | | | | | | |
| pX, platoon unblocked | | | | 0.88 | | | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | |
| vC, conflicting volume | 215 | | | 495 | | | 1061 | 856 | 546 | 920 | 856 | 349 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 215 | | | 359 | | | 1001 | 769 | 417 | 841 | 769 | 349 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 95 | | | 100 | | | 71 | 100 | 95 | 100 | 100 | 88 |
| cM capacity (veh/h) | 1367 | | | 1055 | | | 142 | 275 | 532 | 218 | 275 | 614 |

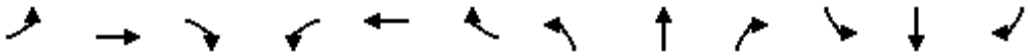
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 555 | 215 | 67 | 71 |
| Volume Left | 73 | 0 | 41 | 0 |
| Volume Right | 0 | 0 | 26 | 71 |
| cSH | 1367 | 1700 | 198 | 614 |
| Volume to Capacity | 0.05 | 0.13 | 0.34 | 0.12 |
| Queue Length 95th (ft) | 4 | 0 | 35 | 10 |
| Control Delay (s) | 1.5 | 0.0 | 32.1 | 11.6 |
| Lane LOS | A | | D | B |
| Approach Delay (s) | 1.5 | 0.0 | 32.1 | 11.6 |
| Approach LOS | | | D | B |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 4.2 | | | |
| Intersection Capacity Utilization | 62.2% | ICU Level of Service | B | |
| Analysis Period (min) | 15 | | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 26 | 392 | 0 | 0 | 183 | 85 | 36 | 37 | 18 | 367 | 0 | 66 |
| Future Volume (vph) | 26 | 392 | 0 | 0 | 183 | 85 | 36 | 37 | 18 | 367 | 0 | 66 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 15 | 12 | 12 | 16 | 12 | 12 | 16 | 12 | 12 | 14 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | | | 0.957 | | | 0.973 | | | 0.979 | |
| Flt Protected | | 0.997 | | | | | | 0.981 | | | 0.959 | |
| Satd. Flow (prot) | 0 | 1630 | 0 | 0 | 1801 | 0 | 0 | 1764 | 0 | 0 | 1705 | 0 |
| Flt Permitted | | 0.997 | | | | | | 0.981 | | | 0.959 | |
| Satd. Flow (perm) | 0 | 1630 | 0 | 0 | 1801 | 0 | 0 | 1764 | 0 | 0 | 1705 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 848 | | | 1822 | | | 402 | | | 2052 | |
| Travel Time (s) | | 19.3 | | | 41.4 | | | 9.1 | | | 46.6 | |
| Confl. Peds. (#/hr) | 4 | | | 5 | | 4 | 1 | | 24 | 24 | | 1 |
| Confl. Bikes (#/hr) | | | 5 | | | 1 | | | 1 | | | 5 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.93 | 0.93 | 0.93 | 0.87 | 0.87 | 0.87 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 12% | 3% | 0% | 0% | 3% | 3% | 3% | 9% | 0% | 0% | 0% | 3% |
| Parking (#/hr) | | 0 | 0 | | | | | | | | | |
| Adj. Flow (vph) | 30 | 445 | 0 | 0 | 197 | 91 | 41 | 43 | 21 | 395 | 0 | 71 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 475 | 0 | 0 | 288 | 0 | 0 | 105 | 0 | 0 | 466 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.16 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 1.05 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 84.9% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 26 | 392 | 0 | 0 | 183 | 85 | 36 | 37 | 18 | 367 | 0 | 66 |
| Future Volume (Veh/h) | 26 | 392 | 0 | 0 | 183 | 85 | 36 | 37 | 18 | 367 | 0 | 66 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.93 | 0.93 | 0.93 | 0.87 | 0.87 | 0.87 | 0.93 | 0.93 | 0.93 |
| Hourly flow rate (vph) | 30 | 445 | 0 | 0 | 197 | 91 | 41 | 43 | 21 | 395 | 0 | 71 |
| Pedestrians | | 1 | | | 24 | | | 5 | | | 4 | |
| Lane Width (ft) | | 15.0 | | | 16.0 | | | 16.0 | | | 14.0 | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Percent Blockage | | 0 | | | 3 | | | 1 | | | 0 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 292 | | | 450 | | | 824 | 802 | 474 | 818 | 756 | 248 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 292 | | | 450 | | | 824 | 802 | 474 | 818 | 756 | 248 |
| tC, single (s) | 4.2 | | | 4.1 | | | 7.1 | 6.6 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.3 | | | 2.2 | | | 3.5 | 4.1 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 100 | | | 84 | 86 | 96 | 0 | 100 | 91 |
| cM capacity (veh/h) | 1210 | | | 1115 | | | 256 | 299 | 575 | 241 | 328 | 785 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 475 | 288 | 105 | 466 |
| Volume Left | 30 | 0 | 41 | 395 |
| Volume Right | 0 | 91 | 21 | 71 |
| cSH | 1210 | 1115 | 308 | 269 |
| Volume to Capacity | 0.02 | 0.00 | 0.34 | 1.73 |
| Queue Length 95th (ft) | 2 | 0 | 37 | 759 |
| Control Delay (s) | 0.8 | 0.0 | 22.6 | 376.8 |
| Lane LOS | A | | C | F |
| Approach Delay (s) | 0.8 | 0.0 | 22.6 | 376.8 |
| Approach LOS | | | C | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 133.7 | | |
| Intersection Capacity Utilization | 84.9% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 16 | 21 | 0 | 5 | 21 | 42 | 21 | 564 | 16 | 21 | 567 | 16 |
| Future Volume (vph) | 16 | 21 | 0 | 5 | 21 | 42 | 21 | 564 | 16 | 21 | 567 | 16 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | 0.97 | | | 0.91 | | | 1.00 | | | 0.99 | |
| Frt | | | | | 0.917 | | | 0.996 | | | 0.996 | |
| Flt Protected | | 0.979 | | | 0.996 | | | 0.998 | | | 0.998 | |
| Satd. Flow (prot) | 0 | 1406 | 0 | 0 | 1200 | 0 | 0 | 1408 | 0 | 0 | 1408 | 0 |
| Flt Permitted | | 0.864 | | | 0.981 | | | 0.972 | | | 0.972 | |
| Satd. Flow (perm) | 0 | 1201 | 0 | 0 | 1173 | 0 | 0 | 1369 | 0 | 0 | 1371 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | 66 | | | 2 | | | 2 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 659 | | | 649 | | | 380 | | | 618 | |
| Travel Time (s) | | 15.0 | | | 14.8 | | | 8.6 | | | 14.0 | |
| Confl. Peds. (#/hr) | 33 | | 29 | 29 | | 33 | 143 | | 60 | 60 | | 143 |
| Confl. Bikes (#/hr) | | | | | | | | | 1 | | | 7 |
| Peak Hour Factor | 0.80 | 0.80 | 0.80 | 0.52 | 0.52 | 0.52 | 0.95 | 0.95 | 0.95 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% | 8% | 0% | 1% | 0% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Adj. Flow (vph) | 20 | 26 | 0 | 10 | 40 | 81 | 22 | 594 | 17 | 21 | 579 | 16 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 46 | 0 | 0 | 131 | 0 | 0 | 633 | 0 | 0 | 616 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |

| Lane Group | Ø2 |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | |
| Future Volume (vph) | |
| Ideal Flow (vphpl) | |
| Lane Width (ft) | |
| Lane Util. Factor | |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Right Turn on Red | |
| Satd. Flow (RTOR) | |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | |
| Heavy Vehicles (%) | |
| Parking (#/hr) | |
| Adj. Flow (vph) | |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | |
| Enter Blocked Intersection | |
| Lane Alignment | |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | |
| Turning Speed (mph) | |
| Number of Detectors | |
| Detector Template | |
| Leading Detector (ft) | |
| Trailing Detector (ft) | |
| Detector 1 Position(ft) | |
| Detector 1 Size(ft) | |
| Detector 1 Type | |
| Detector 1 Channel | |
| Detector 1 Extend (s) | |
| Detector 1 Queue (s) | |
| Detector 1 Delay (s) | |
| Detector 2 Position(ft) | |
| Detector 2 Size(ft) | |
| Detector 2 Type | |
| Detector 2 Channel | |
| Detector 2 Extend (s) | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Detector Phase | 5 | 5 | | 5 | 5 | | 1 | 1 | | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | |
| Minimum Split (s) | 12.0 | 12.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Total Split (s) | 18.0 | 18.0 | | 18.0 | 18.0 | | 54.0 | 54.0 | | 54.0 | 54.0 | |
| Total Split (%) | 17.6% | 17.6% | | 17.6% | 17.6% | | 52.9% | 52.9% | | 52.9% | 52.9% | |
| Maximum Green (s) | 14.0 | 14.0 | | 14.0 | 14.0 | | 50.0 | 50.0 | | 50.0 | 50.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Lost Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lead/Lag | | | | | | | Lead | Lead | | Lead | Lead | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | Max | Max | | Max | Max | | Max | Max | | Max | Max | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 14.3 | | | 14.3 | | | 51.0 | | | 51.0 | |
| Actuated g/C Ratio | | 0.15 | | | 0.15 | | | 0.53 | | | 0.53 | |
| v/c Ratio | | 0.26 | | | 0.57 | | | 0.87 | | | 0.84 | |
| Control Delay | | 43.9 | | | 32.9 | | | 37.7 | | | 35.3 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 43.9 | | | 32.9 | | | 37.7 | | | 35.3 | |
| LOS | | D | | | C | | | D | | | D | |
| Approach Delay | | 43.9 | | | 32.9 | | | 37.7 | | | 35.3 | |
| Approach LOS | | D | | | C | | | D | | | D | |

**Intersection Summary**

Area Type: CBD
Cycle Length: 102
Actuated Cycle Length: 96
Natural Cycle: 90
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 36.4 Intersection LOS: D
Intersection Capacity Utilization 58.0% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 11: L Street & E 5th Street



| Lane Group | Ø2 |
|---|---|
| Turn Type | |
| Protected Phases | 2 |
| Permitted Phases | |
| Detector Phase | |
| Switch Phase | |
| Minimum Initial (s) | 4.0 |
| Minimum Split (s) | 30.0 |
| Total Split (s) | 30.0 |
| Total Split (%) | 29% |
| Maximum Green (s) | 26.0 |
| Yellow Time (s) | 3.0 |
| All-Red Time (s) | 1.0 |
| Lost Time Adjust (s) | |
| Total Lost Time (s) | |
| Lead/Lag | Lag |
| Lead-Lag Optimize? | |
| Vehicle Extension (s) | 2.0 |
| Recall Mode | None |
| Walk Time (s) | 14.0 |
| Flash Dont Walk (s) | 12.0 |
| Pedestrian Calls (#/hr) | 66 |
| Act Effct Green (s) | |
| Actuated g/C Ratio | |
| v/c Ratio | |
| Control Delay | |
| Queue Delay | |
| Total Delay | |
| LOS | |
| Approach Delay | |
| Approach LOS | |

| Intersection Summary |
|---|

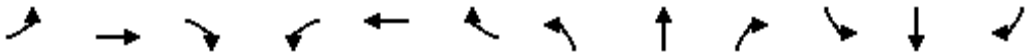
| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 46 | 131 | 633 | 616 |
| v/c Ratio | 0.26 | 0.57 | 0.87 | 0.84 |
| Control Delay | 43.9 | 32.9 | 37.7 | 35.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 43.9 | 32.9 | 37.7 | 35.3 |
| Queue Length 50th (ft) | 27 | 39 | 375 | 356 |
| Queue Length 95th (ft) | 55 | 36 | #622 | #596 |
| Internal Link Dist (ft) | 579 | 569 | 300 | 538 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 178 | 230 | 728 | 729 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.26 | 0.57 | 0.87 | 0.84 |

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 16 | 21 | 0 | 5 | 21 | 42 | 21 | 564 | 16 | 21 | 567 | 16 |
| Future Volume (vph) | 16 | 21 | 0 | 5 | 21 | 42 | 21 | 564 | 16 | 21 | 567 | 16 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Total Lost time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Frpb, ped/bikes | | 1.00 | | | 0.92 | | | 1.00 | | | 1.00 | |
| Flpb, ped/bikes | | 0.97 | | | 0.99 | | | 1.00 | | | 1.00 | |
| Frt | | 1.00 | | | 0.92 | | | 1.00 | | | 1.00 | |
| Flt Protected | | 0.98 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | | 1363 | | | 1198 | | | 1407 | | | 1409 | |
| Flt Permitted | | 0.86 | | | 0.98 | | | 0.97 | | | 0.97 | |
| Satd. Flow (perm) | | 1202 | | | 1179 | | | 1370 | | | 1372 | |
| Peak-hour factor, PHF | 0.80 | 0.80 | 0.80 | 0.52 | 0.52 | 0.52 | 0.95 | 0.95 | 0.95 | 0.98 | 0.98 | 0.98 |
| Adj. Flow (vph) | 20 | 26 | 0 | 10 | 40 | 81 | 22 | 594 | 17 | 21 | 579 | 16 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 56 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| Lane Group Flow (vph) | 0 | 46 | 0 | 0 | 75 | 0 | 0 | 632 | 0 | 0 | 615 | 0 |
| Confl. Peds. (#/hr) | 33 | | 29 | 29 | | 33 | 143 | | 60 | 60 | | 143 |
| Confl. Bikes (#/hr) | | | | | | | | | 1 | | | 7 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% | 8% | 0% | 1% | 0% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 14.3 | | | 14.3 | | | 51.0 | | | 51.0 | |
| Effective Green, g (s) | | 14.3 | | | 14.3 | | | 51.0 | | | 51.0 | |
| Actuated g/C Ratio | | 0.15 | | | 0.15 | | | 0.53 | | | 0.53 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | | | 2.0 | | | 2.0 | |
| Lane Grp Cap (vph) | | 177 | | | 173 | | | 721 | | | 722 | |
| v/s Ratio Prot | | | | | | | | | | | | |
| v/s Ratio Perm | | 0.04 | | | c0.06 | | | c0.46 | | | 0.45 | |
| v/c Ratio | | 0.26 | | | 0.43 | | | 0.88 | | | 0.85 | |
| Uniform Delay, d1 | | 36.6 | | | 37.6 | | | 20.2 | | | 19.7 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 3.5 | | | 7.7 | | | 14.1 | | | 12.1 | |
| Delay (s) | | 40.1 | | | 45.3 | | | 34.3 | | | 31.8 | |
| Level of Service | | D | | | D | | | C | | | C | |
| Approach Delay (s) | | 40.1 | | | 45.3 | | | 34.3 | | | 31.8 | |
| Approach LOS | | D | | | D | | | C | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 34.4 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.60 | | |
| Actuated Cycle Length (s) | 96.9 | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 58.0% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 21 | 26 | 16 | 5 | 16 | 10 | 16 | 512 | 16 | 21 | 468 | 27 |
| Future Volume (vph) | 21 | 26 | 16 | 5 | 16 | 10 | 16 | 512 | 16 | 21 | 468 | 27 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 16 | 12 | 12 | 15 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | 0.96 | | | 0.97 | | | 1.00 | | | 0.99 | |
| Frt | | 0.966 | | | 0.958 | | | 0.996 | | | 0.993 | |
| Flt Protected | | 0.984 | | | 0.992 | | | 0.999 | | | 0.998 | |
| Satd. Flow (prot) | 0 | 1488 | 0 | 0 | 1518 | 0 | 0 | 1584 | 0 | 0 | 1551 | 0 |
| Flt Permitted | | 0.921 | | | 0.968 | | | 0.981 | | | 0.969 | |
| Satd. Flow (perm) | 0 | 1377 | 0 | 0 | 1461 | 0 | 0 | 1553 | 0 | 0 | 1505 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 18 | | | 11 | | | 4 | | | 7 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 602 | | | 677 | | | 676 | | | 535 | |
| Travel Time (s) | | 13.7 | | | 15.4 | | | 15.4 | | | 12.2 | |
| Confl. Peds. (#/hr) | 15 | | 38 | 38 | | 15 | 58 | | 32 | 32 | | 58 |
| Confl. Bikes (#/hr) | | | | | | | | | 1 | | | 2 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.89 | 0.89 | 0.89 | 0.87 | 0.87 | 0.87 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 10% | 12% | 0% | 0% | 8% | 0% | 0% | 0% | 0% | 0% | 1% | 4% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | | | | | |
| Adj. Flow (vph) | 24 | 30 | 18 | 6 | 18 | 11 | 18 | 589 | 18 | 23 | 520 | 30 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 72 | 0 | 0 | 35 | 0 | 0 | 625 | 0 | 0 | 573 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.12 | 1.14 | 1.14 | 1.16 | 1.14 | 1.14 | 1.25 | 1.14 | 1.14 | 1.25 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Detector Phase | 5 | 5 | | 5 | 5 | | 1 | 1 | | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 6.0 | 6.0 | | 6.0 | 6.0 | | 20.0 | 20.0 | | 20.0 | 20.0 | |
| Minimum Split (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 24.0 | 24.0 | | 24.0 | 24.0 | |
| Total Split (s) | 24.0 | 24.0 | | 24.0 | 24.0 | | 54.0 | 54.0 | | 54.0 | 54.0 | |
| Total Split (%) | 30.8% | 30.8% | | 30.8% | 30.8% | | 69.2% | 69.2% | | 69.2% | 69.2% | |
| Maximum Green (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 50.0 | 50.0 | | 50.0 | 50.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Lost Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | Max | Max | | Max | Max | | Max | Max | | Max | Max | |
| Walk Time (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | |
| Flash Dont Walk (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | |
| Pedestrian Calls (#/hr) | 13 | 13 | | 13 | 13 | | 23 | 23 | | 23 | 23 | |
| Act Effct Green (s) | | 20.0 | | | 20.0 | | | 50.0 | | | 50.0 | |
| Actuated g/C Ratio | | 0.26 | | | 0.26 | | | 0.64 | | | 0.64 | |
| v/c Ratio | | 0.20 | | | 0.09 | | | 0.63 | | | 0.59 | |
| Control Delay | | 19.7 | | | 17.8 | | | 11.9 | | | 11.2 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 19.7 | | | 17.8 | | | 11.9 | | | 11.2 | |
| LOS | | B | | | B | | | B | | | B | |
| Approach Delay | | 19.7 | | | 17.8 | | | 11.9 | | | 11.2 | |
| Approach LOS | | B | | | B | | | B | | | B | |

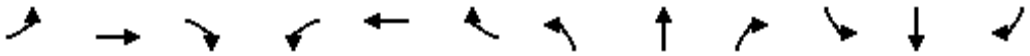
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 78 | | | |
| Actuated Cycle Length: 78 | | | |
| Natural Cycle: 55 | | | |
| Control Type: Semi Act-Uncoord | | | |
| Maximum v/c Ratio: 0.63 | | | |
| Intersection Signal Delay: 12.2 | | Intersection LOS: B | |
| Intersection Capacity Utilization 59.8% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 12: L Street & E 8th Street



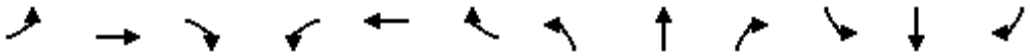
| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 72 | 35 | 625 | 573 |
| v/c Ratio | 0.20 | 0.09 | 0.63 | 0.59 |
| Control Delay | 19.7 | 17.8 | 11.9 | 11.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 19.7 | 17.8 | 11.9 | 11.2 |
| Queue Length 50th (ft) | 20 | 9 | 159 | 139 |
| Queue Length 95th (ft) | 51 | 30 | 242 | 230 |
| Internal Link Dist (ft) | 522 | 597 | 596 | 455 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 366 | 382 | 996 | 967 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.20 | 0.09 | 0.63 | 0.59 |

Intersection Summary



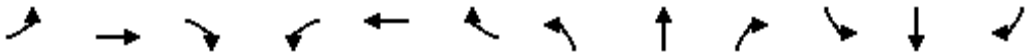
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 21 | 26 | 16 | 5 | 16 | 10 | 16 | 512 | 16 | 21 | 468 | 27 |
| Future Volume (vph) | 21 | 26 | 16 | 5 | 16 | 10 | 16 | 512 | 16 | 21 | 468 | 27 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 16 | 12 | 12 | 15 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Total Lost time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Frpb, ped/bikes | | 0.97 | | | 0.98 | | | 1.00 | | | 0.99 | |
| Flpb, ped/bikes | | 0.99 | | | 0.99 | | | 1.00 | | | 1.00 | |
| Frt | | 0.97 | | | 0.96 | | | 1.00 | | | 0.99 | |
| Flt Protected | | 0.98 | | | 0.99 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | | 1471 | | | 1496 | | | 1581 | | | 1549 | |
| Flt Permitted | | 0.92 | | | 0.97 | | | 0.98 | | | 0.97 | |
| Satd. Flow (perm) | | 1377 | | | 1461 | | | 1554 | | | 1505 | |
| Peak-hour factor, PHF | 0.88 | 0.88 | 0.88 | 0.89 | 0.89 | 0.89 | 0.87 | 0.87 | 0.87 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 24 | 30 | 18 | 6 | 18 | 11 | 18 | 589 | 18 | 23 | 520 | 30 |
| RTOR Reduction (vph) | 0 | 13 | 0 | 0 | 8 | 0 | 0 | 1 | 0 | 0 | 3 | 0 |
| Lane Group Flow (vph) | 0 | 59 | 0 | 0 | 27 | 0 | 0 | 624 | 0 | 0 | 570 | 0 |
| Confl. Peds. (#/hr) | 15 | | 38 | 38 | | 15 | 58 | | 32 | 32 | | 58 |
| Confl. Bikes (#/hr) | | | | | | | | | 1 | | | 2 |
| Heavy Vehicles (%) | 10% | 12% | 0% | 0% | 8% | 0% | 0% | 0% | 0% | 0% | 1% | 4% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 20.0 | | | 20.0 | | | 50.0 | | | 50.0 | |
| Effective Green, g (s) | | 20.0 | | | 20.0 | | | 50.0 | | | 50.0 | |
| Actuated g/C Ratio | | 0.26 | | | 0.26 | | | 0.64 | | | 0.64 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | | | 2.0 | | | 2.0 | |
| Lane Grp Cap (vph) | | 353 | | | 374 | | | 996 | | | 964 | |
| v/s Ratio Prot | | | | | | | | | | | | |
| v/s Ratio Perm | | c0.04 | | | 0.02 | | | c0.40 | | | 0.38 | |
| v/c Ratio | | 0.17 | | | 0.07 | | | 0.63 | | | 0.59 | |
| Uniform Delay, d1 | | 22.5 | | | 22.0 | | | 8.4 | | | 8.1 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 1.0 | | | 0.4 | | | 3.0 | | | 2.7 | |
| Delay (s) | | 23.5 | | | 22.3 | | | 11.4 | | | 10.8 | |
| Level of Service | | C | | | C | | | B | | | B | |
| Approach Delay (s) | | 23.5 | | | 22.3 | | | 11.4 | | | 10.8 | |
| Approach LOS | | C | | | C | | | B | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 12.1 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.49 | | |
| Actuated Cycle Length (s) | 78.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 59.8% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 5 | 5 | 0 | 0 | 16 | 16 | 5 | 507 | 5 | 5 | 442 | 21 |
| Future Volume (vph) | 5 | 5 | 0 | 0 | 16 | 16 | 5 | 507 | 5 | 5 | 442 | 21 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | 0.932 | | | 0.999 | | | 0.994 | |
| Flt Protected | | 0.976 | | | | | | | | | | |
| Satd. Flow (prot) | 0 | 1854 | 0 | 0 | 1771 | 0 | 0 | 1898 | 0 | 0 | 1889 | 0 |
| Flt Permitted | | 0.976 | | | | | | | | | | |
| Satd. Flow (perm) | 0 | 1854 | 0 | 0 | 1771 | 0 | 0 | 1898 | 0 | 0 | 1889 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 239 | | | 189 | | | 91 | | | 676 | |
| Travel Time (s) | | 5.4 | | | 4.3 | | | 2.1 | | | 15.4 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 5 | 5 | 0 | 0 | 17 | 17 | 5 | 551 | 5 | 5 | 480 | 23 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 10 | 0 | 0 | 34 | 0 | 0 | 561 | 0 | 0 | 508 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |

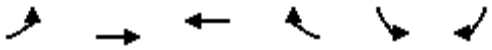
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 41.4% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |



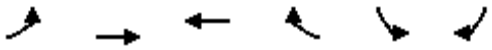
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 5 | 5 | 0 | 0 | 16 | 16 | 5 | 507 | 5 | 5 | 442 | 21 |
| Future Volume (Veh/h) | 5 | 5 | 0 | 0 | 16 | 16 | 5 | 507 | 5 | 5 | 442 | 21 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 5 | 5 | 0 | 0 | 17 | 17 | 5 | 551 | 5 | 5 | 480 | 23 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | 676 | |
| pX, platoon unblocked | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | | 0.85 | | | | | |
| vC, conflicting volume | 1090 | 1068 | 492 | 1068 | 1076 | 554 | 503 | | | 556 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1020 | 993 | 318 | 993 | 1003 | 554 | 331 | | | 556 | | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 97 | 98 | 100 | 100 | 92 | 97 | 100 | | | 100 | | |
| cM capacity (veh/h) | 167 | 209 | 621 | 188 | 206 | 536 | 1057 | | | 1025 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 10 | 34 | 561 | 508 |
| Volume Left | 5 | 0 | 5 | 5 |
| Volume Right | 0 | 17 | 5 | 23 |
| cSH | 185 | 298 | 1057 | 1025 |
| Volume to Capacity | 0.05 | 0.11 | 0.00 | 0.00 |
| Queue Length 95th (ft) | 4 | 10 | 0 | 0 |
| Control Delay (s) | 25.5 | 18.6 | 0.1 | 0.1 |
| Lane LOS | D | C | A | A |
| Approach Delay (s) | 25.5 | 18.6 | 0.1 | 0.1 |
| Approach LOS | D | C | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 0.9 | | | |
| Intersection Capacity Utilization | 41.4% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR | Ø2 |
|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | |
| Traffic Volume (vph) | 507 | 399 | 362 | 10 | 0 | 0 | |
| Future Volume (vph) | 507 | 399 | 362 | 10 | 0 | 0 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Lane Util. Factor | 0.95 | 0.95 | 0.95 | 0.95 | 1.00 | 1.00 | |
| Frt | | | 0.996 | | | | |
| Flt Protected | | 0.973 | | | | | |
| Satd. Flow (prot) | 0 | 3513 | 3596 | 0 | 0 | 0 | |
| Flt Permitted | | 0.630 | | | | | |
| Satd. Flow (perm) | 0 | 2274 | 3596 | 0 | 0 | 0 | |
| Right Turn on Red | | | | Yes | | Yes | |
| Satd. Flow (RTOR) | | | 6 | | | | |
| Link Speed (mph) | | 30 | 30 | | 30 | | |
| Link Distance (ft) | | 336 | 398 | | 184 | | |
| Travel Time (s) | | 7.6 | 9.0 | | 4.2 | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | |
| Adj. Flow (vph) | 551 | 434 | 393 | 11 | 0 | 0 | |
| Shared Lane Traffic (%) | | | | | | | |
| Lane Group Flow (vph) | 0 | 985 | 404 | 0 | 0 | 0 | |
| Enter Blocked Intersection | No | No | No | No | No | No | |
| Lane Alignment | Left | Left | Left | Right | Left | Right | |
| Median Width(ft) | | 0 | 0 | | 0 | | |
| Link Offset(ft) | | 0 | 0 | | 0 | | |
| Crosswalk Width(ft) | | 16 | 16 | | 16 | | |
| Two way Left Turn Lane | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Turning Speed (mph) | 15 | | | 9 | 15 | 9 | |
| Number of Detectors | 1 | 2 | 2 | | | | |
| Detector Template | Left | Thru | Thru | | | | |
| Leading Detector (ft) | 20 | 100 | 100 | | | | |
| Trailing Detector (ft) | 0 | 0 | 0 | | | | |
| Detector 1 Position(ft) | 0 | 0 | 0 | | | | |
| Detector 1 Size(ft) | 20 | 6 | 6 | | | | |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | | | | |
| Detector 1 Channel | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | | | | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | | | | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | | | | |
| Detector 2 Position(ft) | | 94 | 94 | | | | |
| Detector 2 Size(ft) | | 6 | 6 | | | | |
| Detector 2 Type | | Cl+Ex | Cl+Ex | | | | |
| Detector 2 Channel | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | 0.0 | | | | |
| Turn Type | Perm | NA | NA | | | | |
| Protected Phases | | 1 | 1 | | | | 2 |
| Permitted Phases | 1 | | | | | | |
| Detector Phase | 1 | 1 | 1 | | | | |
| Switch Phase | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | 8.0 | | | | 10.0 |



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR | Ø2 |
|---|---|---|---|---|---|---|---|
| Minimum Split (s) | 25.4 | 25.4 | 25.4 | | | | 25.0 |
| Total Split (s) | 70.0 | 70.0 | 70.0 | | | | 25.0 |
| Total Split (%) | 73.7% | 73.7% | 73.7% | | | | 26% |
| Maximum Green (s) | 62.6 | 62.6 | 62.6 | | | | 20.5 |
| Yellow Time (s) | 5.4 | 5.4 | 5.4 | | | | 3.5 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | | | 1.0 |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | | | |
| Total Lost Time (s) | | 7.4 | 7.4 | | | | |
| Lead/Lag | Lead | Lead | Lead | | | | Lag |
| Lead-Lag Optimize? | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | | | | 2.0 |
| Recall Mode | Max | Max | Max | | | | None |
| Walk Time (s) | | | | | | | 18.0 |
| Flash Dont Walk (s) | | | | | | | 1.0 |
| Pedestrian Calls (#/hr) | | | | | | | 28 |
| Act Effct Green (s) | | 83.6 | 83.6 | | | | |
| Actuated g/C Ratio | | 0.89 | 0.89 | | | | |
| v/c Ratio | | 0.49 | 0.13 | | | | |
| Control Delay | | 5.1 | 2.7 | | | | |
| Queue Delay | | 0.0 | 0.0 | | | | |
| Total Delay | | 5.1 | 2.7 | | | | |
| LOS | | A | A | | | | |
| Approach Delay | | 5.1 | 2.7 | | | | |
| Approach LOS | | A | A | | | | |

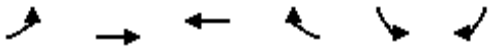
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 95 | | | |
| Actuated Cycle Length: 94.4 | | | |
| Natural Cycle: 60 | | | |
| Control Type: Semi Act-Uncoord | | | |
| Maximum v/c Ratio: 0.49 | | | |
| Intersection Signal Delay: 4.4 | | Intersection LOS: A | |
| Intersection Capacity Utilization 50.7% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 14: Day Blvd Ped



| Lane Group | EBT | WBT |
|---|---|---|
| Lane Group Flow (vph) | 985 | 404 |
| v/c Ratio | 0.49 | 0.13 |
| Control Delay | 5.1 | 2.7 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 5.1 | 2.7 |
| Queue Length 50th (ft) | 0 | 0 |
| Queue Length 95th (ft) | 213 | 56 |
| Internal Link Dist (ft) | 256 | 318 |
| Turn Bay Length (ft) | | |
| Base Capacity (vph) | 2015 | 3187 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.49 | 0.13 |

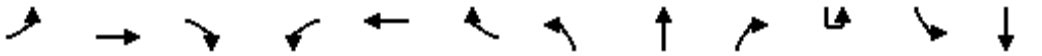
Intersection Summary



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 507 | 399 | 362 | 10 | 0 | 0 |
| Future Volume (vph) | 507 | 399 | 362 | 10 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 7.4 | 7.4 | | | |
| Lane Util. Factor | | 0.95 | 0.95 | | | |
| Frt | | 1.00 | 1.00 | | | |
| Flt Protected | | 0.97 | 1.00 | | | |
| Satd. Flow (prot) | | 3512 | 3595 | | | |
| Flt Permitted | | 0.63 | 1.00 | | | |
| Satd. Flow (perm) | | 2276 | 3595 | | | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 551 | 434 | 393 | 11 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 1 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 985 | 403 | 0 | 0 | 0 |
| Turn Type | Perm | NA | NA | | | |
| Protected Phases | | 1 | 1 | | | |
| Permitted Phases | 1 | | | | | |
| Actuated Green, G (s) | | 78.7 | 78.7 | | | |
| Effective Green, g (s) | | 78.7 | 78.7 | | | |
| Actuated g/C Ratio | | 0.81 | 0.81 | | | |
| Clearance Time (s) | | 7.4 | 7.4 | | | |
| Vehicle Extension (s) | | 2.0 | 2.0 | | | |
| Lane Grp Cap (vph) | | 1842 | 2910 | | | |
| v/s Ratio Prot | | | 0.11 | | | |
| v/s Ratio Perm | | c0.43 | | | | |
| v/c Ratio | | 0.53 | 0.14 | | | |
| Uniform Delay, d1 | | 3.1 | 2.0 | | | |
| Progression Factor | | 1.00 | 1.00 | | | |
| Incremental Delay, d2 | | 1.1 | 0.1 | | | |
| Delay (s) | | 4.2 | 2.1 | | | |
| Level of Service | | A | A | | | |
| Approach Delay (s) | | 4.2 | 2.1 | | 0.0 | |
| Approach LOS | | A | A | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 3.6 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.49 | | |
| Actuated Cycle Length (s) | 97.2 | Sum of lost time (s) | 11.9 |
| Intersection Capacity Utilization | 50.7% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



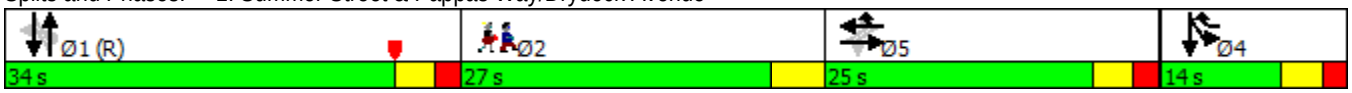
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBU | SBL | SBT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 144 | 99 | 5 | 151 | 54 | 115 | 11 | 1039 | 336 | 5 | 356 | 609 |
| Future Volume (vph) | 144 | 99 | 5 | 151 | 54 | 115 | 11 | 1039 | 336 | 5 | 356 | 609 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 14 | 12 | 12 | 13 | 16 | 10 | 11 | 12 | 12 | 13 | 12 |
| Storage Length (ft) | 0 | | 0 | 350 | | 0 | 70 | | 0 | | 350 | |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 0 | | 1 | |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | | 25 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 1.00 | 0.95 |
| Ped Bike Factor | | 0.98 | | | 0.99 | | 0.96 | 0.99 | | | 1.00 | 0.97 |
| Frt | | 0.997 | | | | 0.850 | | 0.963 | | | | 0.973 |
| Flt Protected | | 0.972 | | | 0.964 | | 0.950 | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 1594 | 0 | 0 | 1540 | 1458 | 1516 | 2802 | 0 | 0 | 1556 | 2741 |
| Flt Permitted | | 0.626 | | | 0.622 | | 0.155 | | | | 0.155 | |
| Satd. Flow (perm) | 0 | 1010 | 0 | 0 | 985 | 1458 | 238 | 2802 | 0 | 0 | 253 | 2741 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | |
| Satd. Flow (RTOR) | | 1 | | | | 134 | | 44 | | | | 33 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | | 30 |
| Link Distance (ft) | | 745 | | | 950 | | | 1523 | | | | 585 |
| Travel Time (s) | | 16.9 | | | 21.6 | | | 34.6 | | | | 13.3 |
| Confl. Peds. (#/hr) | 32 | | 17 | 17 | | 32 | 127 | | 36 | | 36 | |
| Confl. Bikes (#/hr) | | | 7 | | | 3 | | | 7 | | | |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.86 | 0.86 | 0.86 | 0.89 | 0.89 | 0.89 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 11% | 11% | 0% | 8% | 18% | 13% | 0% | 8% | 2% | 0% | 8% | 13% |
| Adj. Flow (vph) | 169 | 116 | 6 | 176 | 63 | 134 | 12 | 1167 | 378 | 5 | 379 | 648 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 291 | 0 | 0 | 239 | 134 | 12 | 1545 | 0 | 0 | 384 | 789 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | R NA | Left | Left |
| Median Width(ft) | | 0 | | | 6 | | | 13 | | | | 17 |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | | 0 |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | | 16 |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.05 | 1.14 | 1.14 | 1.10 | 0.97 | 1.25 | 1.19 | 1.14 | 1.14 | 1.10 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 9 | 15 | |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | | 1 | 1 | 2 |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | | Left | Left | Thru |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | 20 | 20 | 100 | | 20 | 20 | 100 |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | 20 | 20 | 6 | | 20 | 20 | 6 |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | | 94 |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | | 6 |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | Cl+Ex |

| Lane Group | SBR | Ø2 |
|---|---|---|
| Lane Configurations | | |
| Traffic Volume (vph) | 133 | |
| Future Volume (vph) | 133 | |
| Ideal Flow (vphpl) | 1900 | |
| Lane Width (ft) | 12 | |
| Storage Length (ft) | 0 | |
| Storage Lanes | 0 | |
| Taper Length (ft) | | |
| Lane Util. Factor | 0.95 | |
| Ped Bike Factor | | |
| Frt | | |
| Flt Protected | | |
| Satd. Flow (prot) | 0 | |
| Flt Permitted | | |
| Satd. Flow (perm) | 0 | |
| Right Turn on Red | Yes | |
| Satd. Flow (RTOR) | | |
| Link Speed (mph) | | |
| Link Distance (ft) | | |
| Travel Time (s) | | |
| Confl. Peds. (#/hr) | 127 | |
| Confl. Bikes (#/hr) | 12 | |
| Peak Hour Factor | 0.94 | |
| Heavy Vehicles (%) | 6% | |
| Adj. Flow (vph) | 141 | |
| Shared Lane Traffic (%) | | |
| Lane Group Flow (vph) | 0 | |
| Enter Blocked Intersection | No | |
| Lane Alignment | Right | |
| Median Width(ft) | | |
| Link Offset(ft) | | |
| Crosswalk Width(ft) | | |
| Two way Left Turn Lane | | |
| Headway Factor | 1.14 | |
| Turning Speed (mph) | 9 | |
| Number of Detectors | | |
| Detector Template | | |
| Leading Detector (ft) | | |
| Trailing Detector (ft) | | |
| Detector 1 Position(ft) | | |
| Detector 1 Size(ft) | | |
| Detector 1 Type | | |
| Detector 1 Channel | | |
| Detector 1 Extend (s) | | |
| Detector 1 Queue (s) | | |
| Detector 1 Delay (s) | | |
| Detector 2 Position(ft) | | |
| Detector 2 Size(ft) | | |
| Detector 2 Type | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBU | SBL | SBT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | 0.0 |
| Turn Type | Perm | NA | | Perm | NA | pt+ov | Perm | NA | | D.Pm | D.P+P | NA |
| Protected Phases | | 5 | | | 5 | 5 4 | | 1 | | | 4 | 1 4 |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | 1 | |
| Detector Phase | 5 | 5 | | 5 | 5 | 5 4 | 1 | 1 | | 1 | 4 | 1 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | |
| Minimum Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | | 13.0 | 13.0 | | 13.0 | 13.0 | |
| Total Split (s) | 25.0 | 25.0 | | 25.0 | 25.0 | | 34.0 | 34.0 | | 34.0 | 14.0 | |
| Total Split (%) | 25.0% | 25.0% | | 25.0% | 25.0% | | 34.0% | 34.0% | | 34.0% | 14.0% | |
| Maximum Green (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 29.0 | 29.0 | | 29.0 | 9.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | 0.0 | 0.0 | | | 0.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | 5.0 | 5.0 | | | 5.0 | |
| Lead/Lag | | | | | | | Lead | Lead | | Lead | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | None | None | | None | None | | C-Max | C-Max | | C-Max | None | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 41.6 | | | 41.6 | 55.6 | 29.0 | 29.0 | | | 38.0 | 43.0 |
| Actuated g/C Ratio | | 0.42 | | | 0.42 | 0.56 | 0.29 | 0.29 | | | 0.38 | 0.43 |
| v/c Ratio | | 0.69 | | | 0.58 | 0.15 | 0.17 | 1.83 | | | 1.80 | 0.66 |
| Control Delay | | 37.4 | | | 33.5 | 3.9 | 34.2 | 404.3 | | | 400.2 | 24.9 |
| Queue Delay | | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | | | 0.0 | 0.0 |
| Total Delay | | 37.4 | | | 33.5 | 3.9 | 34.2 | 404.3 | | | 400.2 | 24.9 |
| LOS | | D | | | C | A | C | F | | | F | C |
| Approach Delay | | 37.4 | | | 22.9 | | | 401.4 | | | | 147.8 |
| Approach LOS | | D | | | C | | | F | | | | F |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 100 | | | |
| Actuated Cycle Length: 100 | | | |
| Offset: 0 (0%), Referenced to phase 1:NBSB, Start of Yellow | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 1.83 | | | |
| Intersection Signal Delay: 240.9 | | Intersection LOS: F | |
| Intersection Capacity Utilization 109.3% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 1: Summer Street & Pappas Way/Drydock Avenue





| Lane Group | SBR | Ø2 |
|---|---|---|
| Detector 2 Channel | | |
| Detector 2 Extend (s) | | |
| Turn Type | | |
| Protected Phases | | 2 |
| Permitted Phases | | |
| Detector Phase | | |
| Switch Phase | | |
| Minimum Initial (s) | | 4.0 |
| Minimum Split (s) | | 27.0 |
| Total Split (s) | | 27.0 |
| Total Split (%) | | 27% |
| Maximum Green (s) | | 23.0 |
| Yellow Time (s) | | 4.0 |
| All-Red Time (s) | | 0.0 |
| Lost Time Adjust (s) | | |
| Total Lost Time (s) | | |
| Lead/Lag | | Lag |
| Lead-Lag Optimize? | | |
| Vehicle Extension (s) | | 2.0 |
| Recall Mode | | None |
| Walk Time (s) | | 7.0 |
| Flash Dont Walk (s) | | 16.0 |
| Pedestrian Calls (#/hr) | | 10 |
| Act Effct Green (s) | | |
| Actuated g/C Ratio | | |
| v/c Ratio | | |
| Control Delay | | |
| Queue Delay | | |
| Total Delay | | |
| LOS | | |
| Approach Delay | | |
| Approach LOS | | |

| Intersection Summary |
|---|



| Lane Group | EBT | WBT | WBR | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 291 | 239 | 134 | 12 | 1545 | 384 | 789 |
| v/c Ratio | 0.69 | 0.58 | 0.15 | 0.17 | 1.83 | 1.80 | 0.66 |
| Control Delay | 37.4 | 33.5 | 3.9 | 34.2 | 404.3 | 400.2 | 24.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 37.4 | 33.5 | 3.9 | 34.2 | 404.3 | 400.2 | 24.9 |
| Queue Length 50th (ft) | 133 | 103 | 0 | 6 | ~787 | ~324 | 196 |
| Queue Length 95th (ft) | #390 | #318 | 35 | 22 | #912 | #507 | 264 |
| Internal Link Dist (ft) | 665 | 870 | | | 1443 | | 505 |
| Turn Bay Length (ft) | | | | 70 | | 350 | |
| Base Capacity (vph) | 420 | 409 | 870 | 69 | 843 | 213 | 1197 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.69 | 0.58 | 0.15 | 0.17 | 1.83 | 1.80 | 0.66 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBU | SBL | SBT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 144 | 99 | 5 | 151 | 54 | 115 | 11 | 1039 | 336 | 5 | 356 | 609 |
| Future Volume (vph) | 144 | 99 | 5 | 151 | 54 | 115 | 11 | 1039 | 336 | 5 | 356 | 609 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 14 | 12 | 12 | 13 | 16 | 10 | 11 | 12 | 12 | 13 | 12 |
| Total Lost time (s) | | 5.0 | | | 5.0 | 5.0 | 5.0 | 5.0 | | | 5.0 | 5.0 |
| Lane Util. Factor | | 1.00 | | | 1.00 | 1.00 | 1.00 | 0.95 | | | 1.00 | 0.95 |
| Frpb, ped/bikes | | 1.00 | | | 1.00 | 1.00 | 1.00 | 0.99 | | | 1.00 | 0.97 |
| Flpb, ped/bikes | | 0.99 | | | 0.99 | 1.00 | 0.96 | 1.00 | | | 1.00 | 1.00 |
| Frt | | 1.00 | | | 1.00 | 0.85 | 1.00 | 0.96 | | | 1.00 | 0.97 |
| Flt Protected | | 0.97 | | | 0.96 | 1.00 | 0.95 | 1.00 | | | 0.95 | 1.00 |
| Satd. Flow (prot) | | 1580 | | | 1532 | 1458 | 1454 | 2799 | | | 1555 | 2736 |
| Flt Permitted | | 0.63 | | | 0.62 | 1.00 | 0.16 | 1.00 | | | 0.16 | 1.00 |
| Satd. Flow (perm) | | 1018 | | | 989 | 1458 | 237 | 2799 | | | 254 | 2736 |
| Peak-hour factor, PHF | 0.85 | 0.85 | 0.85 | 0.86 | 0.86 | 0.86 | 0.89 | 0.89 | 0.89 | 0.94 | 0.94 | 0.94 |
| Adj. Flow (vph) | 169 | 116 | 6 | 176 | 63 | 134 | 12 | 1167 | 378 | 5 | 379 | 648 |
| RTOR Reduction (vph) | 0 | 1 | 0 | 0 | 0 | 59 | 0 | 33 | 0 | 0 | 0 | 20 |
| Lane Group Flow (vph) | 0 | 290 | 0 | 0 | 239 | 75 | 12 | 1512 | 0 | 0 | 384 | 769 |
| Confl. Peds. (#/hr) | 32 | | 17 | 17 | | 32 | 127 | | 36 | | 36 | |
| Confl. Bikes (#/hr) | | | 7 | | | 3 | | | 7 | | | |
| Heavy Vehicles (%) | 11% | 11% | 0% | 8% | 18% | 13% | 0% | 8% | 2% | 0% | 8% | 13% |
| Turn Type | Perm | NA | | Perm | NA | pt+ov | Perm | NA | | D.Pm | D.P+P | NA |
| Protected Phases | | 5 | | | 5 | 5 4 | | 1 | | | 4 | 1 4 |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | 1 | |
| Actuated Green, G (s) | | 41.6 | | | 41.6 | 55.6 | 25.8 | 25.8 | | | 34.8 | 39.8 |
| Effective Green, g (s) | | 41.6 | | | 41.6 | 55.6 | 25.8 | 25.8 | | | 34.8 | 39.8 |
| Actuated g/C Ratio | | 0.42 | | | 0.42 | 0.56 | 0.26 | 0.26 | | | 0.35 | 0.40 |
| Clearance Time (s) | | 5.0 | | | 5.0 | | 5.0 | 5.0 | | | 5.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | | 2.0 | 2.0 | | | 2.0 | |
| Lane Grp Cap (vph) | | 423 | | | 411 | 810 | 61 | 722 | | | 205 | 1088 |
| v/s Ratio Prot | | | | | | 0.05 | | c0.54 | | | c0.17 | 0.28 |
| v/s Ratio Perm | | c0.29 | | | 0.24 | | 0.05 | | | | 0.48 | |
| v/c Ratio | | 0.69 | | | 0.58 | 0.09 | 0.20 | 2.09 | | | 1.87 | 0.71 |
| Uniform Delay, d1 | | 23.9 | | | 22.5 | 10.4 | 29.0 | 37.1 | | | 28.7 | 25.2 |
| Progression Factor | | 1.00 | | | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 | 1.00 |
| Incremental Delay, d2 | | 3.7 | | | 1.4 | 0.0 | 7.1 | 497.3 | | | 410.9 | 1.7 |
| Delay (s) | | 27.5 | | | 23.8 | 10.4 | 36.1 | 534.4 | | | 439.6 | 26.9 |
| Level of Service | | C | | | C | B | D | F | | | F | C |
| Approach Delay (s) | | 27.5 | | | 19.0 | | | 530.6 | | | | 162.0 |
| Approach LOS | | C | | | B | | | F | | | | F |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 303.9 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 1.23 | | |
| Actuated Cycle Length (s) | 100.0 | Sum of lost time (s) | 19.0 |
| Intersection Capacity Utilization | 109.3% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



| Movement | SBR |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | 133 |
| Future Volume (vph) | 133 |
| Ideal Flow (vphpl) | 1900 |
| Lane Width | 12 |
| Total Lost time (s) | |
| Lane Util. Factor | |
| Frpb, ped/bikes | |
| Flpb, ped/bikes | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Peak-hour factor, PHF | 0.94 |
| Adj. Flow (vph) | 141 |
| RTOR Reduction (vph) | 0 |
| Lane Group Flow (vph) | 0 |
| Confl. Peds. (#/hr) | 127 |
| Confl. Bikes (#/hr) | 12 |
| Heavy Vehicles (%) | 6% |
| Turn Type | |
| Protected Phases | |
| Permitted Phases | |
| Actuated Green, G (s) | |
| Effective Green, g (s) | |
| Actuated g/C Ratio | |
| Clearance Time (s) | |
| Vehicle Extension (s) | |
| Lane Grp Cap (vph) | |
| v/s Ratio Prot | |
| v/s Ratio Perm | |
| v/c Ratio | |
| Uniform Delay, d1 | |
| Progression Factor | |
| Incremental Delay, d2 | |
| Delay (s) | |
| Level of Service | |
| Approach Delay (s) | |
| Approach LOS | |

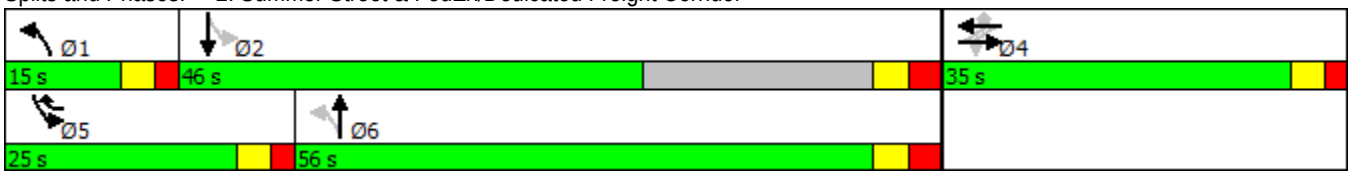
| Intersection Summary |
|---|

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 32 | 0 | 0 | 16 | 0 | 59 | 0 | 1295 | 21 | 94 | 691 | 0 |
| Future Volume (vph) | 32 | 0 | 0 | 16 | 0 | 59 | 0 | 1295 | 21 | 94 | 691 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 13 | 13 | 13 | 12 | 12 | 12 | 10 | 10 | 10 | 11 | 11 | 11 |
| Storage Length (ft) | 0 | | 0 | 0 | | 60 | 60 | | 0 | 120 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 50 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Frt | | | | | | 0.850 | | 0.998 | | | | |
| Flt Protected | | 0.950 | | | 0.950 | | | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1679 | 0 | 0 | 1624 | 727 | 1596 | 3026 | 0 | 785 | 2991 | 0 |
| Flt Permitted | | 0.746 | | | 0.734 | | | | | 0.109 | | |
| Satd. Flow (perm) | 0 | 1318 | 0 | 0 | 1255 | 727 | 1596 | 3026 | 0 | 90 | 2991 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | | 28 | | 2 | | | | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 203 | | | 352 | | | 675 | | | 1523 | |
| Travel Time (s) | | 4.6 | | | 8.0 | | | 15.3 | | | 34.6 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 100% | 0% | 0% | 0% | 100% | 5% | 0% |
| Adj. Flow (vph) | 35 | 0 | 0 | 17 | 0 | 64 | 0 | 1408 | 23 | 102 | 751 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 35 | 0 | 0 | 17 | 64 | 0 | 1431 | 0 | 102 | 751 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 12 | | | 11 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.10 | 1.10 | 1.10 | 1.14 | 1.14 | 1.14 | 1.25 | 1.25 | 1.25 | 1.19 | 1.19 | 1.19 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | 20 | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | 20 | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | pm+ov | pm+pt | NA | | pm+pt | NA | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Protected Phases | | 4 | | | 4 | 5 | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 4 | | | 4 | | 4 | 6 | 6 | | 2 | | |
| Detector Phase | 4 | 4 | | 4 | 4 | 5 | 1 | 6 | | 5 | 2 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 6.0 | 6.0 | | 6.0 | 6.0 | 6.0 | 6.0 | 10.0 | | 6.0 | 10.0 | |
| Minimum Split (s) | 26.0 | 26.0 | | 26.0 | 26.0 | 11.0 | 11.0 | 24.0 | | 11.0 | 24.0 | |
| Total Split (s) | 35.0 | 35.0 | | 35.0 | 35.0 | 25.0 | 15.0 | 56.0 | | 25.0 | 46.0 | |
| Total Split (%) | 30.2% | 30.2% | | 30.2% | 30.2% | 21.6% | 12.9% | 48.3% | | 21.6% | 39.7% | |
| Maximum Green (s) | 30.0 | 30.0 | | 30.0 | 30.0 | 20.0 | 10.0 | 50.0 | | 20.0 | 40.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 3.0 | | 2.0 | 3.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | 5.0 | 5.0 | 6.0 | | 5.0 | 6.0 | |
| Lead/Lag | | | | | | Lead | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | None | None | | None | None | None | None | Ped | | None | Max | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | | 7.0 | | | | |
| Flash Dont Walk (s) | 14.0 | 14.0 | | 14.0 | 14.0 | | | 9.0 | | | | |
| Pedestrian Calls (#/hr) | 10 | 10 | | 10 | 10 | | | 10 | | | | |
| Act Effct Green (s) | | 9.1 | | | 9.1 | 22.1 | | 54.2 | | 73.3 | 75.1 | |
| Actuated g/C Ratio | | 0.10 | | | 0.10 | 0.25 | | 0.62 | | 0.84 | 0.86 | |
| v/c Ratio | | 0.26 | | | 0.13 | 0.31 | | 0.76 | | 0.57 | 0.29 | |
| Control Delay | | 41.8 | | | 39.2 | 17.7 | | 19.8 | | 26.1 | 3.2 | |
| Queue Delay | | 0.0 | | | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | |
| Total Delay | | 41.8 | | | 39.2 | 17.7 | | 19.8 | | 26.1 | 3.2 | |
| LOS | | D | | | D | B | | B | | C | A | |
| Approach Delay | | 41.8 | | | 22.2 | | | 19.8 | | | 5.9 | |
| Approach LOS | | D | | | C | | | B | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 116 | | | |
| Actuated Cycle Length: 87.5 | | | |
| Natural Cycle: 90 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 0.76 | | | |
| Intersection Signal Delay: 15.3 | | Intersection LOS: B | |
| Intersection Capacity Utilization 68.3% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 2: Summer Street & FedEx/Dedicated Freight Corridor

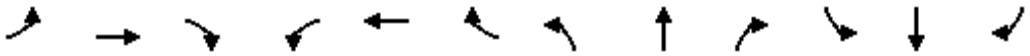




| Lane Group | EBT | WBT | WBR | NBT | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 35 | 17 | 64 | 1431 | 102 | 751 |
| v/c Ratio | 0.26 | 0.13 | 0.31 | 0.76 | 0.57 | 0.29 |
| Control Delay | 41.8 | 39.2 | 17.7 | 19.8 | 26.1 | 3.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 41.8 | 39.2 | 17.7 | 19.8 | 26.1 | 3.2 |
| Queue Length 50th (ft) | 18 | 9 | 14 | 300 | 14 | 43 |
| Queue Length 95th (ft) | 49 | 29 | 44 | #684 | 84 | 124 |
| Internal Link Dist (ft) | 123 | 272 | | 595 | | 1443 |
| Turn Bay Length (ft) | | | 60 | | 120 | |
| Base Capacity (vph) | 461 | 438 | 263 | 1875 | 237 | 2565 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.08 | 0.04 | 0.24 | 0.76 | 0.43 | 0.29 |

Intersection Summary

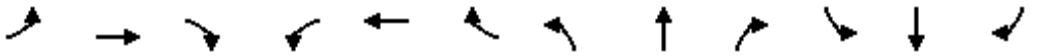
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 32 | 0 | 0 | 16 | 0 | 59 | 0 | 1295 | 21 | 94 | 691 | 0 |
| Future Volume (vph) | 32 | 0 | 0 | 16 | 0 | 59 | 0 | 1295 | 21 | 94 | 691 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 13 | 13 | 13 | 12 | 12 | 12 | 10 | 10 | 10 | 11 | 11 | 11 |
| Total Lost time (s) | | 5.0 | | | 5.0 | 5.0 | | 6.0 | | 5.0 | 6.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | 1.00 | | 0.95 | | 1.00 | 0.95 | |
| Frt | | 1.00 | | | 1.00 | 0.85 | | 1.00 | | 1.00 | 1.00 | |
| Flt Protected | | 0.95 | | | 0.95 | 1.00 | | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 1679 | | | 1624 | 727 | | 3025 | | 785 | 2991 | |
| Flt Permitted | | 0.75 | | | 0.73 | 1.00 | | 1.00 | | 0.11 | 1.00 | |
| Satd. Flow (perm) | | 1319 | | | 1256 | 727 | | 3025 | | 90 | 2991 | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 35 | 0 | 0 | 17 | 0 | 64 | 0 | 1408 | 23 | 102 | 751 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 22 | 0 | 1 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 35 | 0 | 0 | 17 | 42 | 0 | 1430 | 0 | 102 | 751 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 100% | 0% | 0% | 0% | 100% | 5% | 0% |
| Turn Type | Perm | NA | | Perm | NA | pm+ov | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | | 4 | | | 4 | 5 | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 4 | | | 4 | | 4 | 6 | 6 | | 2 | | |
| Actuated Green, G (s) | | 6.3 | | | 6.3 | 19.3 | | 54.3 | | 72.3 | 72.3 | |
| Effective Green, g (s) | | 6.3 | | | 6.3 | 19.3 | | 54.3 | | 72.3 | 72.3 | |
| Actuated g/C Ratio | | 0.07 | | | 0.07 | 0.22 | | 0.61 | | 0.81 | 0.81 | |
| Clearance Time (s) | | 5.0 | | | 5.0 | 5.0 | | 6.0 | | 5.0 | 6.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | 2.0 | | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | | 92 | | | 88 | 197 | | 1833 | | 173 | 2413 | |
| v/s Ratio Prot | | | | | | 0.03 | | c0.47 | | c0.09 | 0.25 | |
| v/s Ratio Perm | | c0.03 | | | 0.01 | 0.03 | | | | 0.39 | | |
| v/c Ratio | | 0.38 | | | 0.19 | 0.21 | | 0.78 | | 0.59 | 0.31 | |
| Uniform Delay, d1 | | 39.8 | | | 39.3 | 28.9 | | 13.2 | | 12.8 | 2.2 | |
| Progression Factor | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 1.0 | | | 0.4 | 0.2 | | 2.0 | | 3.3 | 0.3 | |
| Delay (s) | | 40.7 | | | 39.6 | 29.1 | | 15.2 | | 16.1 | 2.6 | |
| Level of Service | | D | | | D | C | | B | | B | A | |
| Approach Delay (s) | | 40.7 | | | 31.3 | | | 15.2 | | | 4.2 | |
| Approach LOS | | D | | | C | | | B | | | A | |

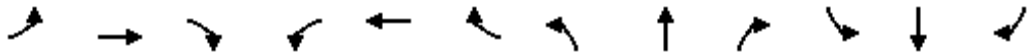
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 12.2 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.71 | | |
| Actuated Cycle Length (s) | 89.6 | Sum of lost time (s) | 16.0 |
| Intersection Capacity Utilization | 68.3% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 16 | 0 | 11 | 40 | 0 | 98 | 32 | 1122 | 51 | 124 | 567 | 48 |
| Future Volume (vph) | 16 | 0 | 11 | 40 | 0 | 98 | 32 | 1122 | 51 | 124 | 567 | 48 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 14 | 12 | 12 | 12 | 12 | 12 | 10 | 10 | 12 | 10 | 10 | 10 |
| Storage Length (ft) | 0 | | 0 | 0 | | 100 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Ped Bike Factor | | | | | | | | 1.00 | | | 0.98 | |
| Frt | | 0.945 | | | | 0.850 | | 0.993 | | | 0.990 | |
| Flt Protected | | 0.971 | | | 0.950 | | | 0.999 | | | 0.992 | |
| Satd. Flow (prot) | 0 | 1342 | 0 | 0 | 1624 | 1454 | 0 | 2978 | 0 | 0 | 2841 | 0 |
| Flt Permitted | | 0.851 | | | 0.791 | | | 0.912 | | | 0.527 | |
| Satd. Flow (perm) | 0 | 1176 | 0 | 0 | 1353 | 1454 | 0 | 2713 | 0 | 0 | 1509 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 362 | | | 235 | | | 355 | | | 675 | |
| Travel Time (s) | | 8.2 | | | 5.3 | | | 8.1 | | | 15.3 | |
| Confl. Peds. (#/hr) | | | | | | | 126 | | | | | 126 |
| Confl. Bikes (#/hr) | | | | | | | | | | | | 4 |
| Peak Hour Factor | 0.64 | 0.92 | 0.64 | 0.92 | 0.92 | 0.92 | 0.97 | 0.97 | 0.92 | 0.92 | 0.89 | 0.89 |
| Heavy Vehicles (%) | 8% | 0% | 30% | 0% | 0% | 0% | 3% | 1% | 0% | 0% | 3% | 0% |
| Parking (#/hr) | | | | | | | 1 | | | | | 1 |
| Adj. Flow (vph) | 25 | 0 | 17 | 43 | 0 | 107 | 33 | 1157 | 55 | 135 | 637 | 54 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 42 | 0 | 0 | 43 | 107 | 0 | 1245 | 0 | 0 | 826 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.05 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.25 | 1.25 | 1.14 | 1.25 | 1.25 | 1.25 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | 20 | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | 20 | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |

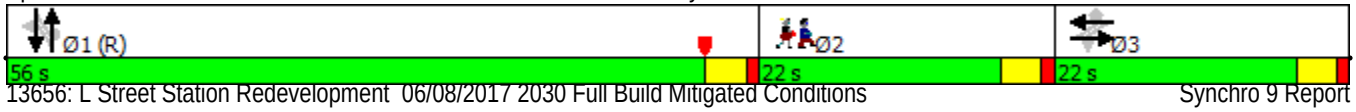
| Lane Group | Ø2 |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | |
| Future Volume (vph) | |
| Ideal Flow (vphpl) | |
| Lane Width (ft) | |
| Storage Length (ft) | |
| Storage Lanes | |
| Taper Length (ft) | |
| Lane Util. Factor | |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Right Turn on Red | |
| Satd. Flow (RTOR) | |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | |
| Heavy Vehicles (%) | |
| Parking (#/hr) | |
| Adj. Flow (vph) | |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | |
| Enter Blocked Intersection | |
| Lane Alignment | |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | |
| Turning Speed (mph) | |
| Number of Detectors | |
| Detector Template | |
| Leading Detector (ft) | |
| Trailing Detector (ft) | |
| Detector 1 Position(ft) | |
| Detector 1 Size(ft) | |
| Detector 1 Type | |
| Detector 1 Channel | |
| Detector 1 Extend (s) | |
| Detector 1 Queue (s) | |
| Detector 1 Delay (s) | |
| Detector 2 Position(ft) | |
| Detector 2 Size(ft) | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | Perm | Perm | NA | | Perm | NA | |
| Protected Phases | | 3 | | | 3 | | | 1 | | | 1 | |
| Permitted Phases | 3 | | | 3 | | 3 | 1 | | | 1 | | |
| Detector Phase | 3 | 3 | | 3 | 3 | 3 | 1 | 1 | | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Minimum Split (s) | 22.0 | 22.0 | | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | | 22.0 | 22.0 | |
| Total Split (s) | 22.0 | 22.0 | | 22.0 | 22.0 | 22.0 | 56.0 | 56.0 | | 56.0 | 56.0 | |
| Total Split (%) | 22.0% | 22.0% | | 22.0% | 22.0% | 22.0% | 56.0% | 56.0% | | 56.0% | 56.0% | |
| Maximum Green (s) | 18.0 | 18.0 | | 18.0 | 18.0 | 18.0 | 52.0 | 52.0 | | 52.0 | 52.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | 0.0 | | 0.0 | | | 0.0 | |
| Total Lost Time (s) | | 4.0 | | | 4.0 | 4.0 | | 4.0 | | | 4.0 | |
| Lead/Lag | | | | | | | Lead | Lead | | Lead | Lead | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | Max | Max | | Max | Max | Max | C-Max | C-Max | | C-Max | C-Max | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 11.0 | 11.0 | | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | | 11.0 | 11.0 | |
| Pedestrian Calls (#/hr) | 60 | 60 | | 60 | 60 | 60 | 60 | 60 | | 60 | 60 | |
| Act Effct Green (s) | | 18.0 | | | 18.0 | 18.0 | | 52.0 | | | 52.0 | |
| Actuated g/C Ratio | | 0.18 | | | 0.18 | 0.18 | | 0.52 | | | 0.52 | |
| v/c Ratio | | 0.20 | | | 0.18 | 0.41 | | 0.88 | | | 1.36dl | |
| Control Delay | | 37.7 | | | 37.0 | 41.8 | | 30.5 | | | 72.6 | |
| Queue Delay | | 0.0 | | | 0.0 | 0.0 | | 47.1 | | | 0.0 | |
| Total Delay | | 37.7 | | | 37.0 | 41.8 | | 77.6 | | | 72.6 | |
| LOS | | D | | | D | D | | E | | | E | |
| Approach Delay | | 37.7 | | | 40.4 | | | 77.6 | | | 72.6 | |
| Approach LOS | | D | | | D | | | E | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 100 | | | |
| Actuated Cycle Length: 100 | | | |
| Offset: 0 (0%), Referenced to phase 1:NBSB, Start of Yellow | | | |
| Natural Cycle: 100 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 1.05 | | | |
| Intersection Signal Delay: 72.6 | | Intersection LOS: E | |
| Intersection Capacity Utilization 79.2% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |
| dl Defacto Left Lane. Recode with 1 though lane as a left lane. | | | |

Splits and Phases: 3: Summer Street & Elkins Street/Elkins Driveway



| Lane Group | Ø2 |
|---|---|
| Detector 2 Type | |
| Detector 2 Channel | |
| Detector 2 Extend (s) | |
| Turn Type | |
| Protected Phases | 2 |
| Permitted Phases | |
| Detector Phase | |
| Switch Phase | |
| Minimum Initial (s) | 4.0 |
| Minimum Split (s) | 22.0 |
| Total Split (s) | 22.0 |
| Total Split (%) | 22% |
| Maximum Green (s) | 18.0 |
| Yellow Time (s) | 3.0 |
| All-Red Time (s) | 1.0 |
| Lost Time Adjust (s) | |
| Total Lost Time (s) | |
| Lead/Lag | Lag |
| Lead-Lag Optimize? | |
| Vehicle Extension (s) | 2.0 |
| Recall Mode | Ped |
| Walk Time (s) | 7.0 |
| Flash Dont Walk (s) | 11.0 |
| Pedestrian Calls (#/hr) | 60 |
| Act Effct Green (s) | |
| Actuated g/C Ratio | |
| v/c Ratio | |
| Control Delay | |
| Queue Delay | |
| Total Delay | |
| LOS | |
| Approach Delay | |
| Approach LOS | |

| Intersection Summary |
|---|



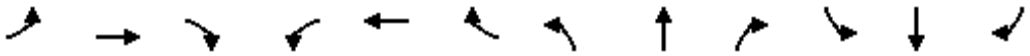
| Lane Group | EBT | WBT | WBR | NBT | SBT |
|---|---|---|---|---|---|
| Lane Group Flow (vph) | 42 | 43 | 107 | 1245 | 826 |
| v/c Ratio | 0.20 | 0.18 | 0.41 | 0.88 | 1.36dl |
| Control Delay | 37.7 | 37.0 | 41.8 | 30.5 | 72.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 47.1 | 0.0 |
| Total Delay | 37.7 | 37.0 | 41.8 | 77.6 | 72.6 |
| Queue Length 50th (ft) | 23 | 23 | 61 | 353 | ~304 |
| Queue Length 95th (ft) | 55 | 55 | 114 | #483 | #418 |
| Internal Link Dist (ft) | 282 | 155 | | 275 | 595 |
| Turn Bay Length (ft) | | | 100 | | |
| Base Capacity (vph) | 211 | 243 | 261 | 1410 | 784 |
| Starvation Cap Reductn | 0 | 0 | 0 | 314 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.20 | 0.18 | 0.41 | 1.14 | 1.05 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

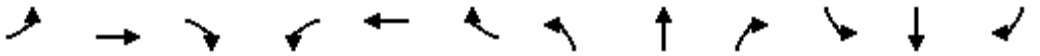


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 16 | 0 | 11 | 40 | 0 | 98 | 32 | 1122 | 51 | 124 | 567 | 48 |
| Future Volume (vph) | 16 | 0 | 11 | 40 | 0 | 98 | 32 | 1122 | 51 | 124 | 567 | 48 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 14 | 12 | 12 | 12 | 12 | 12 | 10 | 10 | 12 | 10 | 10 | 10 |
| Total Lost time (s) | | 4.0 | | | 4.0 | 4.0 | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | 1.00 | | 0.95 | | | 0.95 | |
| Frpb, ped/bikes | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | | 0.98 | |
| Flpb, ped/bikes | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Frt | | 0.95 | | | 1.00 | 0.85 | | 0.99 | | | 0.99 | |
| Flt Protected | | 0.97 | | | 0.95 | 1.00 | | 1.00 | | | 0.99 | |
| Satd. Flow (prot) | | 1343 | | | 1624 | 1454 | | 2972 | | | 2842 | |
| Flt Permitted | | 0.85 | | | 0.79 | 1.00 | | 0.91 | | | 0.53 | |
| Satd. Flow (perm) | | 1177 | | | 1353 | 1454 | | 2713 | | | 1508 | |
| Peak-hour factor, PHF | 0.64 | 0.92 | 0.64 | 0.92 | 0.92 | 0.92 | 0.97 | 0.97 | 0.92 | 0.92 | 0.89 | 0.89 |
| Adj. Flow (vph) | 25 | 0 | 17 | 43 | 0 | 107 | 33 | 1157 | 55 | 135 | 637 | 54 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 42 | 0 | 0 | 43 | 107 | 0 | 1245 | 0 | 0 | 826 | 0 |
| Confl. Peds. (#/hr) | | | | | | | 126 | | | | | 126 |
| Confl. Bikes (#/hr) | | | | | | | | | | | | 4 |
| Heavy Vehicles (%) | 8% | 0% | 30% | 0% | 0% | 0% | 3% | 1% | 0% | 0% | 3% | 0% |
| Parking (#/hr) | | | | | | | 1 | | | | | 1 |
| Turn Type | Perm | NA | | Perm | NA | Perm | Perm | NA | | Perm | NA | |
| Protected Phases | | 3 | | | 3 | | | 1 | | | 1 | |
| Permitted Phases | 3 | | | 3 | | 3 | 1 | | | 1 | | |
| Actuated Green, G (s) | | 18.0 | | | 18.0 | 18.0 | | 52.0 | | | 52.0 | |
| Effective Green, g (s) | | 18.0 | | | 18.0 | 18.0 | | 52.0 | | | 52.0 | |
| Actuated g/C Ratio | | 0.18 | | | 0.18 | 0.18 | | 0.52 | | | 0.52 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | 4.0 | | 4.0 | | | 4.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | 2.0 | | 2.0 | | | 2.0 | |
| Lane Grp Cap (vph) | | 211 | | | 243 | 261 | | 1410 | | | 784 | |
| v/s Ratio Prot | | | | | | | | | | | | |
| v/s Ratio Perm | | 0.04 | | | 0.03 | c0.07 | | 0.46 | | | c0.55 | |
| v/c Ratio | | 0.20 | | | 0.18 | 0.41 | | 0.88 | | | 1.36dl | |
| Uniform Delay, d1 | | 34.9 | | | 34.7 | 36.3 | | 21.3 | | | 24.0 | |
| Progression Factor | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 2.1 | | | 1.6 | 4.7 | | 8.3 | | | 47.2 | |
| Delay (s) | | 37.0 | | | 36.3 | 41.0 | | 29.6 | | | 71.2 | |
| Level of Service | | D | | | D | D | | C | | | E | |
| Approach Delay (s) | | 37.0 | | | 39.7 | | | 29.6 | | | 71.2 | |
| Approach LOS | | D | | | D | | | C | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 45.6 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.71 | | |
| Actuated Cycle Length (s) | 100.0 | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 79.2% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group

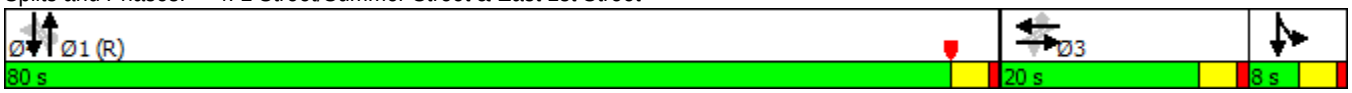


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 54 | 64 | 43 | 28 | 108 | 335 | 43 | 801 | 55 | 127 | 419 | 97 |
| Future Volume (vph) | 54 | 64 | 43 | 28 | 108 | 335 | 43 | 801 | 55 | 127 | 419 | 97 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 15 | 12 | 12 | 10 | 10 | 12 | 9 | 9 | 12 | 12 | 12 |
| Storage Length (ft) | 0 | | 0 | 0 | | 100 | 100 | | 0 | 100 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 0 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | 0.97 | | | 0.99 | 0.95 | | 0.99 | | 0.97 | 0.94 | |
| Frt | | 0.964 | | | | 0.850 | | 0.991 | | | 0.972 | |
| Flt Protected | | 0.984 | | | 0.990 | | | 0.998 | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1612 | 0 | 0 | 1515 | 1343 | 0 | 2748 | 0 | 1413 | 1501 | 0 |
| Flt Permitted | | 0.579 | | | 0.832 | | | 0.593 | | 0.266 | | |
| Satd. Flow (perm) | 0 | 942 | 0 | 0 | 1266 | 1281 | 0 | 1633 | 0 | 385 | 1501 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 14 | | | | 234 | | 15 | | | 35 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 540 | | | 576 | | | 340 | | | 355 | |
| Travel Time (s) | | 12.3 | | | 13.1 | | | 7.7 | | | 8.1 | |
| Confl. Peds. (#/hr) | 16 | | 17 | 17 | | 16 | 104 | | 44 | 44 | | 104 |
| Confl. Bikes (#/hr) | | | 2 | | | 2 | | | 11 | | | 2 |
| Peak Hour Factor | 0.84 | 0.84 | 0.84 | 0.83 | 0.83 | 0.83 | 0.94 | 0.94 | 0.94 | 0.91 | 0.91 | 0.91 |
| Heavy Vehicles (%) | 12% | 6% | 7% | 17% | 1% | 1% | 2% | 2% | 38% | 15% | 3% | 8% |
| Adj. Flow (vph) | 64 | 76 | 51 | 34 | 130 | 404 | 46 | 852 | 59 | 140 | 460 | 107 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 191 | 0 | 0 | 164 | 404 | 0 | 957 | 0 | 140 | 567 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.01 | 1.14 | 1.14 | 1.25 | 1.25 | 1.14 | 1.30 | 1.30 | 1.14 | 1.14 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | 20 | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | 20 | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | Perm | Perm | NA | | D.P+P | NA | |
| Protected Phases | | 3 | | | 3 | | | 1 | | 4 | 1 4 | |
| Permitted Phases | 3 | | | 3 | | 3 | 1 | | | 1 | | |
| Detector Phase | 3 | 3 | | 3 | 3 | 3 | 1 | 1 | | 4 | 1 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 10.0 | 10.0 | | 4.0 | | |
| Minimum Split (s) | 20.0 | 20.0 | | 20.0 | 20.0 | 20.0 | 22.0 | 22.0 | | 8.0 | | |
| Total Split (s) | 20.0 | 20.0 | | 20.0 | 20.0 | 20.0 | 80.0 | 80.0 | | 8.0 | | |
| Total Split (%) | 18.5% | 18.5% | | 18.5% | 18.5% | 18.5% | 74.1% | 74.1% | | 7.4% | | |
| Maximum Green (s) | 16.0 | 16.0 | | 16.0 | 16.0 | 16.0 | 76.0 | 76.0 | | 4.0 | | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | | 1.0 | | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | 0.0 | | 0.0 | | 0.0 | | |
| Total Lost Time (s) | | 4.0 | | | 4.0 | 4.0 | | 4.0 | | 4.0 | | |
| Lead/Lag | Lead | Lead | | Lead | Lead | Lead | | | | Lag | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 2.0 | | |
| Recall Mode | Max | Max | | Max | Max | Max | C-Max | C-Max | | None | | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | | | |
| Flash Dont Walk (s) | 9.0 | 9.0 | | 9.0 | 9.0 | 9.0 | 11.0 | 11.0 | | | | |
| Pedestrian Calls (#/hr) | 60 | 60 | | 60 | 60 | 60 | 60 | 60 | | | | |
| Act Effct Green (s) | | 16.0 | | | 16.0 | 16.0 | | 76.0 | | 80.0 | 84.0 | |
| Actuated g/C Ratio | | 0.15 | | | 0.15 | 0.15 | | 0.70 | | 0.74 | 0.78 | |
| v/c Ratio | | 1.26 | | | 0.88 | 1.04 | | 0.83 | | 0.43 | 0.48 | |
| Control Delay | | 197.8 | | | 86.4 | 76.1 | | 19.3 | | 7.5 | 5.5 | |
| Queue Delay | | 0.0 | | | 0.0 | 0.0 | | 0.0 | | 0.0 | 2.5 | |
| Total Delay | | 197.8 | | | 86.4 | 76.1 | | 19.3 | | 7.5 | 8.0 | |
| LOS | | F | | | F | E | | B | | A | A | |
| Approach Delay | | 197.8 | | | 79.1 | | | 19.3 | | | 7.9 | |
| Approach LOS | | F | | | E | | | B | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 108 | | | |
| Actuated Cycle Length: 108 | | | |
| Offset: 0 (0%), Referenced to phase 1:NBSB, Start of Yellow | | | |
| Natural Cycle: 80 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 1.26 | | | |
| Intersection Signal Delay: 44.1 | | Intersection LOS: D | |
| Intersection Capacity Utilization 87.4% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 4: L Street/Summer Street & East 1st Street



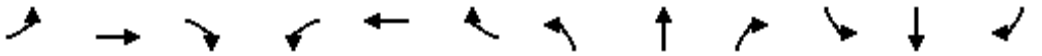


| Lane Group | EBT | WBT | WBR | NBT | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 191 | 164 | 404 | 957 | 140 | 567 |
| v/c Ratio | 1.26 | 0.88 | 1.04 | 0.83 | 0.43 | 0.48 |
| Control Delay | 197.8 | 86.4 | 76.1 | 19.3 | 7.5 | 5.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.5 |
| Total Delay | 197.8 | 86.4 | 76.1 | 19.3 | 7.5 | 8.0 |
| Queue Length 50th (ft) | ~159 | 112 | ~154 | 215 | 20 | 105 |
| Queue Length 95th (ft) | #275 | #207 | #286 | 339 | 34 | 160 |
| Internal Link Dist (ft) | 460 | 496 | | 260 | | 275 |
| Turn Bay Length (ft) | | | 100 | | 100 | |
| Base Capacity (vph) | 151 | 187 | 389 | 1153 | 323 | 1175 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 466 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 1.26 | 0.88 | 1.04 | 0.83 | 0.43 | 0.80 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

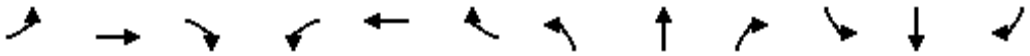
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 54 | 64 | 43 | 28 | 108 | 335 | 43 | 801 | 55 | 127 | 419 | 97 |
| Future Volume (vph) | 54 | 64 | 43 | 28 | 108 | 335 | 43 | 801 | 55 | 127 | 419 | 97 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 15 | 12 | 12 | 10 | 10 | 12 | 9 | 9 | 12 | 12 | 12 |
| Total Lost time (s) | | 4.0 | | | 4.0 | 4.0 | | 4.0 | | 4.0 | 4.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | 1.00 | | 0.95 | | 1.00 | 1.00 | |
| Frpb, ped/bikes | | 0.98 | | | 1.00 | 0.95 | | 0.99 | | 1.00 | 0.94 | |
| Flpb, ped/bikes | | 0.99 | | | 0.99 | 1.00 | | 1.00 | | 0.99 | 1.00 | |
| Frt | | 0.96 | | | 1.00 | 0.85 | | 0.99 | | 1.00 | 0.97 | |
| Flt Protected | | 0.98 | | | 0.99 | 1.00 | | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 1600 | | | 1506 | 1281 | | 2747 | | 1404 | 1500 | |
| Flt Permitted | | 0.58 | | | 0.83 | 1.00 | | 0.59 | | 0.27 | 1.00 | |
| Satd. Flow (perm) | | 941 | | | 1265 | 1281 | | 1633 | | 393 | 1500 | |
| Peak-hour factor, PHF | 0.84 | 0.84 | 0.84 | 0.83 | 0.83 | 0.83 | 0.94 | 0.94 | 0.94 | 0.91 | 0.91 | 0.91 |
| Adj. Flow (vph) | 64 | 76 | 51 | 34 | 130 | 404 | 46 | 852 | 59 | 140 | 460 | 107 |
| RTOR Reduction (vph) | 0 | 12 | 0 | 0 | 0 | 199 | 0 | 4 | 0 | 0 | 8 | 0 |
| Lane Group Flow (vph) | 0 | 179 | 0 | 0 | 164 | 205 | 0 | 953 | 0 | 140 | 559 | 0 |
| Confl. Peds. (#/hr) | 16 | | 17 | 17 | | 16 | 104 | | 44 | 44 | | 104 |
| Confl. Bikes (#/hr) | | | 2 | | | 2 | | | 11 | | | 2 |
| Heavy Vehicles (%) | 12% | 6% | 7% | 17% | 1% | 1% | 2% | 2% | 38% | 15% | 3% | 8% |
| Turn Type | Perm | NA | | Perm | NA | Perm | Perm | NA | | D.P+P | NA | |
| Protected Phases | | 3 | | | 3 | | | 1 | | 4 | 1 4 | |
| Permitted Phases | 3 | | | 3 | | 3 | 1 | | | 1 | | |
| Actuated Green, G (s) | | 16.0 | | | 16.0 | 16.0 | | 76.0 | | 80.0 | 84.0 | |
| Effective Green, g (s) | | 16.0 | | | 16.0 | 16.0 | | 76.0 | | 80.0 | 84.0 | |
| Actuated g/C Ratio | | 0.15 | | | 0.15 | 0.15 | | 0.70 | | 0.74 | 0.78 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | 4.0 | | 4.0 | | 4.0 | | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | 3.0 | | 3.0 | | 2.0 | | |
| Lane Grp Cap (vph) | | 139 | | | 187 | 189 | | 1149 | | 328 | 1166 | |
| v/s Ratio Prot | | | | | | | | | | 0.02 | c0.37 | |
| v/s Ratio Perm | | c0.19 | | | 0.13 | 0.16 | | c0.58 | | 0.30 | | |
| v/c Ratio | | 1.29 | | | 0.88 | 1.08 | | 0.83 | | 0.43 | 0.48 | |
| Uniform Delay, d1 | | 46.0 | | | 45.0 | 46.0 | | 11.4 | | 4.5 | 4.3 | |
| Progression Factor | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 173.1 | | | 39.9 | 89.3 | | 7.0 | | 0.3 | 0.1 | |
| Delay (s) | | 219.1 | | | 84.9 | 135.3 | | 18.3 | | 4.8 | 4.4 | |
| Level of Service | | F | | | F | F | | B | | A | A | |
| Approach Delay (s) | | 219.1 | | | 120.7 | | | 18.3 | | | 4.5 | |
| Approach LOS | | F | | | F | | | B | | | A | |

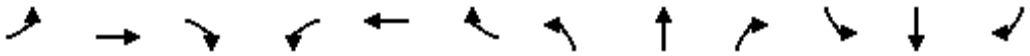
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 54.1 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.90 | | |
| Actuated Cycle Length (s) | 108.0 | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 87.4% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 16 | 5 | 21 | 11 | 16 | 62 | 43 | 799 | 32 | 11 | 469 | 21 |
| Future Volume (vph) | 16 | 5 | 21 | 11 | 16 | 62 | 43 | 799 | 32 | 11 | 469 | 21 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 16 | 12 | 12 | 16 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.932 | | | 0.906 | | | 0.995 | | | 0.994 | |
| Flt Protected | | 0.981 | | | 0.994 | | | 0.998 | | | 0.999 | |
| Satd. Flow (prot) | 0 | 1459 | 0 | 0 | 1402 | 0 | 0 | 1838 | 0 | 0 | 1851 | 0 |
| Flt Permitted | | 0.981 | | | 0.994 | | | 0.998 | | | 0.999 | |
| Satd. Flow (perm) | 0 | 1459 | 0 | 0 | 1402 | 0 | 0 | 1838 | 0 | 0 | 1851 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 429 | | | 453 | | | 298 | | | 340 | |
| Travel Time (s) | | 9.8 | | | 10.3 | | | 6.8 | | | 7.7 | |
| Confl. Peds. (#/hr) | 15 | | 20 | 20 | | 15 | 90 | | 41 | 41 | | 90 |
| Confl. Bikes (#/hr) | | | | | | 1 | | | 9 | | | |
| Peak Hour Factor | 0.57 | 0.57 | 0.57 | 0.88 | 0.88 | 0.88 | 0.94 | 0.94 | 0.94 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 10% | 7% | 0% | 3% | 4% | 25% | 0% | 4% | 5% |
| Adj. Flow (vph) | 28 | 9 | 37 | 13 | 18 | 70 | 46 | 850 | 34 | 11 | 489 | 22 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 74 | 0 | 0 | 101 | 0 | 0 | 930 | 0 | 0 | 522 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.25 | 1.14 | 1.14 | 1.25 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 0.97 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 90.0% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 16 | 5 | 21 | 11 | 16 | 62 | 43 | 799 | 32 | 11 | 469 | 21 |
| Future Volume (Veh/h) | 16 | 5 | 21 | 11 | 16 | 62 | 43 | 799 | 32 | 11 | 469 | 21 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.57 | 0.57 | 0.57 | 0.88 | 0.88 | 0.88 | 0.94 | 0.94 | 0.94 | 0.96 | 0.96 | 0.96 |
| Hourly flow rate (vph) | 28 | 9 | 37 | 13 | 18 | 70 | 46 | 850 | 34 | 11 | 489 | 22 |
| Pedestrians | | 90 | | | 41 | | | 20 | | | 15 | |
| Lane Width (ft) | | 10.0 | | | 10.0 | | | 16.0 | | | 16.0 | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Percent Blockage | | 6 | | | 3 | | | 2 | | | 2 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | 602 | | | 340 | |
| pX, platoon unblocked | 0.78 | 0.78 | 0.91 | 0.78 | 0.78 | 0.73 | 0.91 | | | 0.73 | | |
| vC, conflicting volume | 1665 | 1629 | 610 | 1584 | 1623 | 923 | 601 | | | 925 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1443 | 1397 | 519 | 1338 | 1389 | 711 | 509 | | | 713 | | |
| tC, single (s) | *4.0 | *4.0 | *5.0 | *4.0 | *4.0 | *4.0 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.6 | 4.1 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 86 | 96 | 93 | 95 | 93 | 85 | 95 | | | 98 | | |
| cM capacity (veh/h) | 196 | 248 | 554 | 243 | 248 | 471 | 894 | | | 636 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 74 | 101 | 930 | 522 |
| Volume Left | 28 | 13 | 46 | 11 |
| Volume Right | 37 | 70 | 34 | 22 |
| cSH | 301 | 367 | 894 | 636 |
| Volume to Capacity | 0.25 | 0.27 | 0.05 | 0.02 |
| Queue Length 95th (ft) | 24 | 28 | 4 | 1 |
| Control Delay (s) | 20.8 | 18.5 | 1.4 | 0.5 |
| Lane LOS | C | C | A | A |
| Approach Delay (s) | 20.8 | 18.5 | 1.4 | 0.5 |
| Approach LOS | C | C | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 3.0 | | | |
| Intersection Capacity Utilization | 90.0% | ICU Level of Service | E | |
| Analysis Period (min) | 15 | | | |

* User Entered Value



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBU | NBL | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 17 | 0 | 21 | 5 | 16 | 32 | 5 | 21 | 798 | 32 | 16 | 457 |
| Future Volume (vph) | 17 | 0 | 21 | 5 | 16 | 32 | 5 | 21 | 798 | 32 | 16 | 457 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 12 | 16 | 12 | 12 | 16 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.925 | | | 0.918 | | | | 0.995 | | | 0.994 |
| Flt Protected | | 0.978 | | | 0.996 | | | | 0.999 | | | 0.998 |
| Satd. Flow (prot) | 0 | 1258 | 0 | 0 | 1313 | 0 | 0 | 0 | 1855 | 0 | 0 | 1834 |
| Flt Permitted | | 0.978 | | | 0.996 | | | | 0.999 | | | 0.998 |
| Satd. Flow (perm) | 0 | 1258 | 0 | 0 | 1313 | 0 | 0 | 0 | 1855 | 0 | 0 | 1834 |
| Link Speed (mph) | | 30 | | | 30 | | | | 30 | | | 30 |
| Link Distance (ft) | | 638 | | | 716 | | | | 304 | | | 298 |
| Travel Time (s) | | 14.5 | | | 16.3 | | | | 6.9 | | | 6.8 |
| Confl. Peds. (#/hr) | 22 | | 31 | 31 | | 22 | | 75 | | 46 | 46 | |
| Confl. Bikes (#/hr) | | | | | | | | | | 9 | | |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.67 | 0.67 | 0.67 | 0.92 | 0.94 | 0.94 | 0.94 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 0% | 0% | 6% | 0% | 0% | 0% | 0% | 5% | 4% | 0% | 6% | 5% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | | | | | |
| Adj. Flow (vph) | 20 | 0 | 25 | 7 | 24 | 48 | 5 | 22 | 849 | 34 | 17 | 491 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 45 | 0 | 0 | 79 | 0 | 0 | 0 | 910 | 0 | 0 | 532 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | R NA | Left | Left | Right | Left | Left |
| Median Width(ft) | | 0 | | | 0 | | | | 0 | | | 0 |
| Link Offset(ft) | | 0 | | | 0 | | | | 0 | | | 0 |
| Crosswalk Width(ft) | | 16 | | | 16 | | | | 16 | | | 16 |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 0.97 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 9 | 15 | | 9 | 15 | |
| Sign Control | | Stop | | | Stop | | | | Free | | | Free |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 79.6% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |



| Lane Group | SBR |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | 22 |
| Future Volume (vph) | 22 |
| Ideal Flow (vphpl) | 1900 |
| Lane Width (ft) | 12 |
| Lane Util. Factor | 1.00 |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | 0 |
| Flt Permitted | |
| Satd. Flow (perm) | 0 |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | 75 |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | 0.93 |
| Heavy Vehicles (%) | 0% |
| Parking (#/hr) | |
| Adj. Flow (vph) | 24 |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | 0 |
| Enter Blocked Intersection | No |
| Lane Alignment | Right |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | 1.14 |
| Turning Speed (mph) | 9 |
| Sign Control | |

| Intersection Summary |
|---|



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBU | NBL | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 17 | 0 | 21 | 5 | 16 | 32 | 5 | 21 | 798 | 32 | 16 | 457 |
| Future Volume (Veh/h) | 17 | 0 | 21 | 5 | 16 | 32 | 5 | 21 | 798 | 32 | 16 | 457 |
| Sign Control | | Stop | | | Stop | | | | Free | | | Free |
| Grade | | 0% | | | 0% | | | | 0% | | | 0% |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.67 | 0.67 | 0.67 | 0.92 | 0.94 | 0.94 | 0.94 | 0.93 | 0.93 |
| Hourly flow rate (vph) | 20 | 0 | 25 | 7 | 24 | 48 | 0 | 22 | 849 | 34 | 17 | 491 |
| Pedestrians | | 75 | | | 46 | | | | 31 | | | 22 |
| Lane Width (ft) | | 10.0 | | | 10.0 | | | | 16.0 | | | 16.0 |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | | 4.0 | | | 4.0 |
| Percent Blockage | | 5 | | | 3 | | | | 3 | | | 2 |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | | None | | | None |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | 304 | | | 638 |
| pX, platoon unblocked | 0.75 | 0.75 | 0.98 | 0.75 | 0.75 | 0.74 | 0.00 | 0.98 | | | 0.74 | |
| vC, conflicting volume | 1604 | 1585 | 609 | 1549 | 1580 | 934 | 0 | 590 | | | 929 | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1564 | 1538 | 586 | 1491 | 1532 | 737 | 0 | 567 | | | 730 | |
| tC, single (s) | *4.0 | 6.5 | *5.0 | *4.0 | *4.0 | *4.0 | 0.0 | 4.1 | | | 4.2 | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.4 | 3.5 | 4.0 | 3.3 | 0.0 | 2.2 | | | 2.3 | |
| p0 queue free % | 89 | 100 | 95 | 97 | 89 | 90 | 0 | 98 | | | 97 | |
| cM capacity (veh/h) | 182 | 77 | 551 | 225 | 224 | 463 | 0 | 915 | | | 614 | |

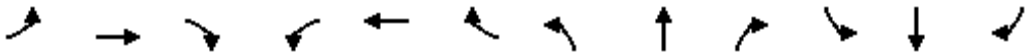
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 45 | 79 | 905 | 532 |
| Volume Left | 20 | 7 | 22 | 17 |
| Volume Right | 25 | 48 | 34 | 24 |
| cSH | 290 | 327 | 915 | 614 |
| Volume to Capacity | 0.16 | 0.24 | 0.02 | 0.03 |
| Queue Length 95th (ft) | 14 | 23 | 2 | 2 |
| Control Delay (s) | 19.7 | 19.5 | 0.7 | 0.8 |
| Lane LOS | C | C | A | A |
| Approach Delay (s) | 19.7 | 19.5 | 0.7 | 0.8 |
| Approach LOS | C | C | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 2.2 | | | |
| Intersection Capacity Utilization | 79.6% | ICU Level of Service | D | |
| Analysis Period (min) | 15 | | | |

* User Entered Value

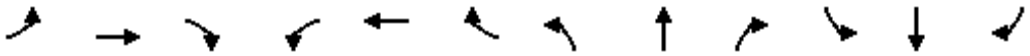


| Movement | SBR |
|---|---|
| Lane Configurations | |
| Traffic Volume (veh/h) | 22 |
| Future Volume (Veh/h) | 22 |
| Sign Control | |
| Grade | |
| Peak Hour Factor | 0.93 |
| Hourly flow rate (vph) | 24 |
| Pedestrians | |
| Lane Width (ft) | |
| Walking Speed (ft/s) | |
| Percent Blockage | |
| Right turn flare (veh) | |
| Median type | |
| Median storage veh) | |
| Upstream signal (ft) | |
| pX, platoon unblocked | |
| vC, conflicting volume | |
| vC1, stage 1 conf vol | |
| vC2, stage 2 conf vol | |
| vCu, unblocked vol | |
| tC, single (s) | |
| tC, 2 stage (s) | |
| tF (s) | |
| p0 queue free % | |
| cM capacity (veh/h) | |
| Direction, Lane # | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 90 | 101 | 48 | 32 | 155 | 72 | 69 | 701 | 11 | 54 | 327 | 97 |
| Future Volume (vph) | 90 | 101 | 48 | 32 | 155 | 72 | 69 | 701 | 11 | 54 | 327 | 97 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 11 | 12 | 12 | 16 | 12 | 10 | 10 | 10 | 10 | 10 | 10 |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 0 | | 250 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 0 | | 1 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 0.95 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Ped Bike Factor | | 0.93 | | | 0.92 | | | 1.00 | | | 0.98 | |
| Frt | | 0.970 | | | 0.963 | | | 0.998 | | | 0.970 | |
| Flt Protected | | 0.981 | | | 0.994 | | | 0.996 | | | 0.994 | |
| Satd. Flow (prot) | 0 | 2518 | 0 | 0 | 1375 | 0 | 0 | 2827 | 0 | 0 | 2609 | 0 |
| Flt Permitted | | 0.606 | | | 0.929 | | | 0.771 | | | 0.663 | |
| Satd. Flow (perm) | 0 | 1498 | 0 | 0 | 1266 | 0 | 0 | 2182 | 0 | 0 | 1735 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 642 | | | 138 | | | 618 | | | 304 | |
| Travel Time (s) | | 14.6 | | | 3.1 | | | 14.0 | | | 6.9 | |
| Confl. Peds. (#/hr) | 104 | | 84 | 84 | | 104 | 117 | | 118 | 118 | | 117 |
| Confl. Bikes (#/hr) | | | | | | 3 | | | 9 | | | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.97 | 0.97 | 0.97 | 0.95 | 0.95 | 0.95 | 0.85 | 0.85 | 0.85 |
| Heavy Vehicles (%) | 16% | 7% | 0% | 6% | 10% | 25% | 3% | 1% | 0% | 2% | 3% | 10% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Adj. Flow (vph) | 100 | 112 | 53 | 33 | 160 | 74 | 73 | 738 | 12 | 64 | 385 | 114 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 265 | 0 | 0 | 267 | 0 | 0 | 823 | 0 | 0 | 563 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.27 | 1.14 | 1.14 | 1.12 | 1.14 | 1.25 | 1.33 | 1.25 | 1.25 | 1.33 | 1.25 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |

| Lane Group | Ø2 |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | |
| Future Volume (vph) | |
| Ideal Flow (vphpl) | |
| Lane Width (ft) | |
| Storage Length (ft) | |
| Storage Lanes | |
| Taper Length (ft) | |
| Lane Util. Factor | |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Right Turn on Red | |
| Satd. Flow (RTOR) | |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | |
| Heavy Vehicles (%) | |
| Parking (#/hr) | |
| Adj. Flow (vph) | |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | |
| Enter Blocked Intersection | |
| Lane Alignment | |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | |
| Turning Speed (mph) | |
| Number of Detectors | |
| Detector Template | |
| Leading Detector (ft) | |
| Trailing Detector (ft) | |
| Detector 1 Position(ft) | |
| Detector 1 Size(ft) | |
| Detector 1 Type | |
| Detector 1 Channel | |
| Detector 1 Extend (s) | |
| Detector 1 Queue (s) | |
| Detector 1 Delay (s) | |
| Detector 2 Position(ft) | |
| Detector 2 Size(ft) | |

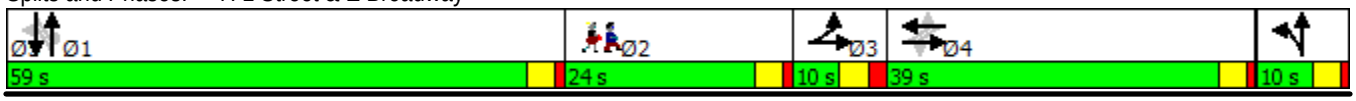


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | D.P+P | NA | | Perm | NA | | D.P+P | NA | | Perm | NA | |
| Protected Phases | 3 | 3 4 | | | 4 | | 5 | 1 5 | | | 1 | |
| Permitted Phases | 4 | | | 4 | | | 1 | | | 1 | | |
| Detector Phase | 3 | 3 4 | | 4 | 4 | | 5 | 1 5 | | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | | | 10.0 | 10.0 | | 6.0 | | | 30.0 | 30.0 | |
| Minimum Split (s) | 10.0 | | | 14.0 | 14.0 | | 10.0 | | | 34.0 | 34.0 | |
| Total Split (s) | 10.0 | | | 39.0 | 39.0 | | 10.0 | | | 59.0 | 59.0 | |
| Total Split (%) | 7.0% | | | 27.5% | 27.5% | | 7.0% | | | 41.5% | 41.5% | |
| Maximum Green (s) | 5.0 | | | 35.0 | 35.0 | | 6.0 | | | 55.0 | 55.0 | |
| Yellow Time (s) | 3.0 | | | 3.0 | 3.0 | | 3.0 | | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | | | 1.0 | 1.0 | | 1.0 | | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | | | | | 0.0 | | | | | | 0.0 | |
| Total Lost Time (s) | | | | | 4.0 | | | | | | 4.0 | |
| Lead/Lag | Lead | | | Lag | Lag | | | | | Lead | Lead | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | | | 2.0 | 2.0 | | 2.0 | | | 2.0 | 2.0 | |
| Recall Mode | Max | | | Max | Max | | Max | | | Max | Max | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 39.0 | | | 35.0 | | | 61.0 | | | 55.0 | |
| Actuated g/C Ratio | | 0.27 | | | 0.25 | | | 0.43 | | | 0.39 | |
| v/c Ratio | | 0.59 | | | 0.86 | | | 0.85 | | | 0.84 | |
| Control Delay | | 47.8 | | | 76.4 | | | 45.2 | | | 52.1 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 47.8 | | | 76.4 | | | 45.2 | | | 52.1 | |
| LOS | | D | | | E | | | D | | | D | |
| Approach Delay | | 47.8 | | | 76.4 | | | 45.2 | | | 52.1 | |
| Approach LOS | | D | | | E | | | D | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 142 | | | |
| Actuated Cycle Length: 142 | | | |
| Natural Cycle: 105 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 0.86 | | | |
| Intersection Signal Delay: 51.9 | | Intersection LOS: D | |
| Intersection Capacity Utilization 90.6% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |

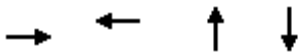
Description: L Street is very wide and during peak hours vehicles form two lanes.

Splits and Phases: 7: L Street & E Broadway



| Lane Group | Ø2 |
|---|---|
| Detector 2 Type | |
| Detector 2 Channel | |
| Detector 2 Extend (s) | |
| Turn Type | |
| Protected Phases | 2 |
| Permitted Phases | |
| Detector Phase | |
| Switch Phase | |
| Minimum Initial (s) | 4.0 |
| Minimum Split (s) | 24.0 |
| Total Split (s) | 24.0 |
| Total Split (%) | 17% |
| Maximum Green (s) | 20.0 |
| Yellow Time (s) | 3.0 |
| All-Red Time (s) | 1.0 |
| Lost Time Adjust (s) | |
| Total Lost Time (s) | |
| Lead/Lag | Lag |
| Lead-Lag Optimize? | |
| Vehicle Extension (s) | 2.0 |
| Recall Mode | None |
| Walk Time (s) | 8.0 |
| Flash Dont Walk (s) | 12.0 |
| Pedestrian Calls (#/hr) | 121 |
| Act Effct Green (s) | |
| Actuated g/C Ratio | |
| v/c Ratio | |
| Control Delay | |
| Queue Delay | |
| Total Delay | |
| LOS | |
| Approach Delay | |
| Approach LOS | |

| Intersection Summary |
|---|

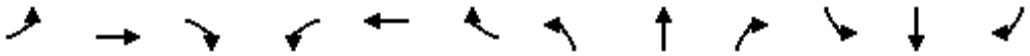


| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 265 | 267 | 823 | 563 |
| v/c Ratio | 0.59 | 0.86 | 0.85 | 0.84 |
| Control Delay | 47.8 | 76.4 | 45.2 | 52.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 47.8 | 76.4 | 45.2 | 52.1 |
| Queue Length 50th (ft) | 99 | 237 | 301 | 246 |
| Queue Length 95th (ft) | 141 | #395 | 374 | 304 |
| Internal Link Dist (ft) | 562 | 58 | 538 | 224 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 447 | 312 | 964 | 672 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.59 | 0.86 | 0.85 | 0.84 |

Intersection Summary

Description: L Street is very wide and during peak hours vehicles form two lanes.

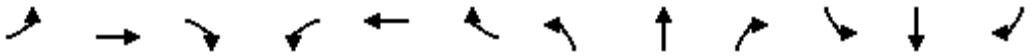
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 90 | 101 | 48 | 32 | 155 | 72 | 69 | 701 | 11 | 54 | 327 | 97 |
| Future Volume (vph) | 90 | 101 | 48 | 32 | 155 | 72 | 69 | 701 | 11 | 54 | 327 | 97 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 11 | 12 | 12 | 16 | 12 | 10 | 10 | 10 | 10 | 10 | 10 |
| Total Lost time (s) | | 5.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 0.95 | | | 1.00 | | | 0.95 | | | 0.95 | |
| Frpb, ped/bikes | | 0.97 | | | 0.94 | | | 1.00 | | | 0.98 | |
| Flpb, ped/bikes | | 0.98 | | | 0.99 | | | 1.00 | | | 1.00 | |
| Frt | | 0.97 | | | 0.96 | | | 1.00 | | | 0.97 | |
| Flt Protected | | 0.98 | | | 0.99 | | | 1.00 | | | 0.99 | |
| Satd. Flow (prot) | | 2465 | | | 1354 | | | 2819 | | | 2602 | |
| Flt Permitted | | 0.61 | | | 0.93 | | | 0.77 | | | 0.66 | |
| Satd. Flow (perm) | | 1521 | | | 1266 | | | 2184 | | | 1735 | |
| Peak-hour factor, PHF | 0.90 | 0.90 | 0.90 | 0.97 | 0.97 | 0.97 | 0.95 | 0.95 | 0.95 | 0.85 | 0.85 | 0.85 |
| Adj. Flow (vph) | 100 | 112 | 53 | 33 | 160 | 74 | 73 | 738 | 12 | 64 | 385 | 114 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 265 | 0 | 0 | 267 | 0 | 0 | 823 | 0 | 0 | 563 | 0 |
| Confl. Peds. (#/hr) | 104 | | 84 | 84 | | 104 | 117 | | 118 | 118 | | 117 |
| Confl. Bikes (#/hr) | | | | | | 3 | | | 9 | | | |
| Heavy Vehicles (%) | 16% | 7% | 0% | 6% | 10% | 25% | 3% | 1% | 0% | 2% | 3% | 10% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Turn Type | D.P+P | NA | | Perm | NA | | D.P+P | NA | | Perm | NA | |
| Protected Phases | 3 | 3 4 | | | 4 | | 5 | 1 5 | | | 1 | |
| Permitted Phases | 4 | | | 4 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 40.0 | | | 35.0 | | | 61.0 | | | 55.0 | |
| Effective Green, g (s) | | 40.0 | | | 35.0 | | | 61.0 | | | 55.0 | |
| Actuated g/C Ratio | | 0.28 | | | 0.25 | | | 0.43 | | | 0.39 | |
| Clearance Time (s) | | | | | 4.0 | | | | | | 4.0 | |
| Vehicle Extension (s) | | | | | 2.0 | | | | | | 2.0 | |
| Lane Grp Cap (vph) | | 461 | | | 312 | | | 965 | | | 672 | |
| v/s Ratio Prot | | c0.02 | | | | | | c0.04 | | | | |
| v/s Ratio Perm | | 0.14 | | | c0.21 | | | c0.33 | | | 0.32 | |
| v/c Ratio | | 0.57 | | | 0.86 | | | 0.85 | | | 0.84 | |
| Uniform Delay, d1 | | 43.7 | | | 51.1 | | | 36.5 | | | 39.5 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 5.1 | | | 24.8 | | | 9.5 | | | 11.9 | |
| Delay (s) | | 48.9 | | | 75.9 | | | 45.9 | | | 51.4 | |
| Level of Service | | D | | | E | | | D | | | D | |
| Approach Delay (s) | | 48.9 | | | 75.9 | | | 45.9 | | | 51.4 | |
| Approach LOS | | D | | | E | | | D | | | D | |

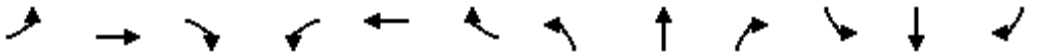
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 52.1 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.70 | | |
| Actuated Cycle Length (s) | 142.0 | Sum of lost time (s) | 21.0 |
| Intersection Capacity Utilization | 90.6% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |
| Description: L Street is very wide and during peak hours vehicles form two lanes. | | | |

c Critical Lane Group



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 27 | 129 | 0 | 0 | 236 | 5 | 128 | 11 | 27 | 5 | 0 | 59 |
| Future Volume (vph) | 27 | 129 | 0 | 0 | 236 | 5 | 128 | 11 | 27 | 5 | 0 | 59 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 13 | 12 | 10 | 10 | 12 | 12 | 16 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | | | 0.997 | | | 0.892 | | | 0.876 | |
| Flt Protected | | 0.991 | | | | | 0.950 | | | | 0.996 | |
| Satd. Flow (prot) | 0 | 1378 | 0 | 0 | 1548 | 0 | 1325 | 1243 | 0 | 0 | 1215 | 0 |
| Flt Permitted | | 0.991 | | | | | 0.950 | | | | 0.996 | |
| Satd. Flow (perm) | 0 | 1378 | 0 | 0 | 1548 | 0 | 1325 | 1243 | 0 | 0 | 1215 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 1822 | | | 540 | | | 382 | | | 350 | |
| Travel Time (s) | | 41.4 | | | 12.3 | | | 8.7 | | | 8.0 | |
| Confl. Peds. (#/hr) | 8 | | 18 | 18 | | 8 | 13 | | 28 | 28 | | 13 |
| Confl. Bikes (#/hr) | | | 1 | | | 3 | | | 1 | | | |
| Peak Hour Factor | 0.70 | 0.70 | 0.70 | 0.68 | 0.68 | 0.68 | 0.71 | 0.71 | 0.71 | 0.50 | 0.50 | 0.50 |
| Heavy Vehicles (%) | 9% | 11% | 2% | 0% | 2% | 25% | 3% | 11% | 0% | 17% | 0% | 26% |
| Parking (#/hr) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Adj. Flow (vph) | 39 | 184 | 0 | 0 | 347 | 7 | 180 | 15 | 38 | 10 | 0 | 118 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 223 | 0 | 0 | 354 | 0 | 180 | 53 | 0 | 0 | 128 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 10 | | | 10 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.30 | 1.14 | 1.14 | 1.25 | 1.14 | 1.42 | 1.42 | 1.14 | 1.14 | 1.12 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 49.8% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

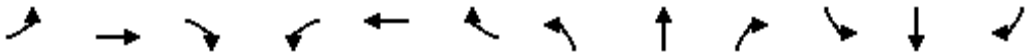


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 27 | 129 | 0 | 0 | 236 | 5 | 128 | 11 | 27 | 5 | 0 | 59 |
| Future Volume (Veh/h) | 27 | 129 | 0 | 0 | 236 | 5 | 128 | 11 | 27 | 5 | 0 | 59 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.70 | 0.70 | 0.70 | 0.68 | 0.68 | 0.68 | 0.71 | 0.71 | 0.71 | 0.50 | 0.50 | 0.50 |
| Hourly flow rate (vph) | 39 | 184 | 0 | 0 | 347 | 7 | 180 | 15 | 38 | 10 | 0 | 118 |
| Pedestrians | | 13 | | | 28 | | | 18 | | | 8 | |
| Lane Width (ft) | | 12.0 | | | 13.0 | | | 10.0 | | | 16.0 | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Percent Blockage | | 1 | | | 3 | | | 1 | | | 1 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 540 | | | | | | | |
| pX, platoon unblocked | 0.96 | | | | | | 0.96 | 0.96 | | 0.96 | 0.96 | 0.96 |
| vC, conflicting volume | 362 | | | 202 | | | 762 | 642 | 230 | 694 | 638 | 372 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 312 | | | 202 | | | 729 | 604 | 230 | 658 | 600 | 322 |
| tC, single (s) | 4.2 | | | 4.1 | | | *6.5 | 6.6 | 6.2 | 7.3 | 6.5 | 6.5 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.3 | | | 2.2 | | | 3.5 | 4.1 | 3.3 | 3.7 | 4.0 | 3.5 |
| p0 queue free % | 97 | | | 100 | | | 35 | 96 | 95 | 97 | 100 | 81 |
| cM capacity (veh/h) | 1149 | | | 1365 | | | 279 | 363 | 784 | 292 | 378 | 626 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | SB 1 |
|---|---|---|---|---|---|
| Volume Total | 223 | 354 | 180 | 53 | 128 |
| Volume Left | 39 | 0 | 180 | 0 | 10 |
| Volume Right | 0 | 7 | 0 | 38 | 118 |
| cSH | 1149 | 1700 | 279 | 590 | 575 |
| Volume to Capacity | 0.03 | 0.21 | 0.65 | 0.09 | 0.22 |
| Queue Length 95th (ft) | 3 | 0 | 103 | 7 | 21 |
| Control Delay (s) | 1.7 | 0.0 | 38.8 | 11.7 | 13.0 |
| Lane LOS | A | | E | B | B |
| Approach Delay (s) | 1.7 | 0.0 | 32.6 | | 13.0 |
| Approach LOS | | | D | | B |

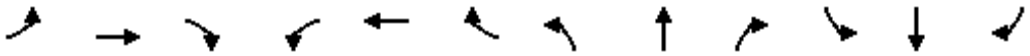
| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 10.3 | | | |
| Intersection Capacity Utilization | 49.8% | ICU Level of Service | | A |
| Analysis Period (min) | 15 | | | |

* User Entered Value



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 34 | 197 | 0 | 0 | 344 | 0 | 98 | 0 | 11 | 0 | 0 | 30 |
| Future Volume (vph) | 34 | 197 | 0 | 0 | 344 | 0 | 98 | 0 | 11 | 0 | 0 | 30 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 13 | 12 | 12 | 13 | 12 | 10 | 12 | 12 | 12 | 12 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | | | | | | 0.986 | | | 0.865 | |
| Flt Protected | | 0.993 | | | | | | 0.957 | | | | |
| Satd. Flow (prot) | 0 | 1553 | 0 | 0 | 1750 | 0 | 0 | 1585 | 0 | 0 | 1479 | 0 |
| Flt Permitted | | 0.993 | | | | | | 0.957 | | | | |
| Satd. Flow (perm) | 0 | 1553 | 0 | 0 | 1750 | 0 | 0 | 1585 | 0 | 0 | 1479 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 576 | | | 561 | | | 457 | | | 201 | |
| Travel Time (s) | | 13.1 | | | 12.8 | | | 10.4 | | | 4.6 | |
| Confl. Peds. (#/hr) | | | 13 | 13 | | | 4 | | | | | |
| Confl. Bikes (#/hr) | | | 1 | | | | | | 3 | | | |
| Peak Hour Factor | 0.92 | 0.84 | 0.84 | 0.77 | 0.77 | 0.92 | 0.70 | 0.92 | 0.70 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 0% | 15% | 0% | 0% | 1% | 0% | 2% | 0% | 0% | 0% | 0% | 0% |
| Adj. Flow (vph) | 37 | 235 | 0 | 0 | 447 | 0 | 140 | 0 | 16 | 0 | 0 | 33 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 272 | 0 | 0 | 447 | 0 | 0 | 156 | 0 | 0 | 33 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.10 | 1.14 | 1.14 | 1.10 | 1.14 | 1.25 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |

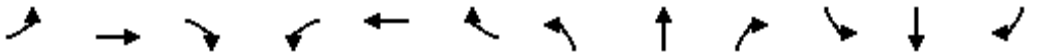
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 57.2% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 34 | 197 | 0 | 0 | 344 | 0 | 98 | 0 | 11 | 0 | 0 | 30 |
| Future Volume (Veh/h) | 34 | 197 | 0 | 0 | 344 | 0 | 98 | 0 | 11 | 0 | 0 | 30 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.92 | 0.84 | 0.84 | 0.77 | 0.77 | 0.92 | 0.70 | 0.92 | 0.70 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 37 | 235 | 0 | 0 | 447 | 0 | 140 | 0 | 16 | 0 | 0 | 33 |
| Pedestrians | | 4 | | | | | | 13 | | | | |
| Lane Width (ft) | | 13.0 | | | | | | 12.0 | | | | |
| Walking Speed (ft/s) | | 4.0 | | | | | | 4.0 | | | | |
| Percent Blockage | | 0 | | | | | | 1 | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 576 | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 447 | | | 248 | | | 806 | 769 | 248 | 772 | 769 | 451 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 447 | | | 248 | | | 806 | 769 | 248 | 772 | 769 | 451 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 97 | | | 100 | | | 48 | 100 | 98 | 100 | 100 | 95 |
| cM capacity (veh/h) | 1124 | | | 1315 | | | 271 | 319 | 787 | 302 | 319 | 610 |

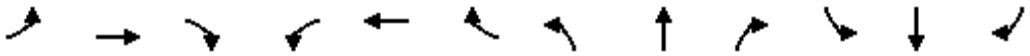
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 272 | 447 | 156 | 33 |
| Volume Left | 37 | 0 | 140 | 0 |
| Volume Right | 0 | 0 | 16 | 33 |
| cSH | 1124 | 1700 | 290 | 610 |
| Volume to Capacity | 0.03 | 0.26 | 0.54 | 0.05 |
| Queue Length 95th (ft) | 3 | 0 | 74 | 4 |
| Control Delay (s) | 1.4 | 0.0 | 30.9 | 11.2 |
| Lane LOS | A | | D | B |
| Approach Delay (s) | 1.4 | 0.0 | 30.9 | 11.2 |
| Approach LOS | | | D | B |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 6.1 | | | |
| Intersection Capacity Utilization | 57.2% | ICU Level of Service | B | |
| Analysis Period (min) | 15 | | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 30 | 214 | 0 | 0 | 419 | 224 | 80 | 59 | 15 | 130 | 0 | 73 |
| Future Volume (vph) | 30 | 214 | 0 | 0 | 419 | 224 | 80 | 59 | 15 | 130 | 0 | 73 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 15 | 12 | 12 | 16 | 12 | 12 | 16 | 12 | 12 | 14 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | | | 0.953 | | | 0.987 | | | 0.951 | |
| Flt Protected | | 0.994 | | | | | | 0.975 | | | 0.969 | |
| Satd. Flow (prot) | 0 | 1387 | 0 | 0 | 1755 | 0 | 0 | 1785 | 0 | 0 | 1440 | 0 |
| Flt Permitted | | 0.994 | | | | | | 0.975 | | | 0.969 | |
| Satd. Flow (perm) | 0 | 1387 | 0 | 0 | 1755 | 0 | 0 | 1785 | 0 | 0 | 1440 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 848 | | | 1822 | | | 402 | | | 2052 | |
| Travel Time (s) | | 19.3 | | | 41.4 | | | 9.1 | | | 46.6 | |
| Confl. Peds. (#/hr) | 4 | | | 5 | | 4 | 1 | | 24 | 24 | | 1 |
| Confl. Bikes (#/hr) | | | 2 | | | 6 | | | 9 | | | |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.70 | 0.70 | 0.70 | 0.74 | 0.74 | 0.74 | 0.88 | 0.88 | 0.88 |
| Heavy Vehicles (%) | 9% | 23% | 0% | 0% | 7% | 2% | 1% | 2% | 33% | 11% | 0% | 27% |
| Parking (#/hr) | | 0 | 0 | | | | | | | | | |
| Adj. Flow (vph) | 34 | 243 | 0 | 0 | 599 | 320 | 108 | 80 | 20 | 148 | 0 | 83 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 277 | 0 | 0 | 919 | 0 | 0 | 208 | 0 | 0 | 231 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.16 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 1.05 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |

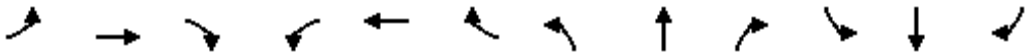
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 64.8% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 30 | 214 | 0 | 0 | 419 | 224 | 80 | 59 | 15 | 130 | 0 | 73 |
| Future Volume (Veh/h) | 30 | 214 | 0 | 0 | 419 | 224 | 80 | 59 | 15 | 130 | 0 | 73 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.70 | 0.70 | 0.70 | 0.74 | 0.74 | 0.74 | 0.88 | 0.88 | 0.88 |
| Hourly flow rate (vph) | 34 | 243 | 0 | 0 | 599 | 320 | 108 | 80 | 20 | 148 | 0 | 83 |
| Pedestrians | | 1 | | | 24 | | | 5 | | | 4 | |
| Lane Width (ft) | | 15.0 | | | 16.0 | | | 16.0 | | | 14.0 | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Percent Blockage | | 0 | | | 3 | | | 1 | | | 0 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 923 | | | 248 | | | 1159 | 1239 | 272 | 1158 | 1079 | 764 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 923 | | | 248 | | | 1159 | 1239 | 272 | 1158 | 1079 | 764 |
| tC, single (s) | 4.2 | | | 4.1 | | | 7.1 | 6.5 | 6.5 | 7.2 | 6.5 | 6.5 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.3 | | | 2.2 | | | 3.5 | 4.0 | 3.6 | 3.6 | 4.0 | 3.5 |
| p0 queue free % | 95 | | | 100 | | | 15 | 52 | 97 | 0 | 100 | 77 |
| cM capacity (veh/h) | 709 | | | 1322 | | | 127 | 165 | 675 | 93 | 208 | 364 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 277 | 919 | 208 | 231 |
| Volume Left | 34 | 0 | 108 | 148 |
| Volume Right | 0 | 320 | 20 | 83 |
| cSH | 709 | 1322 | 153 | 127 |
| Volume to Capacity | 0.05 | 0.00 | 1.36 | 1.82 |
| Queue Length 95th (ft) | 4 | 0 | 323 | 446 |
| Control Delay (s) | 1.8 | 0.0 | 254.9 | 456.4 |
| Lane LOS | A | | F | F |
| Approach Delay (s) | 1.8 | 0.0 | 254.9 | 456.4 |
| Approach LOS | | | F | F |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 97.2 | | | |
| Intersection Capacity Utilization | 64.8% | ICU Level of Service | C | |
| Analysis Period (min) | 15 | | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 32 | 21 | 5 | 5 | 32 | 11 | 21 | 662 | 11 | 21 | 316 | 38 |
| Future Volume (vph) | 32 | 21 | 5 | 5 | 32 | 11 | 21 | 662 | 11 | 21 | 316 | 38 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | 0.95 | | | 0.97 | | | 1.00 | | | 0.99 | |
| Frt | | 0.988 | | | 0.969 | | | 0.998 | | | 0.986 | |
| Flt Protected | | 0.973 | | | 0.995 | | | 0.998 | | | 0.997 | |
| Satd. Flow (prot) | 0 | 1108 | 0 | 0 | 1346 | 0 | 0 | 1410 | 0 | 0 | 1344 | 0 |
| Flt Permitted | | 0.832 | | | 0.974 | | | 0.982 | | | 0.948 | |
| Satd. Flow (perm) | 0 | 902 | 0 | 0 | 1314 | 0 | 0 | 1385 | 0 | 0 | 1277 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 4 | | | 12 | | | 1 | | | 8 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 659 | | | 649 | | | 380 | | | 618 | |
| Travel Time (s) | | 15.0 | | | 14.8 | | | 8.6 | | | 14.0 | |
| Confl. Peds. (#/hr) | 28 | | 11 | 11 | | 28 | 108 | | 63 | 63 | | 108 |
| Confl. Bikes (#/hr) | | | | | | | | | 5 | | | |
| Peak Hour Factor | 0.74 | 0.74 | 0.74 | 0.87 | 0.87 | 0.87 | 0.97 | 0.97 | 0.97 | 0.87 | 0.87 | 0.87 |
| Heavy Vehicles (%) | 31% | 18% | 4% | 0% | 0% | 0% | 6% | 1% | 11% | 0% | 4% | 3% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Adj. Flow (vph) | 43 | 28 | 7 | 6 | 37 | 13 | 22 | 682 | 11 | 24 | 363 | 44 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 78 | 0 | 0 | 56 | 0 | 0 | 715 | 0 | 0 | 431 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |

| Lane Group | Ø2 |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | |
| Future Volume (vph) | |
| Ideal Flow (vphpl) | |
| Lane Width (ft) | |
| Lane Util. Factor | |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Right Turn on Red | |
| Satd. Flow (RTOR) | |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | |
| Heavy Vehicles (%) | |
| Parking (#/hr) | |
| Adj. Flow (vph) | |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | |
| Enter Blocked Intersection | |
| Lane Alignment | |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | |
| Turning Speed (mph) | |
| Number of Detectors | |
| Detector Template | |
| Leading Detector (ft) | |
| Trailing Detector (ft) | |
| Detector 1 Position(ft) | |
| Detector 1 Size(ft) | |
| Detector 1 Type | |
| Detector 1 Channel | |
| Detector 1 Extend (s) | |
| Detector 1 Queue (s) | |
| Detector 1 Delay (s) | |
| Detector 2 Position(ft) | |
| Detector 2 Size(ft) | |
| Detector 2 Type | |
| Detector 2 Channel | |
| Detector 2 Extend (s) | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Detector Phase | 5 | 5 | | 5 | 5 | | 1 | 1 | | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | |
| Minimum Split (s) | 12.0 | 12.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Total Split (s) | 18.0 | 18.0 | | 18.0 | 18.0 | | 54.0 | 54.0 | | 54.0 | 54.0 | |
| Total Split (%) | 17.6% | 17.6% | | 17.6% | 17.6% | | 52.9% | 52.9% | | 52.9% | 52.9% | |
| Maximum Green (s) | 14.0 | 14.0 | | 14.0 | 14.0 | | 50.0 | 50.0 | | 50.0 | 50.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Lost Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lead/Lag | | | | | | | Lead | Lead | | Lead | Lead | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | Max | Max | | Max | Max | | Max | Max | | Max | Max | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 14.3 | | | 14.3 | | | 51.0 | | | 51.0 | |
| Actuated g/C Ratio | | 0.15 | | | 0.15 | | | 0.53 | | | 0.53 | |
| v/c Ratio | | 0.57 | | | 0.27 | | | 0.97 | | | 0.63 | |
| Control Delay | | 57.5 | | | 36.6 | | | 53.7 | | | 23.6 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 57.5 | | | 36.6 | | | 53.7 | | | 23.6 | |
| LOS | | E | | | D | | | D | | | C | |
| Approach Delay | | 57.5 | | | 36.6 | | | 53.7 | | | 23.6 | |
| Approach LOS | | E | | | D | | | D | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 102 | | | |
| Actuated Cycle Length: 96 | | | |
| Natural Cycle: 90 | | | |
| Control Type: Semi Act-Uncoord | | | |
| Maximum v/c Ratio: 0.97 | | | |
| Intersection Signal Delay: 43.0 | | Intersection LOS: D | |
| Intersection Capacity Utilization 63.7% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 11: L Street & E 5th Street



| Lane Group | Ø2 |
|---|---|
| Turn Type | |
| Protected Phases | 2 |
| Permitted Phases | |
| Detector Phase | |
| Switch Phase | |
| Minimum Initial (s) | 4.0 |
| Minimum Split (s) | 30.0 |
| Total Split (s) | 30.0 |
| Total Split (%) | 29% |
| Maximum Green (s) | 26.0 |
| Yellow Time (s) | 3.0 |
| All-Red Time (s) | 1.0 |
| Lost Time Adjust (s) | |
| Total Lost Time (s) | |
| Lead/Lag | Lag |
| Lead-Lag Optimize? | |
| Vehicle Extension (s) | 2.0 |
| Recall Mode | None |
| Walk Time (s) | 14.0 |
| Flash Dont Walk (s) | 12.0 |
| Pedestrian Calls (#/hr) | 53 |
| Act Effct Green (s) | |
| Actuated g/C Ratio | |
| v/c Ratio | |
| Control Delay | |
| Queue Delay | |
| Total Delay | |
| LOS | |
| Approach Delay | |
| Approach LOS | |

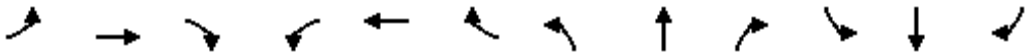
| Intersection Summary |
|---|

| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 78 | 56 | 715 | 431 |
| v/c Ratio | 0.57 | 0.27 | 0.97 | 0.63 |
| Control Delay | 57.5 | 36.6 | 53.7 | 23.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 57.5 | 36.6 | 53.7 | 23.6 |
| Queue Length 50th (ft) | 46 | 26 | ~512 | 203 |
| Queue Length 95th (ft) | 77 | 62 | #738 | 306 |
| Internal Link Dist (ft) | 579 | 569 | 300 | 538 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 137 | 205 | 736 | 682 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.57 | 0.27 | 0.97 | 0.63 |

Intersection Summary

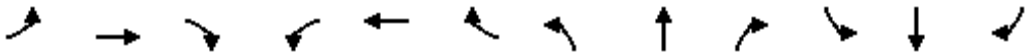
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 32 | 21 | 5 | 5 | 32 | 11 | 21 | 662 | 11 | 21 | 316 | 38 |
| Future Volume (vph) | 32 | 21 | 5 | 5 | 32 | 11 | 21 | 662 | 11 | 21 | 316 | 38 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Total Lost time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Frpb, ped/bikes | | 0.99 | | | 0.97 | | | 1.00 | | | 0.99 | |
| Flpb, ped/bikes | | 0.95 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Frt | | 0.99 | | | 0.97 | | | 1.00 | | | 0.99 | |
| Flt Protected | | 0.97 | | | 0.99 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | | 1058 | | | 1343 | | | 1409 | | | 1344 | |
| Flt Permitted | | 0.83 | | | 0.97 | | | 0.98 | | | 0.95 | |
| Satd. Flow (perm) | | 904 | | | 1315 | | | 1385 | | | 1278 | |
| Peak-hour factor, PHF | 0.74 | 0.74 | 0.74 | 0.87 | 0.87 | 0.87 | 0.97 | 0.97 | 0.97 | 0.87 | 0.87 | 0.87 |
| Adj. Flow (vph) | 43 | 28 | 7 | 6 | 37 | 13 | 22 | 682 | 11 | 24 | 363 | 44 |
| RTOR Reduction (vph) | 0 | 3 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 4 | 0 |
| Lane Group Flow (vph) | 0 | 75 | 0 | 0 | 46 | 0 | 0 | 715 | 0 | 0 | 427 | 0 |
| Confl. Peds. (#/hr) | 28 | | 11 | 11 | | 28 | 108 | | 63 | 63 | | 108 |
| Confl. Bikes (#/hr) | | | | | | | | | 5 | | | |
| Heavy Vehicles (%) | 31% | 18% | 4% | 0% | 0% | 0% | 6% | 1% | 11% | 0% | 4% | 3% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 14.3 | | | 14.3 | | | 51.0 | | | 51.0 | |
| Effective Green, g (s) | | 14.3 | | | 14.3 | | | 51.0 | | | 51.0 | |
| Actuated g/C Ratio | | 0.15 | | | 0.15 | | | 0.53 | | | 0.53 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | | | 2.0 | | | 2.0 | |
| Lane Grp Cap (vph) | | 133 | | | 194 | | | 728 | | | 672 | |
| v/s Ratio Prot | | | | | | | | | | | | |
| v/s Ratio Perm | | c0.08 | | | 0.03 | | | c0.52 | | | 0.33 | |
| v/c Ratio | | 0.56 | | | 0.24 | | | 0.98 | | | 0.64 | |
| Uniform Delay, d1 | | 38.4 | | | 36.5 | | | 22.5 | | | 16.3 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 16.0 | | | 2.8 | | | 29.1 | | | 4.5 | |
| Delay (s) | | 54.4 | | | 39.3 | | | 51.6 | | | 20.9 | |
| Level of Service | | D | | | D | | | D | | | C | |
| Approach Delay (s) | | 54.4 | | | 39.3 | | | 51.6 | | | 20.9 | |
| Approach LOS | | D | | | D | | | D | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 40.9 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.68 | | |
| Actuated Cycle Length (s) | 96.9 | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 63.7% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 27 | 16 | 5 | 5 | 27 | 11 | 16 | 604 | 5 | 11 | 252 | 16 |
| Future Volume (vph) | 27 | 16 | 5 | 5 | 27 | 11 | 16 | 604 | 5 | 11 | 252 | 16 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 16 | 12 | 12 | 15 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | 0.98 | | | 0.99 | | | 1.00 | | | 0.99 | |
| Frt | | 0.987 | | | 0.966 | | | 0.999 | | | 0.992 | |
| Flt Protected | | 0.973 | | | 0.994 | | | 0.999 | | | 0.998 | |
| Satd. Flow (prot) | 0 | 1491 | 0 | 0 | 1328 | 0 | 0 | 1577 | 0 | 0 | 1505 | 0 |
| Flt Permitted | | 0.847 | | | 0.977 | | | 0.990 | | | 0.976 | |
| Satd. Flow (perm) | 0 | 1280 | 0 | 0 | 1304 | 0 | 0 | 1561 | 0 | 0 | 1471 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 6 | | | 18 | | | 1 | | | 8 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 602 | | | 677 | | | 676 | | | 535 | |
| Travel Time (s) | | 13.7 | | | 15.4 | | | 15.4 | | | 12.2 | |
| Confl. Peds. (#/hr) | 11 | | 3 | 3 | | 11 | 32 | | 19 | 19 | | 32 |
| Confl. Bikes (#/hr) | | | | | | 2 | | | 1 | | | |
| Peak Hour Factor | 0.78 | 0.78 | 0.78 | 0.60 | 0.60 | 0.60 | 0.94 | 0.94 | 0.94 | 0.89 | 0.89 | 0.89 |
| Heavy Vehicles (%) | 4% | 29% | 0% | 0% | 33% | 0% | 0% | 1% | 0% | 9% | 4% | 8% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | | | | | |
| Adj. Flow (vph) | 35 | 21 | 6 | 8 | 45 | 18 | 17 | 643 | 5 | 12 | 283 | 18 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 62 | 0 | 0 | 71 | 0 | 0 | 665 | 0 | 0 | 313 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.12 | 1.14 | 1.14 | 1.16 | 1.14 | 1.14 | 1.25 | 1.14 | 1.14 | 1.25 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Detector Phase | 5 | 5 | | 5 | 5 | | 1 | 1 | | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 6.0 | 6.0 | | 6.0 | 6.0 | | 20.0 | 20.0 | | 20.0 | 20.0 | |
| Minimum Split (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 24.0 | 24.0 | | 24.0 | 24.0 | |
| Total Split (s) | 24.0 | 24.0 | | 24.0 | 24.0 | | 54.0 | 54.0 | | 54.0 | 54.0 | |
| Total Split (%) | 30.8% | 30.8% | | 30.8% | 30.8% | | 69.2% | 69.2% | | 69.2% | 69.2% | |
| Maximum Green (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 50.0 | 50.0 | | 50.0 | 50.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Lost Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | Max | Max | | Max | Max | | Max | Max | | Max | Max | |
| Walk Time (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | |
| Flash Dont Walk (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | |
| Pedestrian Calls (#/hr) | 4 | 4 | | 4 | 4 | | 13 | 13 | | 13 | 13 | |
| Act Effct Green (s) | | 20.0 | | | 20.0 | | | 50.0 | | | 50.0 | |
| Actuated g/C Ratio | | 0.26 | | | 0.26 | | | 0.64 | | | 0.64 | |
| v/c Ratio | | 0.19 | | | 0.20 | | | 0.66 | | | 0.33 | |
| Control Delay | | 22.7 | | | 19.9 | | | 12.8 | | | 7.4 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 22.7 | | | 19.9 | | | 12.8 | | | 7.4 | |
| LOS | | C | | | B | | | B | | | A | |
| Approach Delay | | 22.7 | | | 19.9 | | | 12.8 | | | 7.4 | |
| Approach LOS | | C | | | B | | | B | | | A | |

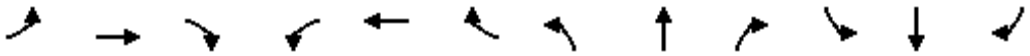
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 78 | | | |
| Actuated Cycle Length: 78 | | | |
| Natural Cycle: 60 | | | |
| Control Type: Semi Act-Uncoord | | | |
| Maximum v/c Ratio: 0.66 | | | |
| Intersection Signal Delay: 12.3 | | Intersection LOS: B | |
| Intersection Capacity Utilization 62.3% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 12: L Street & E 8th Street



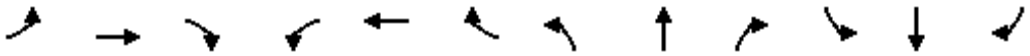
| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 62 | 71 | 665 | 313 |
| v/c Ratio | 0.19 | 0.20 | 0.66 | 0.33 |
| Control Delay | 22.7 | 19.9 | 12.8 | 7.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 22.7 | 19.9 | 12.8 | 7.4 |
| Queue Length 50th (ft) | 21 | 20 | 177 | 59 |
| Queue Length 95th (ft) | 44 | 31 | 291 | 99 |
| Internal Link Dist (ft) | 522 | 597 | 596 | 455 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 332 | 347 | 1001 | 945 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.19 | 0.20 | 0.66 | 0.33 |

Intersection Summary



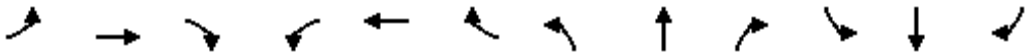
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 27 | 16 | 5 | 5 | 27 | 11 | 16 | 604 | 5 | 11 | 252 | 16 |
| Future Volume (vph) | 27 | 16 | 5 | 5 | 27 | 11 | 16 | 604 | 5 | 11 | 252 | 16 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 16 | 12 | 12 | 15 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Total Lost time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Frpb, ped/bikes | | 1.00 | | | 0.99 | | | 1.00 | | | 0.99 | |
| Flpb, ped/bikes | | 0.99 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Frt | | 0.99 | | | 0.97 | | | 1.00 | | | 0.99 | |
| Flt Protected | | 0.97 | | | 0.99 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | | 1470 | | | 1327 | | | 1574 | | | 1504 | |
| Flt Permitted | | 0.85 | | | 0.98 | | | 0.99 | | | 0.98 | |
| Satd. Flow (perm) | | 1280 | | | 1304 | | | 1560 | | | 1471 | |
| Peak-hour factor, PHF | 0.78 | 0.78 | 0.78 | 0.60 | 0.60 | 0.60 | 0.94 | 0.94 | 0.94 | 0.89 | 0.89 | 0.89 |
| Adj. Flow (vph) | 35 | 21 | 6 | 8 | 45 | 18 | 17 | 643 | 5 | 12 | 283 | 18 |
| RTOR Reduction (vph) | 0 | 4 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 3 | 0 |
| Lane Group Flow (vph) | 0 | 58 | 0 | 0 | 58 | 0 | 0 | 665 | 0 | 0 | 310 | 0 |
| Confl. Peds. (#/hr) | 11 | | 3 | 3 | | 11 | 32 | | 19 | 19 | | 32 |
| Confl. Bikes (#/hr) | | | | | | 2 | | | 1 | | | |
| Heavy Vehicles (%) | 4% | 29% | 0% | 0% | 33% | 0% | 0% | 1% | 0% | 9% | 4% | 8% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 20.0 | | | 20.0 | | | 50.0 | | | 50.0 | |
| Effective Green, g (s) | | 20.0 | | | 20.0 | | | 50.0 | | | 50.0 | |
| Actuated g/C Ratio | | 0.26 | | | 0.26 | | | 0.64 | | | 0.64 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | | | 2.0 | | | 2.0 | |
| Lane Grp Cap (vph) | | 328 | | | 334 | | | 1000 | | | 942 | |
| v/s Ratio Prot | | | | | | | | | | | | |
| v/s Ratio Perm | | c0.04 | | | 0.04 | | | c0.43 | | | 0.21 | |
| v/c Ratio | | 0.18 | | | 0.17 | | | 0.66 | | | 0.33 | |
| Uniform Delay, d1 | | 22.6 | | | 22.6 | | | 8.8 | | | 6.4 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 1.2 | | | 1.1 | | | 3.5 | | | 0.9 | |
| Delay (s) | | 23.7 | | | 23.7 | | | 12.2 | | | 7.3 | |
| Level of Service | | C | | | C | | | B | | | A | |
| Approach Delay (s) | | 23.7 | | | 23.7 | | | 12.2 | | | 7.3 | |
| Approach LOS | | C | | | C | | | B | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 12.2 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.52 | | |
| Actuated Cycle Length (s) | 78.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 62.3% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 5 | 5 | 5 | 16 | 5 | 27 | 556 | 5 | 0 | 204 | 16 |
| Future Volume (vph) | 0 | 5 | 5 | 5 | 16 | 5 | 27 | 556 | 5 | 0 | 204 | 16 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | 0.932 | | | 0.975 | | | 0.999 | | | 0.990 | |
| Flt Protected | | | | | 0.991 | | | 0.998 | | | | |
| Satd. Flow (prot) | 0 | 1771 | 0 | 0 | 1836 | 0 | 0 | 1894 | 0 | 0 | 1881 | 0 |
| Flt Permitted | | | | | 0.991 | | | 0.998 | | | | |
| Satd. Flow (perm) | 0 | 1771 | 0 | 0 | 1836 | 0 | 0 | 1894 | 0 | 0 | 1881 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 487 | | | 392 | | | 93 | | | 676 | |
| Travel Time (s) | | 11.1 | | | 8.9 | | | 2.1 | | | 15.4 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 0 | 5 | 5 | 5 | 17 | 5 | 29 | 604 | 5 | 0 | 222 | 17 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 10 | 0 | 0 | 27 | 0 | 0 | 638 | 0 | 0 | 239 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |

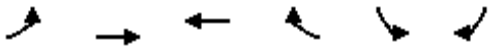
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 58.3% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |



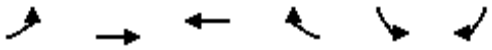
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 5 | 5 | 5 | 16 | 5 | 27 | 556 | 5 | 0 | 204 | 16 |
| Future Volume (Veh/h) | 0 | 5 | 5 | 5 | 16 | 5 | 27 | 556 | 5 | 0 | 204 | 16 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 0 | 5 | 5 | 5 | 17 | 5 | 29 | 604 | 5 | 0 | 222 | 17 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | 676 | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 908 | 898 | 230 | 902 | 904 | 606 | 239 | | | 609 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 908 | 898 | 230 | 902 | 904 | 606 | 239 | | | 609 | | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 100 | 98 | 99 | 98 | 94 | 99 | 98 | | | 100 | | |
| cM capacity (veh/h) | 239 | 275 | 814 | 251 | 273 | 500 | 1340 | | | 979 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 10 | 27 | 638 | 239 |
| Volume Left | 0 | 5 | 29 | 0 |
| Volume Right | 5 | 5 | 5 | 17 |
| cSH | 411 | 293 | 1340 | 979 |
| Volume to Capacity | 0.02 | 0.09 | 0.02 | 0.00 |
| Queue Length 95th (ft) | 2 | 8 | 2 | 0 |
| Control Delay (s) | 14.0 | 18.5 | 0.6 | 0.0 |
| Lane LOS | B | C | A | |
| Approach Delay (s) | 14.0 | 18.5 | 0.6 | 0.0 |
| Approach LOS | B | C | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 1.1 | | | |
| Intersection Capacity Utilization | 58.3% | ICU Level of Service | B | |
| Analysis Period (min) | 15 | | | |



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR | Ø2 |
|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | |
| Traffic Volume (vph) | 580 | 357 | 304 | 7 | 0 | 0 | |
| Future Volume (vph) | 580 | 357 | 304 | 7 | 0 | 0 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Lane Util. Factor | 0.95 | 0.95 | 0.95 | 0.95 | 1.00 | 1.00 | |
| Frt | | | 0.996 | | | | |
| Flt Protected | | 0.970 | | | | | |
| Satd. Flow (prot) | 0 | 3502 | 3596 | 0 | 0 | 0 | |
| Flt Permitted | | 0.613 | | | | | |
| Satd. Flow (perm) | 0 | 2213 | 3596 | 0 | 0 | 0 | |
| Right Turn on Red | | | | Yes | | Yes | |
| Satd. Flow (RTOR) | | | 5 | | | | |
| Link Speed (mph) | | 30 | 30 | | 30 | | |
| Link Distance (ft) | | 289 | 295 | | 140 | | |
| Travel Time (s) | | 6.6 | 6.7 | | 3.2 | | |
| Peak Hour Factor | 0.85 | 0.85 | 0.73 | 0.73 | 0.92 | 0.92 | |
| Adj. Flow (vph) | 682 | 420 | 416 | 10 | 0 | 0 | |
| Shared Lane Traffic (%) | | | | | | | |
| Lane Group Flow (vph) | 0 | 1102 | 426 | 0 | 0 | 0 | |
| Enter Blocked Intersection | No | No | No | No | No | No | |
| Lane Alignment | Left | Left | Left | Right | Left | Right | |
| Median Width(ft) | | 0 | 0 | | 0 | | |
| Link Offset(ft) | | 0 | 0 | | 0 | | |
| Crosswalk Width(ft) | | 16 | 16 | | 16 | | |
| Two way Left Turn Lane | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Turning Speed (mph) | 15 | | | 9 | 15 | 9 | |
| Number of Detectors | 1 | 2 | 2 | | | | |
| Detector Template | Left | Thru | Thru | | | | |
| Leading Detector (ft) | 20 | 100 | 100 | | | | |
| Trailing Detector (ft) | 0 | 0 | 0 | | | | |
| Detector 1 Position(ft) | 0 | 0 | 0 | | | | |
| Detector 1 Size(ft) | 20 | 6 | 6 | | | | |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | | | | |
| Detector 1 Channel | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | | | | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | | | | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | | | | |
| Detector 2 Position(ft) | | 94 | 94 | | | | |
| Detector 2 Size(ft) | | 6 | 6 | | | | |
| Detector 2 Type | | Cl+Ex | Cl+Ex | | | | |
| Detector 2 Channel | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | 0.0 | | | | |
| Turn Type | Perm | NA | NA | | | | |
| Protected Phases | | 1 | 1 | | | | 2 |
| Permitted Phases | 1 | | | | | | |
| Detector Phase | 1 | 1 | 1 | | | | |
| Switch Phase | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | 8.0 | | | | 10.0 |



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR | Ø2 |
|---|---|---|---|---|---|---|---|
| Minimum Split (s) | 22.0 | 22.0 | 22.0 | | | | 25.0 |
| Total Split (s) | 70.0 | 70.0 | 70.0 | | | | 25.0 |
| Total Split (%) | 73.7% | 73.7% | 73.7% | | | | 26% |
| Maximum Green (s) | 62.6 | 62.6 | 62.6 | | | | 20.5 |
| Yellow Time (s) | 5.4 | 5.4 | 5.4 | | | | 3.5 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | | | 1.0 |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | | | |
| Total Lost Time (s) | | 7.4 | 7.4 | | | | |
| Lead/Lag | Lead | Lead | Lead | | | | Lag |
| Lead-Lag Optimize? | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | | | | 2.0 |
| Recall Mode | Max | Max | Max | | | | None |
| Walk Time (s) | | | | | | | 18.0 |
| Flash Dont Walk (s) | | | | | | | 1.0 |
| Pedestrian Calls (#/hr) | | | | | | | 24 |
| Act Effct Green (s) | | 83.6 | 83.6 | | | | |
| Actuated g/C Ratio | | 0.89 | 0.89 | | | | |
| v/c Ratio | | 0.56 | 0.13 | | | | |
| Control Delay | | 6.1 | 2.7 | | | | |
| Queue Delay | | 0.0 | 0.0 | | | | |
| Total Delay | | 6.1 | 2.7 | | | | |
| LOS | | A | A | | | | |
| Approach Delay | | 6.1 | 2.7 | | | | |
| Approach LOS | | A | A | | | | |

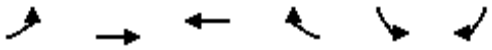
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 95 | | | |
| Actuated Cycle Length: 94.4 | | | |
| Natural Cycle: 70 | | | |
| Control Type: Semi Act-Uncoord | | | |
| Maximum v/c Ratio: 0.56 | | | |
| Intersection Signal Delay: 5.1 | | Intersection LOS: A | |
| Intersection Capacity Utilization 53.1% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 14: Day Blvd Ped



| Lane Group | EBT | WBT |
|---|---|---|
| Lane Group Flow (vph) | 1102 | 426 |
| v/c Ratio | 0.56 | 0.13 |
| Control Delay | 6.1 | 2.7 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 6.1 | 2.7 |
| Queue Length 50th (ft) | 0 | 0 |
| Queue Length 95th (ft) | 241 | 46 |
| Internal Link Dist (ft) | 209 | 215 |
| Turn Bay Length (ft) | | |
| Base Capacity (vph) | 1961 | 3187 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.56 | 0.13 |

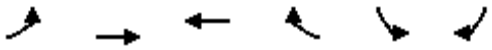
Intersection Summary



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 580 | 357 | 304 | 7 | 0 | 0 |
| Future Volume (vph) | 580 | 357 | 304 | 7 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 7.4 | 7.4 | | | |
| Lane Util. Factor | | 0.95 | 0.95 | | | |
| Frt | | 1.00 | 1.00 | | | |
| Flt Protected | | 0.97 | 1.00 | | | |
| Satd. Flow (prot) | | 3502 | 3597 | | | |
| Flt Permitted | | 0.61 | 1.00 | | | |
| Satd. Flow (perm) | | 2213 | 3597 | | | |
| Peak-hour factor, PHF | 0.85 | 0.85 | 0.73 | 0.73 | 0.92 | 0.92 |
| Adj. Flow (vph) | 682 | 420 | 416 | 10 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 1 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 1102 | 425 | 0 | 0 | 0 |
| Turn Type | Perm | NA | NA | | | |
| Protected Phases | | 1 | 1 | | | |
| Permitted Phases | 1 | | | | | |
| Actuated Green, G (s) | | 78.7 | 78.7 | | | |
| Effective Green, g (s) | | 78.7 | 78.7 | | | |
| Actuated g/C Ratio | | 0.81 | 0.81 | | | |
| Clearance Time (s) | | 7.4 | 7.4 | | | |
| Vehicle Extension (s) | | 2.0 | 2.0 | | | |
| Lane Grp Cap (vph) | | 1791 | 2912 | | | |
| v/s Ratio Prot | | | 0.12 | | | |
| v/s Ratio Perm | | c0.50 | | | | |
| v/c Ratio | | 0.62 | 0.15 | | | |
| Uniform Delay, d1 | | 3.5 | 2.0 | | | |
| Progression Factor | | 1.00 | 1.00 | | | |
| Incremental Delay, d2 | | 1.6 | 0.1 | | | |
| Delay (s) | | 5.1 | 2.1 | | | |
| Level of Service | | A | A | | | |
| Approach Delay (s) | | 5.1 | 2.1 | | 0.0 | |
| Approach LOS | | A | A | | A | |

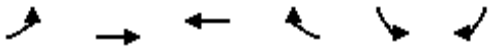
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 4.3 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.57 | | |
| Actuated Cycle Length (s) | 97.2 | Sum of lost time (s) | 11.9 |
| Intersection Capacity Utilization | 53.1% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 580 | 357 | 304 | 7 | 13 | 202 |
| Future Volume (vph) | 580 | 357 | 304 | 7 | 13 | 202 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 10 | 10 | 11 | 11 | 11 | 11 |
| Lane Util. Factor | 0.95 | 0.95 | 0.95 | 0.95 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | | | 0.996 | | 0.873 | |
| Flt Protected | | 0.970 | | | 0.997 | |
| Satd. Flow (prot) | 0 | 2912 | 2943 | 0 | 1248 | 0 |
| Flt Permitted | | 0.970 | | | 0.997 | |
| Satd. Flow (perm) | 0 | 2912 | 2943 | 0 | 1248 | 0 |
| Link Speed (mph) | | 30 | 30 | | 30 | |
| Link Distance (ft) | | 1290 | 1238 | | 93 | |
| Travel Time (s) | | 29.3 | 28.1 | | 2.1 | |
| Confl. Peds. (#/hr) | 8 | | | 8 | 14 | 9 |
| Confl. Bikes (#/hr) | | | | 1 | | 2 |
| Peak Hour Factor | 0.85 | 0.85 | 0.73 | 0.73 | 0.88 | 0.88 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 0% | 0% | 4% |
| Parking (#/hr) | | | 0 | 0 | 0 | 0 |
| Adj. Flow (vph) | 682 | 420 | 416 | 10 | 15 | 230 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 1102 | 426 | 0 | 245 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Left | Right | Left | Right |
| Median Width(ft) | | 0 | 0 | | 11 | |
| Link Offset(ft) | | 0 | 0 | | 0 | |
| Crosswalk Width(ft) | | 16 | 16 | | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.25 | 1.25 | 1.27 | 1.19 | 1.36 | 1.19 |
| Turning Speed (mph) | 15 | | | 9 | 15 | 9 |
| Sign Control | | Free | Free | | Stop | |

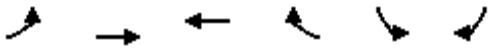
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 71.7% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 580 | 357 | 304 | 7 | 13 | 202 |
| Future Volume (Veh/h) | 580 | 357 | 304 | 7 | 13 | 202 |
| Sign Control | | Free | Free | | Stop | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.85 | 0.85 | 0.73 | 0.73 | 0.88 | 0.88 |
| Hourly flow rate (vph) | 682 | 420 | 416 | 10 | 15 | 230 |
| Pedestrians | | 9 | 14 | | 8 | |
| Lane Width (ft) | | 10.0 | 11.0 | | 11.0 | |
| Walking Speed (ft/s) | | 4.0 | 4.0 | | 4.0 | |
| Percent Blockage | | 1 | 1 | | 1 | |
| Right turn flare (veh) | | | | | | |
| Median type | | None | None | | | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 434 | | | | 2017 | 230 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 434 | | | | 2017 | 230 |
| tC, single (s) | 4.1 | | | | 6.8 | 7.0 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 2.2 | | | | 3.5 | 3.3 |
| p0 queue free % | 39 | | | | 25 | 70 |
| cM capacity (veh/h) | 1122 | | | | 20 | 757 |

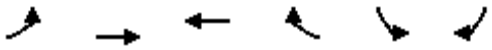
| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | SB 1 |
|---|---|---|---|---|---|
| Volume Total | 822 | 280 | 277 | 149 | 245 |
| Volume Left | 682 | 0 | 0 | 0 | 15 |
| Volume Right | 0 | 0 | 0 | 10 | 230 |
| cSH | 1122 | 1700 | 1700 | 1700 | 233 |
| Volume to Capacity | 0.61 | 0.16 | 0.16 | 0.09 | 1.05 |
| Queue Length 95th (ft) | 108 | 0 | 0 | 0 | 259 |
| Control Delay (s) | 12.3 | 0.0 | 0.0 | 0.0 | 118.4 |
| Lane LOS | B | | | | F |
| Approach Delay (s) | 9.2 | | 0.0 | | 118.4 |
| Approach LOS | | | | | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 22.1 | | |
| Intersection Capacity Utilization | 71.7% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 166 | 259 | 0 | 0 | 0 |
| Future Volume (vph) | 0 | 166 | 259 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 3610 | 1900 | 0 | 0 | 0 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 3610 | 1900 | 0 | 0 | 0 |
| Link Speed (mph) | | 30 | 30 | | 30 | |
| Link Distance (ft) | | 138 | 380 | | 61 | |
| Travel Time (s) | | 3.1 | 8.6 | | 1.4 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 0 | 180 | 282 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 180 | 282 | 0 | 0 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Left | Right | Left | Right |
| Median Width(ft) | | 0 | 0 | | 0 | |
| Link Offset(ft) | | 0 | 0 | | 0 | |
| Crosswalk Width(ft) | | 16 | 16 | | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | | 9 | 15 | 9 |
| Sign Control | | Free | Free | | Stop | |

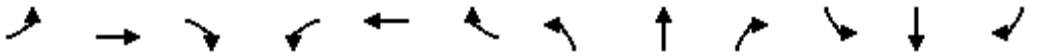
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 17.0% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 166 | 259 | 0 | 0 | 0 |
| Future Volume (Veh/h) | 0 | 166 | 259 | 0 | 0 | 0 |
| Sign Control | | Free | Free | | Stop | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 0 | 180 | 282 | 0 | 0 | 0 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | None | None | | | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | 138 | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 282 | | | | 372 | 282 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 282 | | | | 372 | 282 |
| tC, single (s) | 4.1 | | | | 6.8 | 6.9 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 2.2 | | | | 3.5 | 3.3 |
| p0 queue free % | 100 | | | | 100 | 100 |
| cM capacity (veh/h) | 1292 | | | | 607 | 721 |

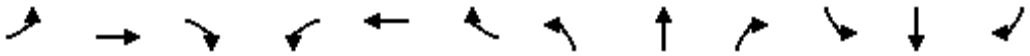
| Direction, Lane # | EB 1 | EB 2 | WB 1 |
|---|---|---|---|
| Volume Total | 90 | 90 | 282 |
| Volume Left | 0 | 0 | 0 |
| Volume Right | 0 | 0 | 0 |
| cSH | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.05 | 0.05 | 0.17 |
| Queue Length 95th (ft) | 0 | 0 | 0 |
| Control Delay (s) | 0.0 | 0.0 | 0.0 |
| Lane LOS | | | |
| Approach Delay (s) | 0.0 | | 0.0 |
| Approach LOS | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.0 | | |
| Intersection Capacity Utilization | 17.0% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 69 | 40 | 16 | 278 | 125 | 328 | 11 | 795 | 145 | 93 | 1078 | 235 |
| Future Volume (vph) | 69 | 40 | 16 | 278 | 125 | 328 | 11 | 795 | 145 | 93 | 1078 | 235 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 14 | 12 | 12 | 13 | 16 | 10 | 11 | 12 | 13 | 12 | 12 |
| Storage Length (ft) | 0 | | 0 | 350 | | 0 | 70 | | 0 | 350 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor | | 0.99 | | | 0.98 | | 0.98 | 0.99 | | 1.00 | 0.97 | |
| Frt | | 0.983 | | | | 0.850 | | 0.977 | | | 0.973 | |
| Flt Protected | | 0.973 | | | 0.967 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1644 | 0 | 0 | 1703 | 1569 | 1516 | 2962 | 0 | 1569 | 2957 | 0 |
| Flt Permitted | | 0.338 | | | 0.708 | | 0.146 | | | 0.146 | | |
| Satd. Flow (perm) | 0 | 568 | 0 | 0 | 1218 | 1569 | 229 | 2962 | 0 | 240 | 2957 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 7 | | | | 360 | | 21 | | | 33 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 745 | | | 950 | | | 1510 | | | 501 | |
| Travel Time (s) | | 16.9 | | | 21.6 | | | 34.3 | | | 11.4 | |
| Confl. Peds. (#/hr) | 21 | | 33 | 33 | | 21 | 138 | | 34 | 34 | | 138 |
| Confl. Bikes (#/hr) | | | 1 | | | 1 | | | 2 | | | 25 |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.91 | 0.91 | 0.91 | 0.90 | 0.90 | 0.90 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 6% | 3% | 8% | 0% | 1% | 5% | 0% | 3% | 2% | 7% | 3% | 4% |
| Adj. Flow (vph) | 81 | 47 | 19 | 305 | 137 | 360 | 12 | 883 | 161 | 100 | 1159 | 253 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 147 | 0 | 0 | 442 | 360 | 12 | 1044 | 0 | 100 | 1412 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 6 | | | 13 | | | 17 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.05 | 1.14 | 1.14 | 1.10 | 0.97 | 1.25 | 1.19 | 1.14 | 1.10 | 1.14 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | 20 | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | 20 | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |

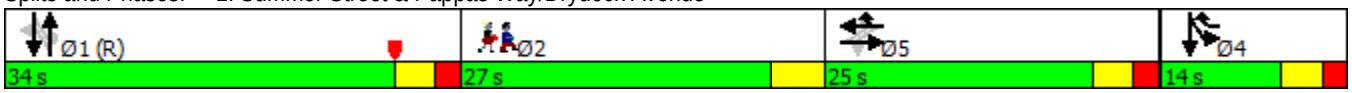
| Lane Group | Ø2 |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | |
| Future Volume (vph) | |
| Ideal Flow (vphpl) | |
| Lane Width (ft) | |
| Storage Length (ft) | |
| Storage Lanes | |
| Taper Length (ft) | |
| Lane Util. Factor | |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Right Turn on Red | |
| Satd. Flow (RTOR) | |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | |
| Heavy Vehicles (%) | |
| Adj. Flow (vph) | |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | |
| Enter Blocked Intersection | |
| Lane Alignment | |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | |
| Turning Speed (mph) | |
| Number of Detectors | |
| Detector Template | |
| Leading Detector (ft) | |
| Trailing Detector (ft) | |
| Detector 1 Position(ft) | |
| Detector 1 Size(ft) | |
| Detector 1 Type | |
| Detector 1 Channel | |
| Detector 1 Extend (s) | |
| Detector 1 Queue (s) | |
| Detector 1 Delay (s) | |
| Detector 2 Position(ft) | |
| Detector 2 Size(ft) | |
| Detector 2 Type | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | pt+ov | Perm | NA | | D.P+P | NA | |
| Protected Phases | | 5 | | | 5 | 5 4 | | 1 | | 4 | 1 4 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Detector Phase | 5 | 5 | | 5 | 5 | 5 4 | 1 | 1 | | 4 | 1 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | | |
| Minimum Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | | 13.0 | 13.0 | | 13.0 | | |
| Total Split (s) | 25.0 | 25.0 | | 25.0 | 25.0 | | 34.0 | 34.0 | | 14.0 | | |
| Total Split (%) | 25.0% | 25.0% | | 25.0% | 25.0% | | 34.0% | 34.0% | | 14.0% | | |
| Maximum Green (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 29.0 | 29.0 | | 9.0 | | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | 0.0 | 0.0 | | 0.0 | | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | 5.0 | 5.0 | | 5.0 | | |
| Lead/Lag | | | | | | | Lead | Lead | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | | |
| Recall Mode | None | None | | None | None | | C-Max | C-Max | | None | | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 30.8 | | | 30.8 | 44.8 | 29.0 | 29.0 | | 38.0 | 43.0 | |
| Actuated g/C Ratio | | 0.31 | | | 0.31 | 0.45 | 0.29 | 0.29 | | 0.38 | 0.43 | |
| v/c Ratio | | 0.82 | | | 1.18 | 0.40 | 0.18 | 1.20 | | 0.48 | 1.09 | |
| Control Delay | | 71.7 | | | 140.3 | 4.1 | 34.9 | 131.9 | | 25.5 | 83.3 | |
| Queue Delay | | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | | 71.7 | | | 140.3 | 4.1 | 34.9 | 131.9 | | 25.5 | 83.3 | |
| LOS | | E | | | F | A | C | F | | C | F | |
| Approach Delay | | 71.7 | | | 79.1 | | | 130.8 | | | 79.4 | |
| Approach LOS | | E | | | E | | | F | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 100 | | | |
| Actuated Cycle Length: 100 | | | |
| Offset: 0 (0%), Referenced to phase 1:NBSB, Start of Yellow | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 1.20 | | | |
| Intersection Signal Delay: 94.5 | | Intersection LOS: F | |
| Intersection Capacity Utilization 98.5% | | ICU Level of Service F | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 1: Summer Street & Pappas Way/Drydock Avenue



| Lane Group | Ø2 |
|---|---|
| Detector 2 Channel | |
| Detector 2 Extend (s) | |
| Turn Type | |
| Protected Phases | 2 |
| Permitted Phases | |
| Detector Phase | |
| Switch Phase | |
| Minimum Initial (s) | 4.0 |
| Minimum Split (s) | 27.0 |
| Total Split (s) | 27.0 |
| Total Split (%) | 27% |
| Maximum Green (s) | 23.0 |
| Yellow Time (s) | 4.0 |
| All-Red Time (s) | 0.0 |
| Lost Time Adjust (s) | |
| Total Lost Time (s) | |
| Lead/Lag | Lag |
| Lead-Lag Optimize? | |
| Vehicle Extension (s) | 2.0 |
| Recall Mode | None |
| Walk Time (s) | 7.0 |
| Flash Dont Walk (s) | 16.0 |
| Pedestrian Calls (#/hr) | 28 |
| Act Effct Green (s) | |
| Actuated g/C Ratio | |
| v/c Ratio | |
| Control Delay | |
| Queue Delay | |
| Total Delay | |
| LOS | |
| Approach Delay | |
| Approach LOS | |

| Intersection Summary |
|---|

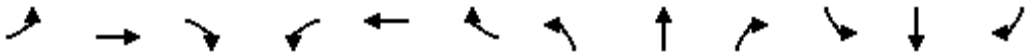


| Lane Group | EBT | WBT | WBR | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 147 | 442 | 360 | 12 | 1044 | 100 | 1412 |
| v/c Ratio | 0.82 | 1.18 | 0.40 | 0.18 | 1.20 | 0.48 | 1.09 |
| Control Delay | 71.7 | 140.3 | 4.1 | 34.9 | 131.9 | 25.5 | 83.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 71.7 | 140.3 | 4.1 | 34.9 | 131.9 | 25.5 | 83.3 |
| Queue Length 50th (ft) | ~113 | ~427 | 0 | 6 | ~423 | 38 | ~533 |
| Queue Length 95th (ft) | #222 | #618 | 60 | 23 | #554 | 72 | #671 |
| Internal Link Dist (ft) | 665 | 870 | | | 1430 | | 421 |
| Turn Bay Length (ft) | | | | 70 | | 350 | |
| Base Capacity (vph) | 179 | 375 | 901 | 66 | 873 | 210 | 1290 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.82 | 1.18 | 0.40 | 0.18 | 1.20 | 0.48 | 1.09 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 69 | 40 | 16 | 278 | 125 | 328 | 11 | 795 | 145 | 93 | 1078 | 235 |
| Future Volume (vph) | 69 | 40 | 16 | 278 | 125 | 328 | 11 | 795 | 145 | 93 | 1078 | 235 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 14 | 12 | 12 | 13 | 16 | 10 | 11 | 12 | 13 | 12 | 12 |
| Total Lost time (s) | | 5.0 | | | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | 1.00 | 1.00 | 0.95 | | 1.00 | 0.95 | |
| Frpb, ped/bikes | | 0.99 | | | 1.00 | 1.00 | 1.00 | 0.99 | | 1.00 | 0.96 | |
| Flpb, ped/bikes | | 1.00 | | | 0.98 | 1.00 | 0.98 | 1.00 | | 1.00 | 1.00 | |
| Frt | | 0.98 | | | 1.00 | 0.85 | 1.00 | 0.98 | | 1.00 | 0.97 | |
| Flt Protected | | 0.97 | | | 0.97 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 1640 | | | 1674 | 1569 | 1489 | 2960 | | 1568 | 2953 | |
| Flt Permitted | | 0.34 | | | 0.71 | 1.00 | 0.15 | 1.00 | | 0.15 | 1.00 | |
| Satd. Flow (perm) | | 570 | | | 1226 | 1569 | 229 | 2960 | | 241 | 2953 | |
| Peak-hour factor, PHF | 0.85 | 0.85 | 0.85 | 0.91 | 0.91 | 0.91 | 0.90 | 0.90 | 0.90 | 0.93 | 0.93 | 0.93 |
| Adj. Flow (vph) | 81 | 47 | 19 | 305 | 137 | 360 | 12 | 883 | 161 | 100 | 1159 | 253 |
| RTOR Reduction (vph) | 0 | 5 | 0 | 0 | 0 | 199 | 0 | 15 | 0 | 0 | 19 | 0 |
| Lane Group Flow (vph) | 0 | 142 | 0 | 0 | 442 | 161 | 12 | 1029 | 0 | 100 | 1393 | 0 |
| Confl. Peds. (#/hr) | 21 | | 33 | 33 | | 21 | 138 | | 34 | 34 | | 138 |
| Confl. Bikes (#/hr) | | | 1 | | | 1 | | | 2 | | | 25 |
| Heavy Vehicles (%) | 6% | 3% | 8% | 0% | 1% | 5% | 0% | 3% | 2% | 7% | 3% | 4% |
| Turn Type | Perm | NA | | Perm | NA | pt+ov | Perm | NA | | D.P+P | NA | |
| Protected Phases | | 5 | | | 5 | 5 4 | | 1 | | 4 | 1 4 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 30.8 | | | 30.8 | 44.8 | 27.4 | 27.4 | | 36.4 | 41.4 | |
| Effective Green, g (s) | | 30.8 | | | 30.8 | 44.8 | 27.4 | 27.4 | | 36.4 | 41.4 | |
| Actuated g/C Ratio | | 0.31 | | | 0.31 | 0.45 | 0.27 | 0.27 | | 0.36 | 0.41 | |
| Clearance Time (s) | | 5.0 | | | 5.0 | | 5.0 | 5.0 | | 5.0 | | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | | 2.0 | 2.0 | | 2.0 | | |
| Lane Grp Cap (vph) | | 175 | | | 377 | 702 | 62 | 811 | | 207 | 1222 | |
| v/s Ratio Prot | | | | | | 0.10 | | c0.35 | | 0.04 | c0.47 | |
| v/s Ratio Perm | | 0.25 | | | c0.36 | | 0.05 | | | 0.13 | | |
| v/c Ratio | | 0.81 | | | 1.17 | 0.23 | 0.19 | 1.27 | | 0.48 | 1.14 | |
| Uniform Delay, d1 | | 31.9 | | | 34.6 | 17.0 | 27.8 | 36.3 | | 24.5 | 29.3 | |
| Progression Factor | | 1.00 | | | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 23.0 | | | 102.2 | 0.1 | 6.8 | 130.5 | | 0.6 | 73.2 | |
| Delay (s) | | 55.0 | | | 136.8 | 17.0 | 34.7 | 166.8 | | 25.2 | 102.5 | |
| Level of Service | | D | | | F | B | C | F | | C | F | |
| Approach Delay (s) | | 55.0 | | | 83.1 | | | 165.3 | | | 97.4 | |
| Approach LOS | | D | | | F | | | F | | | F | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 112.7 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 1.04 | | |
| Actuated Cycle Length (s) | 100.0 | Sum of lost time (s) | 19.0 |
| Intersection Capacity Utilization | 98.5% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |

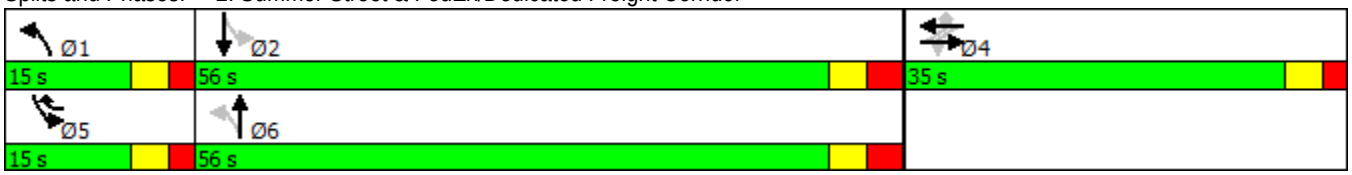
c Critical Lane Group

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 21 | 0 | 5 | 16 | 0 | 10 | 5 | 918 | 5 | 0 | 1356 | 16 |
| Future Volume (vph) | 21 | 0 | 5 | 16 | 0 | 10 | 5 | 918 | 5 | 0 | 1356 | 16 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 13 | 13 | 13 | 12 | 12 | 12 | 10 | 10 | 10 | 11 | 11 | 11 |
| Storage Length (ft) | 0 | | 0 | 0 | | 60 | 60 | | 0 | 120 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 50 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Frt | | 0.976 | | | | 0.850 | | 0.999 | | | 0.998 | |
| Flt Protected | | 0.961 | | | 0.950 | | 0.950 | | | | | |
| Satd. Flow (prot) | 0 | 1657 | 0 | 0 | 1624 | 727 | 1516 | 3029 | 0 | 826 | 3044 | 0 |
| Flt Permitted | | 0.752 | | | 0.739 | | 0.139 | | | | | |
| Satd. Flow (perm) | 0 | 1297 | 0 | 0 | 1264 | 727 | 222 | 3029 | 0 | 826 | 3044 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 82 | | | | 31 | | 1 | | | 1 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 228 | | | 352 | | | 665 | | | 1510 | |
| Travel Time (s) | | 5.2 | | | 8.0 | | | 15.1 | | | 34.3 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 100% | 0% | 0% | 0% | 100% | 3% | 0% |
| Adj. Flow (vph) | 23 | 0 | 5 | 17 | 0 | 11 | 5 | 998 | 5 | 0 | 1474 | 17 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 28 | 0 | 0 | 17 | 11 | 5 | 1003 | 0 | 0 | 1491 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 12 | | | 11 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.10 | 1.10 | 1.10 | 1.14 | 1.14 | 1.14 | 1.25 | 1.25 | 1.25 | 1.19 | 1.19 | 1.19 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | 20 | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | 20 | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | pm+ov | pm+pt | NA | | pm+pt | NA | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Protected Phases | | 4 | | | 4 | 5 | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 4 | | | 4 | | 4 | 6 | 6 | | 2 | | |
| Detector Phase | 4 | 4 | | 4 | 4 | 5 | 1 | 6 | | 5 | 2 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 6.0 | 6.0 | | 6.0 | 6.0 | 6.0 | 6.0 | 10.0 | | 6.0 | 10.0 | |
| Minimum Split (s) | 26.0 | 26.0 | | 26.0 | 26.0 | 11.0 | 11.0 | 24.0 | | 11.0 | 24.0 | |
| Total Split (s) | 35.0 | 35.0 | | 35.0 | 35.0 | 15.0 | 15.0 | 56.0 | | 15.0 | 56.0 | |
| Total Split (%) | 33.0% | 33.0% | | 33.0% | 33.0% | 14.2% | 14.2% | 52.8% | | 14.2% | 52.8% | |
| Maximum Green (s) | 30.0 | 30.0 | | 30.0 | 30.0 | 10.0 | 10.0 | 50.0 | | 10.0 | 50.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 3.0 | | 2.0 | 3.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | 5.0 | 5.0 | 6.0 | | 5.0 | 6.0 | |
| Lead/Lag | | | | | | Lead | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | None | None | | None | None | None | None | Ped | | None | Max | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | | 7.0 | | | | |
| Flash Dont Walk (s) | 14.0 | 14.0 | | 14.0 | 14.0 | | | 9.0 | | | | |
| Pedestrian Calls (#/hr) | 10 | 10 | | 10 | 10 | | | 10 | | | | |
| Act Effct Green (s) | | 8.5 | | | 8.5 | 15.1 | 59.0 | 59.5 | | | 59.5 | |
| Actuated g/C Ratio | | 0.12 | | | 0.12 | 0.20 | 0.80 | 0.81 | | | 0.81 | |
| v/c Ratio | | 0.13 | | | 0.12 | 0.06 | 0.02 | 0.41 | | | 0.61 | |
| Control Delay | | 1.2 | | | 30.4 | 2.4 | 4.0 | 6.2 | | | 9.1 | |
| Queue Delay | | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | | | 0.0 | |
| Total Delay | | 1.2 | | | 30.4 | 2.4 | 4.0 | 6.2 | | | 9.1 | |
| LOS | | A | | | C | A | A | A | | | A | |
| Approach Delay | | 1.2 | | | 19.4 | | | 6.2 | | | 9.1 | |
| Approach LOS | | A | | | B | | | A | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 106 | | | |
| Actuated Cycle Length: 73.8 | | | |
| Natural Cycle: 90 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 0.61 | | | |
| Intersection Signal Delay: 8.0 | | Intersection LOS: A | |
| Intersection Capacity Utilization 59.7% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 2: Summer Street & FedEx/Dedicated Freight Corridor

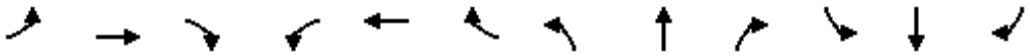




| Lane Group | EBT | WBT | WBR | NBL | NBT | SBT |
|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 28 | 17 | 11 | 5 | 1003 | 1491 |
| v/c Ratio | 0.13 | 0.12 | 0.06 | 0.02 | 0.41 | 0.61 |
| Control Delay | 1.2 | 30.4 | 2.4 | 4.0 | 6.2 | 9.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 1.2 | 30.4 | 2.4 | 4.0 | 6.2 | 9.1 |
| Queue Length 50th (ft) | 0 | 7 | 0 | 1 | 60 | 117 |
| Queue Length 95th (ft) | 0 | 25 | 4 | 4 | 266 | #572 |
| Internal Link Dist (ft) | 148 | 272 | | | 585 | 1430 |
| Turn Bay Length (ft) | | | 60 | 60 | | |
| Base Capacity (vph) | 583 | 521 | 211 | 357 | 2441 | 2453 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.05 | 0.03 | 0.05 | 0.01 | 0.41 | 0.61 |

Intersection Summary

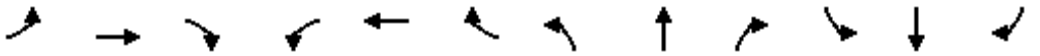
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 21 | 0 | 5 | 16 | 0 | 10 | 5 | 918 | 5 | 0 | 1356 | 16 |
| Future Volume (vph) | 21 | 0 | 5 | 16 | 0 | 10 | 5 | 918 | 5 | 0 | 1356 | 16 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 13 | 13 | 13 | 12 | 12 | 12 | 10 | 10 | 10 | 11 | 11 | 11 |
| Total Lost time (s) | | 5.0 | | | 5.0 | 5.0 | 5.0 | 6.0 | | | 6.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | 1.00 | 1.00 | 0.95 | | | 0.95 | |
| Frt | | 0.98 | | | 1.00 | 0.85 | 1.00 | 1.00 | | | 1.00 | |
| Flt Protected | | 0.96 | | | 0.95 | 1.00 | 0.95 | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | | 1656 | | | 1624 | 727 | 1516 | 3030 | | | 3045 | |
| Flt Permitted | | 0.75 | | | 0.74 | 1.00 | 0.14 | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | | 1298 | | | 1264 | 727 | 222 | 3030 | | | 3045 | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 23 | 0 | 5 | 17 | 0 | 11 | 5 | 998 | 5 | 0 | 1474 | 17 |
| RTOR Reduction (vph) | 0 | 26 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 2 | 0 | 0 | 17 | 1 | 5 | 1003 | 0 | 0 | 1491 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 100% | 0% | 0% | 0% | 100% | 3% | 0% |
| Turn Type | Perm | NA | | Perm | NA | pm+ov | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | | 4 | | | 4 | 5 | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 4 | | | 4 | | 4 | 6 | 6 | | 2 | | |
| Actuated Green, G (s) | | 6.0 | | | 6.0 | 7.0 | 58.0 | 57.0 | | | 57.0 | |
| Effective Green, g (s) | | 6.0 | | | 6.0 | 7.0 | 58.0 | 57.0 | | | 57.0 | |
| Actuated g/C Ratio | | 0.08 | | | 0.08 | 0.09 | 0.72 | 0.71 | | | 0.71 | |
| Clearance Time (s) | | 5.0 | | | 5.0 | 5.0 | 5.0 | 6.0 | | | 6.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | 2.0 | 2.0 | 2.0 | | | 2.0 | |
| Lane Grp Cap (vph) | | 97 | | | 94 | 109 | 177 | 2158 | | | 2169 | |
| v/s Ratio Prot | | | | | | c0.00 | 0.00 | 0.33 | | | c0.49 | |
| v/s Ratio Perm | | 0.00 | | | c0.01 | 0.00 | 0.02 | | | | | |
| v/c Ratio | | 0.02 | | | 0.18 | 0.01 | 0.03 | 0.46 | | | 0.69 | |
| Uniform Delay, d1 | | 34.3 | | | 34.7 | 33.3 | 3.9 | 4.9 | | | 6.5 | |
| Progression Factor | | 1.00 | | | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 0.0 | | | 0.3 | 0.0 | 0.0 | 0.1 | | | 1.8 | |
| Delay (s) | | 34.3 | | | 35.0 | 33.3 | 3.9 | 5.0 | | | 8.3 | |
| Level of Service | | C | | | D | C | A | A | | | A | |
| Approach Delay (s) | | 34.3 | | | 34.4 | | | 5.0 | | | 8.3 | |
| Approach LOS | | C | | | C | | | A | | | A | |

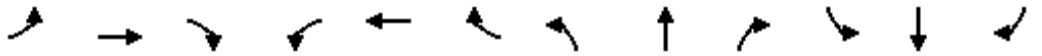
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 7.6 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.63 | | |
| Actuated Cycle Length (s) | 80.0 | Sum of lost time (s) | 16.0 |
| Intersection Capacity Utilization | 59.7% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 16 | 0 | 11 | 69 | 0 | 150 | 0 | 752 | 52 | 112 | 1223 | 11 |
| Future Volume (vph) | 16 | 0 | 11 | 69 | 0 | 150 | 0 | 752 | 52 | 112 | 1223 | 11 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 14 | 12 | 12 | 12 | 12 | 10 | 10 | 12 | 10 | 10 | 10 |
| Storage Length (ft) | 0 | | 0 | 0 | | 100 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Ped Bike Factor | | | | | | | | | | | 1.00 | |
| Frt | | 0.945 | | | | 0.850 | | 0.991 | | | 0.999 | |
| Flt Protected | | 0.971 | | | 0.950 | | | | | | 0.996 | |
| Satd. Flow (prot) | 0 | 1616 | 0 | 0 | 1624 | 1454 | 0 | 2950 | 0 | 0 | 2951 | 0 |
| Flt Permitted | | 0.817 | | | 0.748 | | | | | | 0.677 | |
| Satd. Flow (perm) | 0 | 1360 | 0 | 0 | 1279 | 1454 | 0 | 2950 | 0 | 0 | 2006 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 384 | | | 327 | | | 365 | | | 665 | |
| Travel Time (s) | | 8.7 | | | 7.4 | | | 8.3 | | | 15.1 | |
| Confl. Peds. (#/hr) | | | | | | | 153 | | | | | 153 |
| Confl. Bikes (#/hr) | | | | | | | | | | | | 34 |
| Peak Hour Factor | 0.65 | 0.92 | 0.65 | 0.92 | 0.92 | 0.92 | 0.85 | 0.85 | 0.92 | 0.92 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 6% | 0% | 0% | 0% | 0% | 0% | 0% | 2% | 0% | 0% | 2% | 0% |
| Parking (#/hr) | | | | | | | 1 | | | | | 1 |
| Adj. Flow (vph) | 25 | 0 | 17 | 75 | 0 | 163 | 0 | 885 | 57 | 122 | 1274 | 11 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 42 | 0 | 0 | 75 | 163 | 0 | 942 | 0 | 0 | 1407 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.05 | 1.14 | 1.14 | 1.14 | 1.14 | 1.25 | 1.25 | 1.14 | 1.25 | 1.25 | 1.25 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | 20 | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | 20 | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |

| Lane Group | Ø2 |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | |
| Future Volume (vph) | |
| Ideal Flow (vphpl) | |
| Lane Width (ft) | |
| Storage Length (ft) | |
| Storage Lanes | |
| Taper Length (ft) | |
| Lane Util. Factor | |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Right Turn on Red | |
| Satd. Flow (RTOR) | |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | |
| Heavy Vehicles (%) | |
| Parking (#/hr) | |
| Adj. Flow (vph) | |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | |
| Enter Blocked Intersection | |
| Lane Alignment | |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | |
| Turning Speed (mph) | |
| Number of Detectors | |
| Detector Template | |
| Leading Detector (ft) | |
| Trailing Detector (ft) | |
| Detector 1 Position(ft) | |
| Detector 1 Size(ft) | |
| Detector 1 Type | |
| Detector 1 Channel | |
| Detector 1 Extend (s) | |
| Detector 1 Queue (s) | |
| Detector 1 Delay (s) | |
| Detector 2 Position(ft) | |
| Detector 2 Size(ft) | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | Perm | | NA | | Perm | NA | |
| Protected Phases | | 3 | | | 3 | | | 1 | | | 1 | |
| Permitted Phases | 3 | | | 3 | | 3 | 1 | | | 1 | | |
| Detector Phase | 3 | 3 | | 3 | 3 | 3 | 1 | 1 | | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Minimum Split (s) | 22.0 | 22.0 | | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | | 22.0 | 22.0 | |
| Total Split (s) | 22.0 | 22.0 | | 22.0 | 22.0 | 22.0 | 106.0 | 106.0 | | 106.0 | 106.0 | |
| Total Split (%) | 14.7% | 14.7% | | 14.7% | 14.7% | 14.7% | 70.7% | 70.7% | | 70.7% | 70.7% | |
| Maximum Green (s) | 18.0 | 18.0 | | 18.0 | 18.0 | 18.0 | 102.0 | 102.0 | | 102.0 | 102.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | 0.0 | | 0.0 | | | 0.0 | |
| Total Lost Time (s) | | 4.0 | | | 4.0 | 4.0 | | 4.0 | | | 4.0 | |
| Lead/Lag | | | | | | | Lead | Lead | | Lead | Lead | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | Min | Min | | Min | Min | Min | C-Max | C-Max | | C-Max | C-Max | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 11.0 | 11.0 | | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | | 11.0 | 11.0 | |
| Pedestrian Calls (#/hr) | 60 | 60 | | 60 | 60 | 60 | 60 | 60 | | 60 | 60 | |
| Act Effct Green (s) | | 17.8 | | | 17.8 | 17.8 | | 102.2 | | | 102.2 | |
| Actuated g/C Ratio | | 0.12 | | | 0.12 | 0.12 | | 0.68 | | | 0.68 | |
| v/c Ratio | | 0.26 | | | 0.50 | 0.95 | | 0.47 | | | 1.03 | |
| Control Delay | | 64.7 | | | 73.9 | 120.5 | | 12.2 | | | 56.5 | |
| Queue Delay | | 0.0 | | | 0.0 | 0.0 | | 4.4 | | | 20.2 | |
| Total Delay | | 64.7 | | | 73.9 | 120.5 | | 16.6 | | | 76.7 | |
| LOS | | E | | | E | F | | B | | | E | |
| Approach Delay | | 64.7 | | | 105.8 | | | 16.6 | | | 76.7 | |
| Approach LOS | | E | | | F | | | B | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 150 | | | |
| Actuated Cycle Length: 150 | | | |
| Offset: 0 (0%), Referenced to phase 1:NBSB, Start of Yellow | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 1.03 | | | |
| Intersection Signal Delay: 57.6 | | Intersection LOS: E | |
| Intersection Capacity Utilization 85.0% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 3: Summer Street & Elkins Street/Elkins Driveway



| Lane Group | Ø2 |
|---|---|
| Detector 2 Type | |
| Detector 2 Channel | |
| Detector 2 Extend (s) | |
| Turn Type | |
| Protected Phases | 2 |
| Permitted Phases | |
| Detector Phase | |
| Switch Phase | |
| Minimum Initial (s) | 4.0 |
| Minimum Split (s) | 22.0 |
| Total Split (s) | 22.0 |
| Total Split (%) | 15% |
| Maximum Green (s) | 18.0 |
| Yellow Time (s) | 3.0 |
| All-Red Time (s) | 1.0 |
| Lost Time Adjust (s) | |
| Total Lost Time (s) | |
| Lead/Lag | Lag |
| Lead-Lag Optimize? | |
| Vehicle Extension (s) | 2.0 |
| Recall Mode | Ped |
| Walk Time (s) | 7.0 |
| Flash Dont Walk (s) | 11.0 |
| Pedestrian Calls (#/hr) | 60 |
| Act Effct Green (s) | |
| Actuated g/C Ratio | |
| v/c Ratio | |
| Control Delay | |
| Queue Delay | |
| Total Delay | |
| LOS | |
| Approach Delay | |
| Approach LOS | |

| Intersection Summary |
|---|

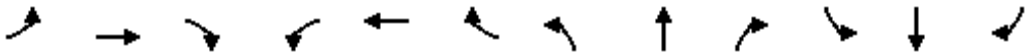


| Lane Group | EBT | WBT | WBR | NBT | SBT |
|---|---|---|---|---|---|
| Lane Group Flow (vph) | 42 | 75 | 163 | 942 | 1407 |
| v/c Ratio | 0.26 | 0.50 | 0.95 | 0.47 | 1.03 |
| Control Delay | 64.7 | 73.9 | 120.5 | 12.2 | 56.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 4.4 | 20.2 |
| Total Delay | 64.7 | 73.9 | 120.5 | 16.6 | 76.7 |
| Queue Length 50th (ft) | 38 | 70 | 161 | 212 | ~774 |
| Queue Length 95th (ft) | 79 | 128 | #308 | 236 | #913 |
| Internal Link Dist (ft) | 304 | 247 | | 285 | 585 |
| Turn Bay Length (ft) | | | 100 | | |
| Base Capacity (vph) | 163 | 153 | 174 | 2010 | 1367 |
| Starvation Cap Reductn | 0 | 0 | 0 | 973 | 67 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.26 | 0.49 | 0.94 | 0.91 | 1.08 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 16 | 0 | 11 | 69 | 0 | 150 | 0 | 752 | 52 | 112 | 1223 | 11 |
| Future Volume (vph) | 16 | 0 | 11 | 69 | 0 | 150 | 0 | 752 | 52 | 112 | 1223 | 11 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 14 | 12 | 12 | 12 | 12 | 10 | 10 | 12 | 10 | 10 | 10 |
| Total Lost time (s) | | 4.0 | | | 4.0 | 4.0 | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | 1.00 | | 0.95 | | | 0.95 | |
| Frpb, ped/bikes | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Flpb, ped/bikes | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Frt | | 0.95 | | | 1.00 | 0.85 | | 0.99 | | | 1.00 | |
| Flt Protected | | 0.97 | | | 0.95 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | | 1617 | | | 1624 | 1454 | | 2949 | | | 2949 | |
| Flt Permitted | | 0.82 | | | 0.75 | 1.00 | | 1.00 | | | 0.68 | |
| Satd. Flow (perm) | | 1360 | | | 1280 | 1454 | | 2949 | | | 2005 | |
| Peak-hour factor, PHF | 0.65 | 0.92 | 0.65 | 0.92 | 0.92 | 0.92 | 0.85 | 0.85 | 0.92 | 0.92 | 0.96 | 0.96 |
| Adj. Flow (vph) | 25 | 0 | 17 | 75 | 0 | 163 | 0 | 885 | 57 | 122 | 1274 | 11 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 42 | 0 | 0 | 75 | 163 | 0 | 942 | 0 | 0 | 1407 | 0 |
| Confl. Peds. (#/hr) | | | | | | | 153 | | | | | 153 |
| Confl. Bikes (#/hr) | | | | | | | | | | | | 34 |
| Heavy Vehicles (%) | 6% | 0% | 0% | 0% | 0% | 0% | 0% | 2% | 0% | 0% | 2% | 0% |
| Parking (#/hr) | | | | | | | 1 | | | | | 1 |
| Turn Type | Perm | NA | | Perm | NA | Perm | | NA | | Perm | NA | |
| Protected Phases | | 3 | | | 3 | | | 1 | | | 1 | |
| Permitted Phases | 3 | | | 3 | | 3 | 1 | | | 1 | | |
| Actuated Green, G (s) | | 17.8 | | | 17.8 | 17.8 | | 102.2 | | | 102.2 | |
| Effective Green, g (s) | | 17.8 | | | 17.8 | 17.8 | | 102.2 | | | 102.2 | |
| Actuated g/C Ratio | | 0.12 | | | 0.12 | 0.12 | | 0.68 | | | 0.68 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | 4.0 | | 4.0 | | | 4.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | 2.0 | | 2.0 | | | 2.0 | |
| Lane Grp Cap (vph) | | 161 | | | 151 | 172 | | 2009 | | | 1366 | |
| v/s Ratio Prot | | | | | | | | 0.32 | | | | |
| v/s Ratio Perm | | 0.03 | | | 0.06 | c0.11 | | | | | c0.70 | |
| v/c Ratio | | 0.26 | | | 0.50 | 0.95 | | 0.47 | | | 1.03 | |
| Uniform Delay, d1 | | 60.1 | | | 61.9 | 65.6 | | 11.2 | | | 23.9 | |
| Progression Factor | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 0.3 | | | 0.9 | 52.4 | | 0.8 | | | 32.4 | |
| Delay (s) | | 60.4 | | | 62.8 | 118.0 | | 12.0 | | | 56.3 | |
| Level of Service | | E | | | E | F | | B | | | E | |
| Approach Delay (s) | | 60.4 | | | 100.7 | | | 12.0 | | | 56.3 | |
| Approach LOS | | E | | | F | | | B | | | E | |

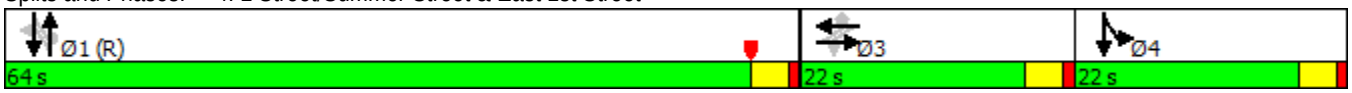
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 44.5 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.88 | | |
| Actuated Cycle Length (s) | 150.0 | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 85.0% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 45 | 116 | 64 | 40 | 57 | 163 | 27 | 591 | 34 | 294 | 850 | 158 |
| Future Volume (vph) | 45 | 116 | 64 | 40 | 57 | 163 | 27 | 591 | 34 | 294 | 850 | 158 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 15 | 12 | 12 | 10 | 10 | 12 | 9 | 9 | 12 | 12 | 12 |
| Storage Length (ft) | 0 | | 0 | 0 | | 150 | 100 | | 0 | 100 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 0 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | 0.95 | | | 0.98 | 0.94 | | 0.99 | | 0.96 | 0.93 | |
| Frt | | 0.962 | | | | 0.850 | | 0.992 | | | 0.976 | |
| Flt Protected | | 0.990 | | | 0.980 | | | 0.998 | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1655 | 0 | 0 | 1519 | 1280 | 0 | 2862 | 0 | 1608 | 1524 | 0 |
| Flt Permitted | | 0.895 | | | 0.563 | | | 0.638 | | 0.313 | | |
| Satd. Flow (perm) | 0 | 1483 | 0 | 0 | 858 | 1197 | 0 | 1829 | 0 | 508 | 1524 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 16 | | | | 192 | | 8 | | | 26 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 540 | | | 576 | | | 340 | | | 365 | |
| Travel Time (s) | | 12.3 | | | 13.1 | | | 7.7 | | | 8.3 | |
| Confl. Peds. (#/hr) | 29 | | 36 | 36 | | 29 | 134 | | 51 | 51 | | 134 |
| Confl. Bikes (#/hr) | | | 12 | | | 1 | | | | | | 19 |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.85 | 0.85 | 0.85 | 0.88 | 0.88 | 0.88 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 13% | 1% | 2% | 0% | 5% | 6% | 0% | 0% | 5% | 1% | 2% | 4% |
| Adj. Flow (vph) | 52 | 135 | 74 | 47 | 67 | 192 | 31 | 672 | 39 | 327 | 944 | 176 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 261 | 0 | 0 | 114 | 192 | 0 | 742 | 0 | 327 | 1120 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.01 | 1.14 | 1.14 | 1.25 | 1.25 | 1.14 | 1.30 | 1.30 | 1.14 | 1.14 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | 20 | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | 20 | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | Perm | Perm | NA | | D.P+P | NA | |
| Protected Phases | | 3 | | | 3 | | | 1 | | 4 | 1 4 | |
| Permitted Phases | 3 | | | 3 | | 3 | 1 | | | 1 | | |
| Detector Phase | 3 | 3 | | 3 | 3 | 3 | 1 | 1 | | 4 | 1 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 10.0 | 10.0 | | 4.0 | | |
| Minimum Split (s) | 22.0 | 22.0 | | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | | 22.0 | | |
| Total Split (s) | 22.0 | 22.0 | | 22.0 | 22.0 | 22.0 | 64.0 | 64.0 | | 22.0 | | |
| Total Split (%) | 20.4% | 20.4% | | 20.4% | 20.4% | 20.4% | 59.3% | 59.3% | | 20.4% | | |
| Maximum Green (s) | 18.0 | 18.0 | | 18.0 | 18.0 | 18.0 | 60.0 | 60.0 | | 18.0 | | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | | 1.0 | | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | 0.0 | | 0.0 | | 0.0 | | |
| Total Lost Time (s) | | 4.0 | | | 4.0 | 4.0 | | 4.0 | | 4.0 | | |
| Lead/Lag | Lead | Lead | | Lead | Lead | Lead | | | | Lag | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 2.0 | | |
| Recall Mode | Max | Max | | Max | Max | Max | C-Max | C-Max | | None | | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | | | |
| Flash Dont Walk (s) | 11.0 | 11.0 | | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | | | | |
| Pedestrian Calls (#/hr) | 60 | 60 | | 60 | 60 | 60 | 60 | 60 | | | | |
| Act Effct Green (s) | | 18.0 | | | 18.0 | 18.0 | | 60.0 | | 78.0 | 82.0 | |
| Actuated g/C Ratio | | 0.17 | | | 0.17 | 0.17 | | 0.56 | | 0.72 | 0.76 | |
| v/c Ratio | | 1.00 | | | 0.80 | 0.53 | | 0.73 | | 0.59 | 0.96 | |
| Control Delay | | 100.2 | | | 80.8 | 11.8 | | 23.0 | | 9.1 | 32.0 | |
| Queue Delay | | 0.0 | | | 0.0 | 0.0 | | 0.0 | | 0.0 | 42.2 | |
| Total Delay | | 100.2 | | | 80.8 | 11.8 | | 23.0 | | 9.1 | 74.2 | |
| LOS | | F | | | F | B | | C | | A | E | |
| Approach Delay | | 100.2 | | | 37.5 | | | 23.0 | | | 59.5 | |
| Approach LOS | | F | | | D | | | C | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 108 | | | |
| Actuated Cycle Length: 108 | | | |
| Offset: 18 (17%), Referenced to phase 1:NBSB, Start of Yellow | | | |
| Natural Cycle: 90 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 1.00 | | | |
| Intersection Signal Delay: 51.0 | | Intersection LOS: D | |
| Intersection Capacity Utilization 113.3% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 4: L Street/Summer Street & East 1st Street



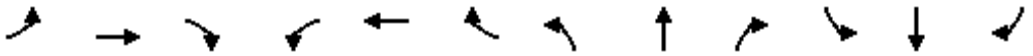


| Lane Group | EBT | WBT | WBR | NBT | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 261 | 114 | 192 | 742 | 327 | 1120 |
| v/c Ratio | 1.00 | 0.80 | 0.53 | 0.73 | 0.59 | 0.96 |
| Control Delay | 100.2 | 80.8 | 11.8 | 23.0 | 9.1 | 32.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 42.2 |
| Total Delay | 100.2 | 80.8 | 11.8 | 23.0 | 9.1 | 74.2 |
| Queue Length 50th (ft) | ~173 | 77 | 0 | 189 | 57 | 571 |
| Queue Length 95th (ft) | #319 | #161 | 53 | 258 | 87 | #1028 |
| Internal Link Dist (ft) | 460 | 496 | | 260 | | 285 |
| Turn Bay Length (ft) | | | 150 | | 100 | |
| Base Capacity (vph) | 260 | 143 | 359 | 1019 | 550 | 1163 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 166 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 1.00 | 0.80 | 0.53 | 0.73 | 0.59 | 1.12 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

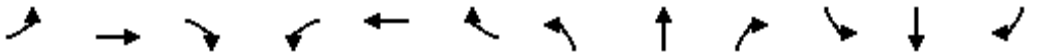
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 45 | 116 | 64 | 40 | 57 | 163 | 27 | 591 | 34 | 294 | 850 | 158 |
| Future Volume (vph) | 45 | 116 | 64 | 40 | 57 | 163 | 27 | 591 | 34 | 294 | 850 | 158 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 15 | 12 | 12 | 10 | 10 | 12 | 9 | 9 | 12 | 12 | 12 |
| Total Lost time (s) | | 4.0 | | | 4.0 | 4.0 | | 4.0 | | 4.0 | 4.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | 1.00 | | 0.95 | | 1.00 | 1.00 | |
| Frpb, ped/bikes | | 0.96 | | | 1.00 | 0.94 | | 0.99 | | 1.00 | 0.93 | |
| Flpb, ped/bikes | | 0.99 | | | 0.98 | 1.00 | | 1.00 | | 0.99 | 1.00 | |
| Frt | | 0.96 | | | 1.00 | 0.85 | | 0.99 | | 1.00 | 0.98 | |
| Flt Protected | | 0.99 | | | 0.98 | 1.00 | | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 1641 | | | 1492 | 1197 | | 2862 | | 1590 | 1524 | |
| Flt Permitted | | 0.89 | | | 0.56 | 1.00 | | 0.64 | | 0.31 | 1.00 | |
| Satd. Flow (perm) | | 1483 | | | 858 | 1197 | | 1830 | | 523 | 1524 | |
| Peak-hour factor, PHF | 0.86 | 0.86 | 0.86 | 0.85 | 0.85 | 0.85 | 0.88 | 0.88 | 0.88 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 52 | 135 | 74 | 47 | 67 | 192 | 31 | 672 | 39 | 327 | 944 | 176 |
| RTOR Reduction (vph) | 0 | 13 | 0 | 0 | 0 | 160 | 0 | 4 | 0 | 0 | 6 | 0 |
| Lane Group Flow (vph) | 0 | 248 | 0 | 0 | 114 | 32 | 0 | 738 | 0 | 327 | 1114 | 0 |
| Confl. Peds. (#/hr) | 29 | | 36 | 36 | | 29 | 134 | | 51 | 51 | | 134 |
| Confl. Bikes (#/hr) | | | 12 | | | 1 | | | | | | 19 |
| Heavy Vehicles (%) | 13% | 1% | 2% | 0% | 5% | 6% | 0% | 0% | 5% | 1% | 2% | 4% |
| Turn Type | Perm | NA | | Perm | NA | Perm | Perm | NA | | D.P+P | NA | |
| Protected Phases | | 3 | | | 3 | | | 1 | | 4 | 1 4 | |
| Permitted Phases | 3 | | | 3 | | 3 | 1 | | | 1 | | |
| Actuated Green, G (s) | | 18.0 | | | 18.0 | 18.0 | | 60.0 | | 78.0 | 82.0 | |
| Effective Green, g (s) | | 18.0 | | | 18.0 | 18.0 | | 60.0 | | 78.0 | 82.0 | |
| Actuated g/C Ratio | | 0.17 | | | 0.17 | 0.17 | | 0.56 | | 0.72 | 0.76 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | 4.0 | | 4.0 | | 4.0 | | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | 3.0 | | 3.0 | | 2.0 | | |
| Lane Grp Cap (vph) | | 247 | | | 143 | 199 | | 1016 | | 555 | 1157 | |
| v/s Ratio Prot | | | | | | | | | | 0.10 | c0.73 | |
| v/s Ratio Perm | | c0.17 | | | 0.13 | 0.03 | | 0.40 | | 0.33 | | |
| v/c Ratio | | 1.00 | | | 0.80 | 0.16 | | 0.73 | | 0.59 | 0.96 | |
| Uniform Delay, d1 | | 45.0 | | | 43.2 | 38.5 | | 17.9 | | 6.1 | 11.6 | |
| Progression Factor | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 58.0 | | | 35.6 | 1.7 | | 4.5 | | 1.0 | 18.0 | |
| Delay (s) | | 103.0 | | | 78.8 | 40.3 | | 22.4 | | 7.1 | 29.6 | |
| Level of Service | | F | | | E | D | | C | | A | C | |
| Approach Delay (s) | | 103.0 | | | 54.6 | | | 22.4 | | | 24.5 | |
| Approach LOS | | F | | | D | | | C | | | C | |

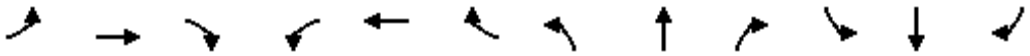
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 34.7 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 1.01 | | |
| Actuated Cycle Length (s) | 108.0 | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 113.3% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 11 | 0 | 11 | 16 | 0 | 5 | 21 | 641 | 11 | 21 | 907 | 27 |
| Future Volume (vph) | 11 | 0 | 11 | 16 | 0 | 5 | 21 | 641 | 11 | 21 | 907 | 27 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 16 | 12 | 12 | 16 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.932 | | | 0.968 | | | 0.998 | | | 0.996 | |
| Flt Protected | | 0.976 | | | 0.963 | | | 0.998 | | | 0.999 | |
| Satd. Flow (prot) | 0 | 1452 | 0 | 0 | 1488 | 0 | 0 | 1912 | 0 | 0 | 1890 | 0 |
| Flt Permitted | | 0.976 | | | 0.963 | | | 0.998 | | | 0.999 | |
| Satd. Flow (perm) | 0 | 1452 | 0 | 0 | 1488 | 0 | 0 | 1912 | 0 | 0 | 1890 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 429 | | | 453 | | | 298 | | | 340 | |
| Travel Time (s) | | 9.8 | | | 10.3 | | | 6.8 | | | 7.7 | |
| Confl. Peds. (#/hr) | 33 | | 15 | 15 | | 33 | 131 | | 44 | 44 | | 131 |
| Confl. Bikes (#/hr) | | | 1 | | | | | | 1 | | | 18 |
| Peak Hour Factor | 0.50 | 0.50 | 0.50 | 0.86 | 0.86 | 0.86 | 0.89 | 0.89 | 0.89 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% | 0% | 0% | 2% | 4% |
| Adj. Flow (vph) | 22 | 0 | 22 | 19 | 0 | 6 | 24 | 720 | 12 | 23 | 986 | 29 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 44 | 0 | 0 | 25 | 0 | 0 | 756 | 0 | 0 | 1038 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.25 | 1.14 | 1.14 | 1.25 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 0.97 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 81.6% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |

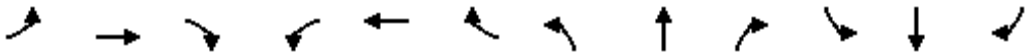


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 11 | 0 | 11 | 16 | 0 | 5 | 21 | 641 | 11 | 21 | 907 | 27 |
| Future Volume (Veh/h) | 11 | 0 | 11 | 16 | 0 | 5 | 21 | 641 | 11 | 21 | 907 | 27 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.50 | 0.50 | 0.50 | 0.86 | 0.86 | 0.86 | 0.89 | 0.89 | 0.89 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 22 | 0 | 22 | 19 | 0 | 6 | 24 | 720 | 12 | 23 | 986 | 29 |
| Pedestrians | | 131 | | | 44 | | | 15 | | | 33 | |
| Lane Width (ft) | | 10.0 | | | 10.0 | | | 16.0 | | | 16.0 | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Percent Blockage | | 9 | | | 3 | | | 2 | | | 4 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | 602 | | | 340 | |
| pX, platoon unblocked | 0.43 | 0.43 | 0.34 | 0.43 | 0.43 | 0.81 | 0.34 | | | 0.81 | | |
| vC, conflicting volume | 1990 | 2002 | 1146 | 1902 | 2010 | 803 | 1146 | | | 776 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1639 | 1665 | 451 | 1433 | 1684 | 638 | 450 | | | 605 | | |
| tC, single (s) | *4.0 | 6.5 | *4.0 | *4.0 | 6.5 | *4.0 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 79 | 100 | 91 | 84 | 100 | 99 | 93 | | | 97 | | |
| cM capacity (veh/h) | 105 | 34 | 243 | 123 | 33 | 536 | 344 | | | 771 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 44 | 25 | 756 | 1038 |
| Volume Left | 22 | 19 | 24 | 23 |
| Volume Right | 22 | 6 | 12 | 29 |
| cSH | 147 | 150 | 344 | 771 |
| Volume to Capacity | 0.30 | 0.17 | 0.07 | 0.03 |
| Queue Length 95th (ft) | 29 | 14 | 6 | 2 |
| Control Delay (s) | 39.7 | 33.7 | 2.4 | 0.9 |
| Lane LOS | E | D | A | A |
| Approach Delay (s) | 39.7 | 33.7 | 2.4 | 0.9 |
| Approach LOS | E | D | | |

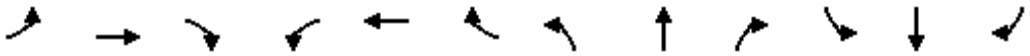
| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 2.9 | | | |
| Intersection Capacity Utilization | 81.6% | ICU Level of Service | D | |
| Analysis Period (min) | 15 | | | |

* User Entered Value



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 21 | 11 | 16 | 0 | 11 | 16 | 11 | 631 | 11 | 16 | 896 | 21 |
| Future Volume (vph) | 21 | 11 | 16 | 0 | 11 | 16 | 11 | 631 | 11 | 16 | 896 | 21 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 16 | 12 | 12 | 16 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.954 | | | 0.920 | | | 0.998 | | | 0.997 | |
| Flt Protected | | 0.979 | | | | | | 0.999 | | | 0.999 | |
| Satd. Flow (prot) | 0 | 1342 | 0 | 0 | 1321 | 0 | 0 | 1910 | 0 | 0 | 1894 | 0 |
| Flt Permitted | | 0.979 | | | | | | 0.999 | | | 0.999 | |
| Satd. Flow (perm) | 0 | 1342 | 0 | 0 | 1321 | 0 | 0 | 1910 | 0 | 0 | 1894 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 638 | | | 716 | | | 304 | | | 298 | |
| Travel Time (s) | | 14.5 | | | 16.3 | | | 6.9 | | | 6.8 | |
| Confl. Peds. (#/hr) | 23 | | 27 | 27 | | 23 | 117 | | 70 | 70 | | 117 |
| Confl. Bikes (#/hr) | | | | | | | | | 1 | | | 15 |
| Peak Hour Factor | 0.67 | 0.67 | 0.67 | 0.63 | 0.63 | 0.63 | 0.86 | 0.86 | 0.86 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% | 13% | 0% | 2% | 0% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | | | | | |
| Adj. Flow (vph) | 31 | 16 | 24 | 0 | 17 | 25 | 13 | 734 | 13 | 17 | 943 | 22 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 71 | 0 | 0 | 42 | 0 | 0 | 760 | 0 | 0 | 982 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 0.97 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 82.4% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 21 | 11 | 16 | 0 | 11 | 16 | 11 | 631 | 11 | 16 | 896 | 21 |
| Future Volume (Veh/h) | 21 | 11 | 16 | 0 | 11 | 16 | 11 | 631 | 11 | 16 | 896 | 21 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.67 | 0.67 | 0.67 | 0.63 | 0.63 | 0.63 | 0.86 | 0.86 | 0.86 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 31 | 16 | 24 | 0 | 17 | 25 | 13 | 734 | 13 | 17 | 943 | 22 |
| Pedestrians | | 117 | | | 70 | | | 27 | | | 23 | |
| Lane Width (ft) | | 10.0 | | | 10.0 | | | 16.0 | | | 16.0 | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Percent Blockage | | 8 | | | 5 | | | 3 | | | 3 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | 304 | | | 638 | |
| pX, platoon unblocked | 0.49 | 0.49 | 0.40 | 0.49 | 0.49 | 0.81 | 0.40 | | | 0.81 | | |
| vC, conflicting volume | 1928 | 1948 | 1098 | 1884 | 1952 | 834 | 1082 | | | 817 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1521 | 1562 | 488 | 1431 | 1572 | 682 | 448 | | | 661 | | |
| tC, single (s) | *4.0 | *4.0 | *4.0 | 7.1 | *4.0 | *4.0 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 74 | 88 | 91 | 100 | 87 | 95 | 97 | | | 98 | | |
| cM capacity (veh/h) | 119 | 135 | 279 | 37 | 134 | 519 | 410 | | | 726 | | |

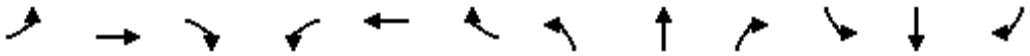
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 71 | 42 | 760 | 982 |
| Volume Left | 31 | 0 | 13 | 17 |
| Volume Right | 24 | 25 | 13 | 22 |
| cSH | 153 | 241 | 410 | 726 |
| Volume to Capacity | 0.46 | 0.17 | 0.03 | 0.02 |
| Queue Length 95th (ft) | 54 | 15 | 2 | 2 |
| Control Delay (s) | 47.5 | 23.1 | 1.0 | 0.7 |
| Lane LOS | E | C | A | A |
| Approach Delay (s) | 47.5 | 23.1 | 1.0 | 0.7 |
| Approach LOS | E | C | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 3.1 | | | |
| Intersection Capacity Utilization | 82.4% | ICU Level of Service | E | |
| Analysis Period (min) | 15 | | | |

* User Entered Value

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 53 | 144 | 53 | 11 | 155 | 44 | 80 | 544 | 27 | 71 | 630 | 205 |
| Future Volume (vph) | 53 | 144 | 53 | 11 | 155 | 44 | 80 | 544 | 27 | 71 | 630 | 205 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 11 | 12 | 12 | 16 | 12 | 10 | 10 | 10 | 10 | 10 | 10 |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 0 | | 250 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 0 | | 1 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 0.95 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Ped Bike Factor | | 0.93 | | | 0.94 | | | 1.00 | | | 0.97 | |
| Frt | | 0.968 | | | 0.972 | | | 0.994 | | | 0.966 | |
| Flt Protected | | 0.989 | | | 0.997 | | | 0.994 | | | 0.996 | |
| Satd. Flow (prot) | 0 | 2556 | 0 | 0 | 1543 | 0 | 0 | 2837 | 0 | 0 | 2670 | 0 |
| Flt Permitted | | 0.565 | | | 0.972 | | | 0.616 | | | 0.756 | |
| Satd. Flow (perm) | 0 | 1437 | 0 | 0 | 1488 | 0 | 0 | 1754 | 0 | 0 | 2025 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 642 | | | 187 | | | 618 | | | 304 | |
| Travel Time (s) | | 14.6 | | | 4.3 | | | 14.0 | | | 6.9 | |
| Confl. Peds. (#/hr) | 61 | | 89 | 89 | | 61 | 154 | | 61 | 61 | | 154 |
| Confl. Bikes (#/hr) | | | 7 | | | 1 | | | 1 | | | 6 |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.88 | 0.88 | 0.88 | 0.86 | 0.86 | 0.86 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 2% | 9% | 0% | 0% | 6% | 0% | 0% | 0% | 3% | 13% | 0% | 1% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Adj. Flow (vph) | 60 | 162 | 60 | 13 | 176 | 50 | 93 | 633 | 31 | 76 | 677 | 220 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 282 | 0 | 0 | 239 | 0 | 0 | 757 | 0 | 0 | 973 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.27 | 1.14 | 1.14 | 1.12 | 1.14 | 1.25 | 1.33 | 1.25 | 1.25 | 1.33 | 1.25 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |

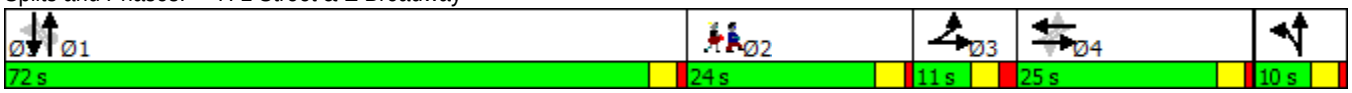
| Lane Group | Ø2 |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | |
| Future Volume (vph) | |
| Ideal Flow (vphpl) | |
| Lane Width (ft) | |
| Storage Length (ft) | |
| Storage Lanes | |
| Taper Length (ft) | |
| Lane Util. Factor | |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Right Turn on Red | |
| Satd. Flow (RTOR) | |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | |
| Heavy Vehicles (%) | |
| Parking (#/hr) | |
| Adj. Flow (vph) | |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | |
| Enter Blocked Intersection | |
| Lane Alignment | |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | |
| Turning Speed (mph) | |
| Number of Detectors | |
| Detector Template | |
| Leading Detector (ft) | |
| Trailing Detector (ft) | |
| Detector 1 Position(ft) | |
| Detector 1 Size(ft) | |
| Detector 1 Type | |
| Detector 1 Channel | |
| Detector 1 Extend (s) | |
| Detector 1 Queue (s) | |
| Detector 1 Delay (s) | |
| Detector 2 Position(ft) | |
| Detector 2 Size(ft) | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | D.P+P | NA | | Perm | NA | | D.P+P | NA | | Perm | NA | |
| Protected Phases | 3 | 3 4 | | | 4 | | 5 | 1 5 | | | 1 | |
| Permitted Phases | 4 | | | 4 | | | 1 | | | 1 | | |
| Detector Phase | 3 | 3 4 | | 4 | 4 | | 5 | 1 5 | | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | | | 10.0 | 10.0 | | 6.0 | | | 30.0 | 30.0 | |
| Minimum Split (s) | 10.0 | | | 14.0 | 14.0 | | 10.0 | | | 34.0 | 34.0 | |
| Total Split (s) | 11.0 | | | 25.0 | 25.0 | | 10.0 | | | 72.0 | 72.0 | |
| Total Split (%) | 7.7% | | | 17.6% | 17.6% | | 7.0% | | | 50.7% | 50.7% | |
| Maximum Green (s) | 6.0 | | | 21.0 | 21.0 | | 6.0 | | | 68.0 | 68.0 | |
| Yellow Time (s) | 3.0 | | | 3.0 | 3.0 | | 3.0 | | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | | | 1.0 | 1.0 | | 1.0 | | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | | | | | 0.0 | | | | | | 0.0 | |
| Total Lost Time (s) | | | | | 4.0 | | | | | | 4.0 | |
| Lead/Lag | Lead | | | Lag | Lag | | | | | Lead | Lead | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | | | 2.0 | 2.0 | | 2.0 | | | 2.0 | 2.0 | |
| Recall Mode | Max | | | Max | Max | | Max | | | Max | Max | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 26.1 | | | 21.1 | | | 74.4 | | | 68.4 | |
| Actuated g/C Ratio | | 0.19 | | | 0.15 | | | 0.54 | | | 0.50 | |
| v/c Ratio | | 0.87 | | | 1.04 | | | 0.76 | | | 0.97 | |
| Control Delay | | 78.2 | | | 127.5 | | | 29.8 | | | 55.8 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 78.2 | | | 127.5 | | | 29.8 | | | 55.8 | |
| LOS | | E | | | F | | | C | | | E | |
| Approach Delay | | 78.2 | | | 127.5 | | | 29.8 | | | 55.8 | |
| Approach LOS | | E | | | F | | | C | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 142 | | | |
| Actuated Cycle Length: 137.2 | | | |
| Natural Cycle: 145 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 1.04 | | | |
| Intersection Signal Delay: 57.5 | | Intersection LOS: E | |
| Intersection Capacity Utilization 92.6% | | ICU Level of Service F | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 7: L Street & E Broadway



| Lane Group | Ø2 |
|---|---|
| Detector 2 Type | |
| Detector 2 Channel | |
| Detector 2 Extend (s) | |
| Turn Type | |
| Protected Phases | 2 |
| Permitted Phases | |
| Detector Phase | |
| Switch Phase | |
| Minimum Initial (s) | 4.0 |
| Minimum Split (s) | 24.0 |
| Total Split (s) | 24.0 |
| Total Split (%) | 17% |
| Maximum Green (s) | 20.0 |
| Yellow Time (s) | 3.0 |
| All-Red Time (s) | 1.0 |
| Lost Time Adjust (s) | |
| Total Lost Time (s) | |
| Lead/Lag | Lag |
| Lead-Lag Optimize? | |
| Vehicle Extension (s) | 2.0 |
| Recall Mode | None |
| Walk Time (s) | 8.0 |
| Flash Dont Walk (s) | 12.0 |
| Pedestrian Calls (#/hr) | 46 |
| Act Effct Green (s) | |
| Actuated g/C Ratio | |
| v/c Ratio | |
| Control Delay | |
| Queue Delay | |
| Total Delay | |
| LOS | |
| Approach Delay | |
| Approach LOS | |

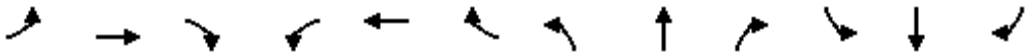
| Intersection Summary |
|---|

| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 282 | 239 | 757 | 973 |
| v/c Ratio | 0.87 | 1.04 | 0.76 | 0.97 |
| Control Delay | 78.2 | 127.5 | 29.8 | 55.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 78.2 | 127.5 | 29.8 | 55.8 |
| Queue Length 50th (ft) | 121 | ~247 | 218 | ~468 |
| Queue Length 95th (ft) | #205 | #408 | 256 | #628 |
| Internal Link Dist (ft) | 562 | 107 | 538 | 224 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 323 | 229 | 998 | 1008 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.87 | 1.04 | 0.76 | 0.97 |

Intersection Summary

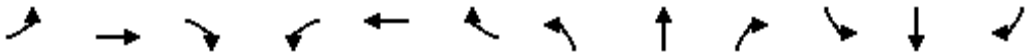
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



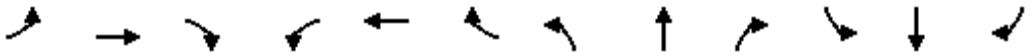
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 53 | 144 | 53 | 11 | 155 | 44 | 80 | 544 | 27 | 71 | 630 | 205 |
| Future Volume (vph) | 53 | 144 | 53 | 11 | 155 | 44 | 80 | 544 | 27 | 71 | 630 | 205 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 11 | 12 | 12 | 16 | 12 | 10 | 10 | 10 | 10 | 10 | 10 |
| Total Lost time (s) | | 5.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 0.95 | | | 1.00 | | | 0.95 | | | 0.95 | |
| Frpb, ped/bikes | | 0.95 | | | 0.95 | | | 1.00 | | | 0.98 | |
| Flpb, ped/bikes | | 0.99 | | | 0.99 | | | 1.00 | | | 1.00 | |
| Frt | | 0.97 | | | 0.97 | | | 0.99 | | | 0.97 | |
| Flt Protected | | 0.99 | | | 1.00 | | | 0.99 | | | 1.00 | |
| Satd. Flow (prot) | | 2540 | | | 1529 | | | 2833 | | | 2670 | |
| Flt Permitted | | 0.56 | | | 0.97 | | | 0.62 | | | 0.76 | |
| Satd. Flow (perm) | | 1450 | | | 1490 | | | 1757 | | | 2027 | |
| Peak-hour factor, PHF | 0.89 | 0.89 | 0.89 | 0.88 | 0.88 | 0.88 | 0.86 | 0.86 | 0.86 | 0.93 | 0.93 | 0.93 |
| Adj. Flow (vph) | 60 | 162 | 60 | 12 | 176 | 50 | 93 | 633 | 31 | 76 | 677 | 220 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 282 | 0 | 0 | 239 | 0 | 0 | 757 | 0 | 0 | 973 | 0 |
| Confl. Peds. (#/hr) | 61 | | 89 | 89 | | 61 | 154 | | 61 | 61 | | 154 |
| Confl. Bikes (#/hr) | | | 7 | | | 1 | | | 1 | | | 6 |
| Heavy Vehicles (%) | 2% | 9% | 0% | 0% | 6% | 0% | 0% | 0% | 3% | 13% | 0% | 1% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Turn Type | D.P+P | NA | | Perm | NA | | D.P+P | NA | | Perm | NA | |
| Protected Phases | 3 | 3 4 | | | 4 | | 5 | 1 5 | | | 1 | |
| Permitted Phases | 4 | | | 4 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 27.1 | | | 21.1 | | | 74.4 | | | 68.4 | |
| Effective Green, g (s) | | 27.1 | | | 21.1 | | | 74.4 | | | 68.4 | |
| Actuated g/C Ratio | | 0.20 | | | 0.15 | | | 0.54 | | | 0.50 | |
| Clearance Time (s) | | | | | 4.0 | | | | | | 4.0 | |
| Vehicle Extension (s) | | | | | 2.0 | | | | | | 2.0 | |
| Lane Grp Cap (vph) | | 332 | | | 227 | | | 994 | | | 1004 | |
| v/s Ratio Prot | | c0.04 | | | | | | c0.03 | | | | |
| v/s Ratio Perm | | 0.13 | | | c0.16 | | | 0.38 | | | c0.48 | |
| v/c Ratio | | 0.85 | | | 1.05 | | | 0.76 | | | 0.97 | |
| Uniform Delay, d1 | | 53.5 | | | 58.5 | | | 24.9 | | | 33.8 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 22.9 | | | 74.3 | | | 5.5 | | | 21.9 | |
| Delay (s) | | 76.3 | | | 132.8 | | | 30.4 | | | 55.6 | |
| Level of Service | | E | | | F | | | C | | | E | |
| Approach Delay (s) | | 76.3 | | | 132.8 | | | 30.4 | | | 55.6 | |
| Approach LOS | | E | | | F | | | C | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 57.9 | HCM 2000 Level of Service | E |
| HCM 2000 Volume to Capacity ratio | 0.84 | | |
| Actuated Cycle Length (s) | 138.0 | Sum of lost time (s) | 21.0 |
| Intersection Capacity Utilization | 92.6% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 21 | 219 | 0 | 0 | 237 | 5 | 48 | 11 | 16 | 5 | 0 | 53 |
| Future Volume (vph) | 21 | 219 | 0 | 0 | 237 | 5 | 48 | 11 | 16 | 5 | 0 | 53 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 13 | 12 | 10 | 10 | 12 | 12 | 16 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | | | 0.997 | | | 0.912 | | | 0.876 | |
| Flt Protected | | 0.996 | | | | | 0.950 | | | | 0.996 | |
| Satd. Flow (prot) | 0 | 1465 | 0 | 0 | 1555 | 0 | 1338 | 1243 | 0 | 0 | 1494 | 0 |
| Flt Permitted | | 0.996 | | | | | 0.950 | | | | 0.996 | |
| Satd. Flow (perm) | 0 | 1465 | 0 | 0 | 1555 | 0 | 1338 | 1243 | 0 | 0 | 1494 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 1822 | | | 540 | | | 382 | | | 354 | |
| Travel Time (s) | | 41.4 | | | 12.3 | | | 8.7 | | | 8.0 | |
| Confl. Peds. (#/hr) | 8 | | 18 | 18 | | 8 | 13 | | 28 | 28 | | 13 |
| Confl. Bikes (#/hr) | | | 5 | | | 2 | | | 1 | | | |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.88 | 0.88 | 0.88 | 0.81 | 0.81 | 0.81 | 0.70 | 0.70 | 0.70 |
| Heavy Vehicles (%) | 32% | 2% | 0% | 0% | 2% | 0% | 2% | 13% | 0% | 0% | 0% | 2% |
| Parking (#/hr) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Adj. Flow (vph) | 25 | 258 | 0 | 0 | 269 | 6 | 59 | 14 | 20 | 7 | 0 | 76 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 283 | 0 | 0 | 275 | 0 | 59 | 34 | 0 | 0 | 83 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 10 | | | 10 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.30 | 1.14 | 1.14 | 1.25 | 1.14 | 1.42 | 1.42 | 1.14 | 1.14 | 1.12 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 50.2% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

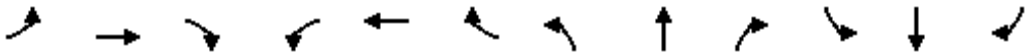


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 21 | 219 | 0 | 0 | 237 | 5 | 48 | 11 | 16 | 5 | 0 | 53 |
| Future Volume (Veh/h) | 21 | 219 | 0 | 0 | 237 | 5 | 48 | 11 | 16 | 5 | 0 | 53 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.88 | 0.88 | 0.88 | 0.81 | 0.81 | 0.81 | 0.70 | 0.70 | 0.70 |
| Hourly flow rate (vph) | 25 | 258 | 0 | 0 | 269 | 6 | 59 | 14 | 20 | 7 | 0 | 76 |
| Pedestrians | | 13 | | | 28 | | | 18 | | | 8 | |
| Lane Width (ft) | | 12.0 | | | 13.0 | | | 10.0 | | | 16.0 | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Percent Blockage | | 1 | | | 3 | | | 1 | | | 1 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 540 | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 283 | | | 276 | | | 687 | 609 | 304 | 643 | 606 | 293 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 283 | | | 276 | | | 687 | 609 | 304 | 643 | 606 | 293 |
| tC, single (s) | 4.4 | | | 4.1 | | | *6.5 | 6.6 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.5 | | | 2.2 | | | 3.5 | 4.1 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 100 | | | 83 | 96 | 97 | 98 | 100 | 90 |
| cM capacity (veh/h) | 1115 | | | 1282 | | | 344 | 378 | 713 | 343 | 396 | 732 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | SB 1 |
|---|---|---|---|---|---|
| Volume Total | 283 | 275 | 59 | 34 | 83 |
| Volume Left | 25 | 0 | 59 | 0 | 7 |
| Volume Right | 0 | 6 | 0 | 20 | 76 |
| cSH | 1115 | 1700 | 344 | 523 | 668 |
| Volume to Capacity | 0.02 | 0.16 | 0.17 | 0.07 | 0.12 |
| Queue Length 95th (ft) | 2 | 0 | 15 | 5 | 11 |
| Control Delay (s) | 0.9 | 0.0 | 17.6 | 12.4 | 11.2 |
| Lane LOS | A | | C | B | B |
| Approach Delay (s) | 0.9 | 0.0 | 15.7 | | 11.2 |
| Approach LOS | | | C | | B |

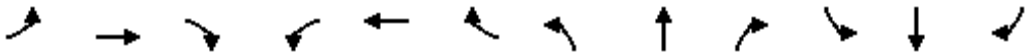
| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 3.6 | | | |
| Intersection Capacity Utilization | 50.2% | ICU Level of Service | | A |
| Analysis Period (min) | 15 | | | |

* User Entered Value



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 22 | 422 | 0 | 0 | 195 | 0 | 37 | 0 | 21 | 0 | 0 | 34 |
| Future Volume (vph) | 22 | 422 | 0 | 0 | 195 | 0 | 37 | 0 | 21 | 0 | 0 | 34 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 13 | 12 | 12 | 13 | 12 | 10 | 12 | 12 | 12 | 12 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | | | | | | 0.951 | | | 0.865 | |
| Flt Protected | | 0.998 | | | | | | 0.969 | | | | |
| Satd. Flow (prot) | 0 | 1747 | 0 | 0 | 1667 | 0 | 0 | 1546 | 0 | 0 | 1479 | 0 |
| Flt Permitted | | 0.998 | | | | | | 0.969 | | | | |
| Satd. Flow (perm) | 0 | 1747 | 0 | 0 | 1667 | 0 | 0 | 1546 | 0 | 0 | 1479 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 576 | | | 561 | | | 457 | | | 244 | |
| Travel Time (s) | | 13.1 | | | 12.8 | | | 10.4 | | | 5.5 | |
| Confl. Peds. (#/hr) | | | 13 | 13 | | | 134 | | 51 | | | |
| Confl. Bikes (#/hr) | | | 17 | | | | | | 2 | | | |
| Peak Hour Factor | 0.92 | 0.85 | 0.85 | 0.88 | 0.88 | 0.92 | 0.81 | 0.92 | 0.81 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 0% | 1% | 0% | 0% | 6% | 0% | 3% | 0% | 0% | 0% | 0% | 0% |
| Adj. Flow (vph) | 24 | 496 | 0 | 0 | 222 | 0 | 46 | 0 | 26 | 0 | 0 | 37 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 520 | 0 | 0 | 222 | 0 | 0 | 72 | 0 | 0 | 37 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.10 | 1.14 | 1.14 | 1.10 | 1.14 | 1.25 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |

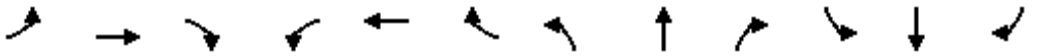
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 60.5% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 22 | 422 | 0 | 0 | 195 | 0 | 37 | 0 | 21 | 0 | 0 | 34 |
| Future Volume (Veh/h) | 22 | 422 | 0 | 0 | 195 | 0 | 37 | 0 | 21 | 0 | 0 | 34 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.92 | 0.85 | 0.85 | 0.88 | 0.88 | 0.92 | 0.81 | 0.92 | 0.81 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 24 | 496 | 0 | 0 | 222 | 0 | 46 | 0 | 26 | 0 | 0 | 37 |
| Pedestrians | | 134 | | | 51 | | | 13 | | | | |
| Lane Width (ft) | | 13.0 | | | 13.0 | | | 12.0 | | | | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | | |
| Percent Blockage | | 12 | | | 5 | | | 1 | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 576 | | | | | | | | | | |
| pX, platoon unblocked | | | | 0.90 | | | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | |
| vC, conflicting volume | 222 | | | 509 | | | 950 | 779 | 560 | 843 | 779 | 356 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 222 | | | 402 | | | 890 | 701 | 458 | 772 | 701 | 356 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 100 | | | 76 | 100 | 95 | 100 | 100 | 94 |
| cM capacity (veh/h) | 1359 | | | 1042 | | | 189 | 320 | 517 | 255 | 320 | 609 |

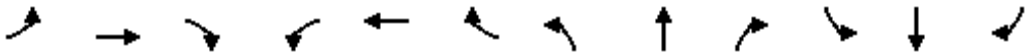
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 520 | 222 | 72 | 37 |
| Volume Left | 24 | 0 | 46 | 0 |
| Volume Right | 0 | 0 | 26 | 37 |
| cSH | 1359 | 1700 | 245 | 609 |
| Volume to Capacity | 0.02 | 0.13 | 0.29 | 0.06 |
| Queue Length 95th (ft) | 1 | 0 | 30 | 5 |
| Control Delay (s) | 0.5 | 0.0 | 25.7 | 11.3 |
| Lane LOS | A | | D | B |
| Approach Delay (s) | 0.5 | 0.0 | 25.7 | 11.3 |
| Approach LOS | | | D | B |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 3.0 | | |
| Intersection Capacity Utilization | 60.5% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 27 | 406 | 0 | 0 | 199 | 87 | 37 | 38 | 21 | 377 | 0 | 68 |
| Future Volume (vph) | 27 | 406 | 0 | 0 | 199 | 87 | 37 | 38 | 21 | 377 | 0 | 68 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 15 | 12 | 12 | 16 | 12 | 12 | 16 | 12 | 12 | 14 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | | | 0.959 | | | 0.971 | | | 0.979 | |
| Flt Protected | | 0.997 | | | | | | 0.981 | | | 0.959 | |
| Satd. Flow (prot) | 0 | 1630 | 0 | 0 | 1804 | 0 | 0 | 1763 | 0 | 0 | 1705 | 0 |
| Flt Permitted | | 0.997 | | | | | | 0.981 | | | 0.959 | |
| Satd. Flow (perm) | 0 | 1630 | 0 | 0 | 1804 | 0 | 0 | 1763 | 0 | 0 | 1705 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 848 | | | 1822 | | | 402 | | | 2052 | |
| Travel Time (s) | | 19.3 | | | 41.4 | | | 9.1 | | | 46.6 | |
| Confl. Peds. (#/hr) | 4 | | | 5 | | 4 | 1 | | 24 | 24 | | 1 |
| Confl. Bikes (#/hr) | | | 5 | | | 1 | | | 1 | | | 5 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.93 | 0.93 | 0.93 | 0.87 | 0.87 | 0.87 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 12% | 3% | 0% | 0% | 3% | 3% | 3% | 9% | 0% | 0% | 0% | 3% |
| Parking (#/hr) | | 0 | 0 | | | | | | | | | |
| Adj. Flow (vph) | 31 | 461 | 0 | 0 | 214 | 94 | 43 | 44 | 24 | 405 | 0 | 73 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 492 | 0 | 0 | 308 | 0 | 0 | 111 | 0 | 0 | 478 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.16 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 0.97 | 1.14 | 1.14 | 1.05 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |

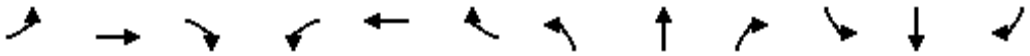
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 87.6% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 27 | 406 | 0 | 0 | 199 | 87 | 37 | 38 | 21 | 377 | 0 | 68 |
| Future Volume (Veh/h) | 27 | 406 | 0 | 0 | 199 | 87 | 37 | 38 | 21 | 377 | 0 | 68 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.93 | 0.93 | 0.93 | 0.87 | 0.87 | 0.87 | 0.93 | 0.93 | 0.93 |
| Hourly flow rate (vph) | 31 | 461 | 0 | 0 | 214 | 94 | 43 | 44 | 24 | 405 | 0 | 73 |
| Pedestrians | | 1 | | | 24 | | | 5 | | | 4 | |
| Lane Width (ft) | | 15.0 | | | 16.0 | | | 16.0 | | | 14.0 | |
| Walking Speed (ft/s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Percent Blockage | | 0 | | | 3 | | | 1 | | | 0 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 312 | | | 466 | | | 863 | 840 | 490 | 858 | 793 | 266 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 312 | | | 466 | | | 863 | 840 | 490 | 858 | 793 | 266 |
| tC, single (s) | 4.2 | | | 4.1 | | | 7.1 | 6.6 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.3 | | | 2.2 | | | 3.5 | 4.1 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 97 | | | 100 | | | 82 | 84 | 96 | 0 | 100 | 90 |
| cM capacity (veh/h) | 1189 | | | 1100 | | | 239 | 284 | 564 | 222 | 312 | 766 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 492 | 308 | 111 | 478 |
| Volume Left | 31 | 0 | 43 | 405 |
| Volume Right | 0 | 94 | 24 | 73 |
| cSH | 1189 | 1100 | 294 | 249 |
| Volume to Capacity | 0.03 | 0.00 | 0.38 | 1.92 |
| Queue Length 95th (ft) | 2 | 0 | 42 | 847 |
| Control Delay (s) | 0.8 | 0.0 | 24.5 | 460.2 |
| Lane LOS | A | | C | F |
| Approach Delay (s) | 0.8 | 0.0 | 24.5 | 460.2 |
| Approach LOS | | | C | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 160.6 | | |
| Intersection Capacity Utilization | 87.6% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 16 | 21 | 0 | 5 | 21 | 44 | 21 | 591 | 16 | 21 | 614 | 16 |
| Future Volume (vph) | 16 | 21 | 0 | 5 | 21 | 44 | 21 | 591 | 16 | 21 | 614 | 16 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | 0.97 | | | 0.91 | | | 1.00 | | | 1.00 | |
| Frt | | | | | 0.915 | | | 0.997 | | | 0.997 | |
| Flt Protected | | 0.979 | | | 0.996 | | | 0.998 | | | 0.998 | |
| Satd. Flow (prot) | 0 | 1406 | 0 | 0 | 1195 | 0 | 0 | 1410 | 0 | 0 | 1410 | 0 |
| Flt Permitted | | 0.856 | | | 0.981 | | | 0.971 | | | 0.973 | |
| Satd. Flow (perm) | 0 | 1190 | 0 | 0 | 1169 | 0 | 0 | 1370 | 0 | 0 | 1374 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | 70 | | | 2 | | | 2 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 659 | | | 649 | | | 380 | | | 618 | |
| Travel Time (s) | | 15.0 | | | 14.8 | | | 8.6 | | | 14.0 | |
| Confl. Peds. (#/hr) | 33 | | 29 | 29 | | 33 | 143 | | 60 | 60 | | 143 |
| Confl. Bikes (#/hr) | | | | | | | | | 1 | | | 7 |
| Peak Hour Factor | 0.80 | 0.80 | 0.80 | 0.52 | 0.52 | 0.52 | 0.95 | 0.95 | 0.95 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% | 8% | 0% | 1% | 0% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Adj. Flow (vph) | 20 | 26 | 0 | 10 | 40 | 85 | 22 | 622 | 17 | 21 | 627 | 16 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 46 | 0 | 0 | 135 | 0 | 0 | 661 | 0 | 0 | 664 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 | 1.14 | 1.42 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |

| Lane Group | Ø2 |
|---|---|
| Lane Configurations | |
| Traffic Volume (vph) | |
| Future Volume (vph) | |
| Ideal Flow (vphpl) | |
| Lane Width (ft) | |
| Lane Util. Factor | |
| Ped Bike Factor | |
| Frt | |
| Flt Protected | |
| Satd. Flow (prot) | |
| Flt Permitted | |
| Satd. Flow (perm) | |
| Right Turn on Red | |
| Satd. Flow (RTOR) | |
| Link Speed (mph) | |
| Link Distance (ft) | |
| Travel Time (s) | |
| Confl. Peds. (#/hr) | |
| Confl. Bikes (#/hr) | |
| Peak Hour Factor | |
| Heavy Vehicles (%) | |
| Parking (#/hr) | |
| Adj. Flow (vph) | |
| Shared Lane Traffic (%) | |
| Lane Group Flow (vph) | |
| Enter Blocked Intersection | |
| Lane Alignment | |
| Median Width(ft) | |
| Link Offset(ft) | |
| Crosswalk Width(ft) | |
| Two way Left Turn Lane | |
| Headway Factor | |
| Turning Speed (mph) | |
| Number of Detectors | |
| Detector Template | |
| Leading Detector (ft) | |
| Trailing Detector (ft) | |
| Detector 1 Position(ft) | |
| Detector 1 Size(ft) | |
| Detector 1 Type | |
| Detector 1 Channel | |
| Detector 1 Extend (s) | |
| Detector 1 Queue (s) | |
| Detector 1 Delay (s) | |
| Detector 2 Position(ft) | |
| Detector 2 Size(ft) | |
| Detector 2 Type | |
| Detector 2 Channel | |
| Detector 2 Extend (s) | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Detector Phase | 5 | 5 | | 5 | 5 | | 1 | 1 | | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | |
| Minimum Split (s) | 12.0 | 12.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Total Split (s) | 18.0 | 18.0 | | 18.0 | 18.0 | | 54.0 | 54.0 | | 54.0 | 54.0 | |
| Total Split (%) | 17.6% | 17.6% | | 17.6% | 17.6% | | 52.9% | 52.9% | | 52.9% | 52.9% | |
| Maximum Green (s) | 14.0 | 14.0 | | 14.0 | 14.0 | | 50.0 | 50.0 | | 50.0 | 50.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Lost Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lead/Lag | | | | | | | Lead | Lead | | Lead | Lead | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | Max | Max | | Max | Max | | Max | Max | | Max | Max | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| Act Effct Green (s) | | 14.3 | | | 14.3 | | | 51.0 | | | 51.0 | |
| Actuated g/C Ratio | | 0.15 | | | 0.15 | | | 0.53 | | | 0.53 | |
| v/c Ratio | | 0.26 | | | 0.58 | | | 0.91 | | | 0.91 | |
| Control Delay | | 43.9 | | | 32.6 | | | 42.4 | | | 42.6 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 43.9 | | | 32.6 | | | 42.4 | | | 42.6 | |
| LOS | | D | | | C | | | D | | | D | |
| Approach Delay | | 43.9 | | | 32.6 | | | 42.4 | | | 42.6 | |
| Approach LOS | | D | | | C | | | D | | | D | |

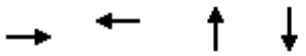
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 102 | | | |
| Actuated Cycle Length: 96 | | | |
| Natural Cycle: 90 | | | |
| Control Type: Semi Act-Uncoord | | | |
| Maximum v/c Ratio: 0.91 | | | |
| Intersection Signal Delay: 41.6 | | Intersection LOS: D | |
| Intersection Capacity Utilization 61.0% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 11: L Street & E 5th Street



| Lane Group | Ø2 |
|---|---|
| Turn Type | |
| Protected Phases | 2 |
| Permitted Phases | |
| Detector Phase | |
| Switch Phase | |
| Minimum Initial (s) | 4.0 |
| Minimum Split (s) | 30.0 |
| Total Split (s) | 30.0 |
| Total Split (%) | 29% |
| Maximum Green (s) | 26.0 |
| Yellow Time (s) | 3.0 |
| All-Red Time (s) | 1.0 |
| Lost Time Adjust (s) | |
| Total Lost Time (s) | |
| Lead/Lag | Lag |
| Lead-Lag Optimize? | |
| Vehicle Extension (s) | 2.0 |
| Recall Mode | None |
| Walk Time (s) | 14.0 |
| Flash Dont Walk (s) | 12.0 |
| Pedestrian Calls (#/hr) | 66 |
| Act Effct Green (s) | |
| Actuated g/C Ratio | |
| v/c Ratio | |
| Control Delay | |
| Queue Delay | |
| Total Delay | |
| LOS | |
| Approach Delay | |
| Approach LOS | |

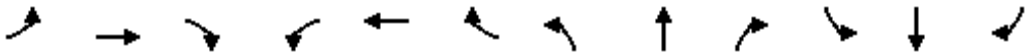
| Intersection Summary |
|---|



| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 46 | 135 | 661 | 664 |
| v/c Ratio | 0.26 | 0.58 | 0.91 | 0.91 |
| Control Delay | 43.9 | 32.6 | 42.4 | 42.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 43.9 | 32.6 | 42.4 | 42.6 |
| Queue Length 50th (ft) | 27 | 39 | 407 | 409 |
| Queue Length 95th (ft) | 55 | 35 | #663 | #666 |
| Internal Link Dist (ft) | 579 | 569 | 300 | 538 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 177 | 233 | 728 | 730 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.26 | 0.58 | 0.91 | 0.91 |

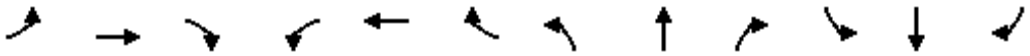
Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 16 | 21 | 0 | 5 | 21 | 44 | 21 | 591 | 16 | 21 | 614 | 16 |
| Future Volume (vph) | 16 | 21 | 0 | 5 | 21 | 44 | 21 | 591 | 16 | 21 | 614 | 16 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Total Lost time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Frpb, ped/bikes | | 1.00 | | | 0.92 | | | 1.00 | | | 1.00 | |
| Flpb, ped/bikes | | 0.97 | | | 0.99 | | | 1.00 | | | 1.00 | |
| Frt | | 1.00 | | | 0.92 | | | 1.00 | | | 1.00 | |
| Flt Protected | | 0.98 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | | 1363 | | | 1195 | | | 1408 | | | 1410 | |
| Flt Permitted | | 0.86 | | | 0.98 | | | 0.97 | | | 0.97 | |
| Satd. Flow (perm) | | 1192 | | | 1176 | | | 1369 | | | 1374 | |
| Peak-hour factor, PHF | 0.80 | 0.80 | 0.80 | 0.52 | 0.52 | 0.52 | 0.95 | 0.95 | 0.95 | 0.98 | 0.98 | 0.98 |
| Adj. Flow (vph) | 20 | 26 | 0 | 10 | 40 | 85 | 22 | 622 | 17 | 21 | 627 | 16 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 60 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| Lane Group Flow (vph) | 0 | 46 | 0 | 0 | 75 | 0 | 0 | 660 | 0 | 0 | 663 | 0 |
| Confl. Peds. (#/hr) | 33 | | 29 | 29 | | 33 | 143 | | 60 | 60 | | 143 |
| Confl. Bikes (#/hr) | | | | | | | | | 1 | | | 7 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% | 8% | 0% | 1% | 0% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 14.3 | | | 14.3 | | | 51.0 | | | 51.0 | |
| Effective Green, g (s) | | 14.3 | | | 14.3 | | | 51.0 | | | 51.0 | |
| Actuated g/C Ratio | | 0.15 | | | 0.15 | | | 0.53 | | | 0.53 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | | | 2.0 | | | 2.0 | |
| Lane Grp Cap (vph) | | 175 | | | 173 | | | 720 | | | 723 | |
| v/s Ratio Prot | | | | | | | | | | | | |
| v/s Ratio Perm | | 0.04 | | | c0.06 | | | 0.48 | | | c0.48 | |
| v/c Ratio | | 0.26 | | | 0.44 | | | 0.92 | | | 0.92 | |
| Uniform Delay, d1 | | 36.6 | | | 37.6 | | | 21.0 | | | 21.0 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 3.6 | | | 7.8 | | | 18.4 | | | 18.4 | |
| Delay (s) | | 40.3 | | | 45.4 | | | 39.5 | | | 39.4 | |
| Level of Service | | D | | | D | | | D | | | D | |
| Approach Delay (s) | | 40.3 | | | 45.4 | | | 39.5 | | | 39.4 | |
| Approach LOS | | D | | | D | | | D | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 40.0 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.62 | | |
| Actuated Cycle Length (s) | 96.9 | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 61.0% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 21 | 27 | 16 | 5 | 16 | 11 | 16 | 538 | 16 | 21 | 511 | 28 |
| Future Volume (vph) | 21 | 27 | 16 | 5 | 16 | 11 | 16 | 538 | 16 | 21 | 511 | 28 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 16 | 12 | 12 | 15 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | 0.96 | | | 0.97 | | | 1.00 | | | 0.99 | |
| Frt | | 0.967 | | | 0.955 | | | 0.996 | | | 0.993 | |
| Flt Protected | | 0.984 | | | 0.992 | | | 0.999 | | | 0.998 | |
| Satd. Flow (prot) | 0 | 1489 | 0 | 0 | 1513 | 0 | 0 | 1584 | 0 | 0 | 1552 | 0 |
| Flt Permitted | | 0.922 | | | 0.969 | | | 0.981 | | | 0.971 | |
| Satd. Flow (perm) | 0 | 1380 | 0 | 0 | 1458 | 0 | 0 | 1553 | 0 | 0 | 1509 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 18 | | | 12 | | | 4 | | | 7 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 602 | | | 677 | | | 676 | | | 535 | |
| Travel Time (s) | | 13.7 | | | 15.4 | | | 15.4 | | | 12.2 | |
| Confl. Peds. (#/hr) | 15 | | 38 | 38 | | 15 | 58 | | 32 | 32 | | 58 |
| Confl. Bikes (#/hr) | | | | | | | | | 1 | | | 2 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.89 | 0.89 | 0.89 | 0.87 | 0.87 | 0.87 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 10% | 12% | 0% | 0% | 8% | 0% | 0% | 0% | 0% | 0% | 1% | 4% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | | | | | |
| Adj. Flow (vph) | 24 | 31 | 18 | 6 | 18 | 12 | 18 | 618 | 18 | 23 | 568 | 31 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 73 | 0 | 0 | 36 | 0 | 0 | 654 | 0 | 0 | 622 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.14 | 1.12 | 1.14 | 1.14 | 1.16 | 1.14 | 1.14 | 1.25 | 1.14 | 1.14 | 1.25 | 1.14 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Detector Phase | 5 | 5 | | 5 | 5 | | 1 | 1 | | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 6.0 | 6.0 | | 6.0 | 6.0 | | 20.0 | 20.0 | | 20.0 | 20.0 | |
| Minimum Split (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 24.0 | 24.0 | | 24.0 | 24.0 | |
| Total Split (s) | 24.0 | 24.0 | | 24.0 | 24.0 | | 54.0 | 54.0 | | 54.0 | 54.0 | |
| Total Split (%) | 30.8% | 30.8% | | 30.8% | 30.8% | | 69.2% | 69.2% | | 69.2% | 69.2% | |
| Maximum Green (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 50.0 | 50.0 | | 50.0 | 50.0 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Lost Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | Max | Max | | Max | Max | | Max | Max | | Max | Max | |
| Walk Time (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | |
| Flash Dont Walk (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | | 8.0 | 8.0 | |
| Pedestrian Calls (#/hr) | 13 | 13 | | 13 | 13 | | 23 | 23 | | 23 | 23 | |
| Act Effct Green (s) | | 20.0 | | | 20.0 | | | 50.0 | | | 50.0 | |
| Actuated g/C Ratio | | 0.26 | | | 0.26 | | | 0.64 | | | 0.64 | |
| v/c Ratio | | 0.20 | | | 0.09 | | | 0.66 | | | 0.64 | |
| Control Delay | | 19.8 | | | 17.4 | | | 12.6 | | | 12.3 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 19.8 | | | 17.4 | | | 12.6 | | | 12.3 | |
| LOS | | B | | | B | | | B | | | B | |
| Approach Delay | | 19.8 | | | 17.4 | | | 12.6 | | | 12.3 | |
| Approach LOS | | B | | | B | | | B | | | B | |

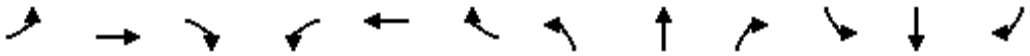
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 78 | | | |
| Actuated Cycle Length: 78 | | | |
| Natural Cycle: 60 | | | |
| Control Type: Semi Act-Uncoord | | | |
| Maximum v/c Ratio: 0.66 | | | |
| Intersection Signal Delay: 13.0 | | Intersection LOS: B | |
| Intersection Capacity Utilization 62.5% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 12: L Street & E 8th Street



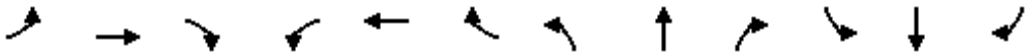
| Lane Group | EBT | WBT | NBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 73 | 36 | 654 | 622 |
| v/c Ratio | 0.20 | 0.09 | 0.66 | 0.64 |
| Control Delay | 19.8 | 17.4 | 12.6 | 12.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 19.8 | 17.4 | 12.6 | 12.3 |
| Queue Length 50th (ft) | 21 | 9 | 172 | 160 |
| Queue Length 95th (ft) | 52 | 31 | 263 | 265 |
| Internal Link Dist (ft) | 522 | 597 | 596 | 455 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 367 | 382 | 996 | 969 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.20 | 0.09 | 0.66 | 0.64 |

Intersection Summary



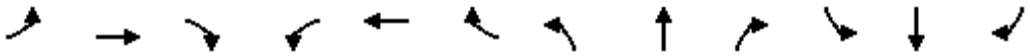
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 21 | 27 | 16 | 5 | 16 | 11 | 16 | 538 | 16 | 21 | 511 | 28 |
| Future Volume (vph) | 21 | 27 | 16 | 5 | 16 | 11 | 16 | 538 | 16 | 21 | 511 | 28 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 16 | 12 | 12 | 15 | 12 | 12 | 10 | 12 | 12 | 10 | 12 |
| Total Lost time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Frpb, ped/bikes | | 0.97 | | | 0.98 | | | 1.00 | | | 0.99 | |
| Flpb, ped/bikes | | 0.99 | | | 0.99 | | | 1.00 | | | 1.00 | |
| Frt | | 0.97 | | | 0.95 | | | 1.00 | | | 0.99 | |
| Flt Protected | | 0.98 | | | 0.99 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | | 1472 | | | 1493 | | | 1582 | | | 1551 | |
| Flt Permitted | | 0.92 | | | 0.97 | | | 0.98 | | | 0.97 | |
| Satd. Flow (perm) | | 1379 | | | 1459 | | | 1553 | | | 1508 | |
| Peak-hour factor, PHF | 0.88 | 0.88 | 0.88 | 0.89 | 0.89 | 0.89 | 0.87 | 0.87 | 0.87 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 24 | 31 | 18 | 6 | 18 | 12 | 18 | 618 | 18 | 23 | 568 | 31 |
| RTOR Reduction (vph) | 0 | 13 | 0 | 0 | 9 | 0 | 0 | 1 | 0 | 0 | 3 | 0 |
| Lane Group Flow (vph) | 0 | 60 | 0 | 0 | 27 | 0 | 0 | 653 | 0 | 0 | 619 | 0 |
| Confl. Peds. (#/hr) | 15 | | 38 | 38 | | 15 | 58 | | 32 | 32 | | 58 |
| Confl. Bikes (#/hr) | | | | | | | | | 1 | | | 2 |
| Heavy Vehicles (%) | 10% | 12% | 0% | 0% | 8% | 0% | 0% | 0% | 0% | 0% | 1% | 4% |
| Parking (#/hr) | | 0 | 0 | | 0 | 0 | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 5 | | | 5 | | | 1 | | | 1 | |
| Permitted Phases | 5 | | | 5 | | | 1 | | | 1 | | |
| Actuated Green, G (s) | | 20.0 | | | 20.0 | | | 50.0 | | | 50.0 | |
| Effective Green, g (s) | | 20.0 | | | 20.0 | | | 50.0 | | | 50.0 | |
| Actuated g/C Ratio | | 0.26 | | | 0.26 | | | 0.64 | | | 0.64 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Vehicle Extension (s) | | 2.0 | | | 2.0 | | | 2.0 | | | 2.0 | |
| Lane Grp Cap (vph) | | 353 | | | 374 | | | 995 | | | 966 | |
| v/s Ratio Prot | | | | | | | | | | | | |
| v/s Ratio Perm | | c0.04 | | | 0.02 | | | c0.42 | | | 0.41 | |
| v/c Ratio | | 0.17 | | | 0.07 | | | 0.66 | | | 0.64 | |
| Uniform Delay, d1 | | 22.5 | | | 22.0 | | | 8.7 | | | 8.5 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 1.0 | | | 0.4 | | | 3.4 | | | 3.3 | |
| Delay (s) | | 23.6 | | | 22.3 | | | 12.0 | | | 11.8 | |
| Level of Service | | C | | | C | | | B | | | B | |
| Approach Delay (s) | | 23.6 | | | 22.3 | | | 12.0 | | | 11.8 | |
| Approach LOS | | C | | | C | | | B | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 12.8 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.52 | | |
| Actuated Cycle Length (s) | 78.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 62.5% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 5 | 5 | 0 | 0 | 16 | 16 | 5 | 532 | 5 | 5 | 485 | 21 |
| Future Volume (vph) | 5 | 5 | 0 | 0 | 16 | 16 | 5 | 532 | 5 | 5 | 485 | 21 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | 0.932 | | | 0.999 | | | 0.994 | |
| Flt Protected | | 0.976 | | | | | | | | | | |
| Satd. Flow (prot) | 0 | 1854 | 0 | 0 | 1771 | 0 | 0 | 1898 | 0 | 0 | 1889 | 0 |
| Flt Permitted | | 0.976 | | | | | | | | | | |
| Satd. Flow (perm) | 0 | 1854 | 0 | 0 | 1771 | 0 | 0 | 1898 | 0 | 0 | 1889 | 0 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 239 | | | 189 | | | 91 | | | 676 | |
| Travel Time (s) | | 5.4 | | | 4.3 | | | 2.1 | | | 15.4 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 5 | 5 | 0 | 0 | 17 | 17 | 5 | 578 | 5 | 5 | 527 | 23 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 10 | 0 | 0 | 34 | 0 | 0 | 588 | 0 | 0 | 555 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |

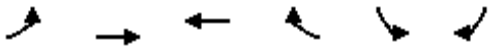
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 42.8% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |



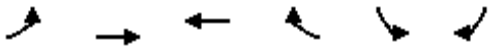
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 5 | 5 | 0 | 0 | 16 | 16 | 5 | 532 | 5 | 5 | 485 | 21 |
| Future Volume (Veh/h) | 5 | 5 | 0 | 0 | 16 | 16 | 5 | 532 | 5 | 5 | 485 | 21 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 5 | 5 | 0 | 0 | 17 | 17 | 5 | 578 | 5 | 5 | 527 | 23 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | 676 | |
| pX, platoon unblocked | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | | 0.82 | | | | | |
| vC, conflicting volume | 1164 | 1142 | 538 | 1142 | 1150 | 580 | 550 | | | 583 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1089 | 1061 | 322 | 1061 | 1072 | 580 | 336 | | | 583 | | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 96 | 97 | 100 | 100 | 91 | 97 | 100 | | | 100 | | |
| cM capacity (veh/h) | 141 | 182 | 591 | 161 | 180 | 518 | 1008 | | | 1001 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 10 | 34 | 588 | 555 |
| Volume Left | 5 | 0 | 5 | 5 |
| Volume Right | 0 | 17 | 5 | 23 |
| cSH | 159 | 267 | 1008 | 1001 |
| Volume to Capacity | 0.06 | 0.13 | 0.00 | 0.00 |
| Queue Length 95th (ft) | 5 | 11 | 0 | 0 |
| Control Delay (s) | 29.1 | 20.5 | 0.1 | 0.1 |
| Lane LOS | D | C | A | A |
| Approach Delay (s) | 29.1 | 20.5 | 0.1 | 0.1 |
| Approach LOS | D | C | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 1.0 | | | |
| Intersection Capacity Utilization | 42.8% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR | Ø2 |
|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | |
| Traffic Volume (vph) | 532 | 411 | 373 | 11 | 0 | 0 | |
| Future Volume (vph) | 532 | 411 | 373 | 11 | 0 | 0 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Lane Util. Factor | 0.95 | 0.95 | 0.95 | 0.95 | 1.00 | 1.00 | |
| Frt | | | 0.996 | | | | |
| Flt Protected | | 0.973 | | | | | |
| Satd. Flow (prot) | 0 | 3513 | 3596 | 0 | 0 | 0 | |
| Flt Permitted | | 0.626 | | | | | |
| Satd. Flow (perm) | 0 | 2260 | 3596 | 0 | 0 | 0 | |
| Right Turn on Red | | | | Yes | | Yes | |
| Satd. Flow (RTOR) | | | 6 | | | | |
| Link Speed (mph) | | 30 | 30 | | 30 | | |
| Link Distance (ft) | | 336 | 398 | | 184 | | |
| Travel Time (s) | | 7.6 | 9.0 | | 4.2 | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | |
| Adj. Flow (vph) | 578 | 447 | 405 | 12 | 0 | 0 | |
| Shared Lane Traffic (%) | | | | | | | |
| Lane Group Flow (vph) | 0 | 1025 | 417 | 0 | 0 | 0 | |
| Enter Blocked Intersection | No | No | No | No | No | No | |
| Lane Alignment | Left | Left | Left | Right | Left | Right | |
| Median Width(ft) | | 0 | 0 | | 0 | | |
| Link Offset(ft) | | 0 | 0 | | 0 | | |
| Crosswalk Width(ft) | | 16 | 16 | | 16 | | |
| Two way Left Turn Lane | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Turning Speed (mph) | 15 | | | 9 | 15 | 9 | |
| Number of Detectors | 1 | 2 | 2 | | | | |
| Detector Template | Left | Thru | Thru | | | | |
| Leading Detector (ft) | 20 | 100 | 100 | | | | |
| Trailing Detector (ft) | 0 | 0 | 0 | | | | |
| Detector 1 Position(ft) | 0 | 0 | 0 | | | | |
| Detector 1 Size(ft) | 20 | 6 | 6 | | | | |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | | | | |
| Detector 1 Channel | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | | | | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | | | | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | | | | |
| Detector 2 Position(ft) | | 94 | 94 | | | | |
| Detector 2 Size(ft) | | 6 | 6 | | | | |
| Detector 2 Type | | Cl+Ex | Cl+Ex | | | | |
| Detector 2 Channel | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | 0.0 | | | | |
| Turn Type | Perm | NA | NA | | | | |
| Protected Phases | | 1 | 1 | | | | 2 |
| Permitted Phases | 1 | | | | | | |
| Detector Phase | 1 | 1 | 1 | | | | |
| Switch Phase | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | 8.0 | | | | 10.0 |



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR | Ø2 |
|---|---|---|---|---|---|---|---|
| Minimum Split (s) | 25.4 | 25.4 | 25.4 | | | | 25.0 |
| Total Split (s) | 70.0 | 70.0 | 70.0 | | | | 25.0 |
| Total Split (%) | 73.7% | 73.7% | 73.7% | | | | 26% |
| Maximum Green (s) | 62.6 | 62.6 | 62.6 | | | | 20.5 |
| Yellow Time (s) | 5.4 | 5.4 | 5.4 | | | | 3.5 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | | | 1.0 |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | | | |
| Total Lost Time (s) | | 7.4 | 7.4 | | | | |
| Lead/Lag | Lead | Lead | Lead | | | | Lag |
| Lead-Lag Optimize? | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | | | | 2.0 |
| Recall Mode | Max | Max | Max | | | | None |
| Walk Time (s) | | | | | | | 18.0 |
| Flash Dont Walk (s) | | | | | | | 1.0 |
| Pedestrian Calls (#/hr) | | | | | | | 28 |
| Act Effct Green (s) | | 83.6 | 83.6 | | | | |
| Actuated g/C Ratio | | 0.89 | 0.89 | | | | |
| v/c Ratio | | 0.51 | 0.13 | | | | |
| Control Delay | | 5.3 | 2.7 | | | | |
| Queue Delay | | 0.0 | 0.0 | | | | |
| Total Delay | | 5.3 | 2.7 | | | | |
| LOS | | A | A | | | | |
| Approach Delay | | 5.3 | 2.7 | | | | |
| Approach LOS | | A | A | | | | |

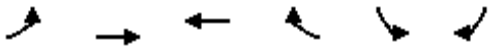
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 95 | | | |
| Actuated Cycle Length: 94.4 | | | |
| Natural Cycle: 65 | | | |
| Control Type: Semi Act-Uncoord | | | |
| Maximum v/c Ratio: 0.51 | | | |
| Intersection Signal Delay: 4.6 | | Intersection LOS: A | |
| Intersection Capacity Utilization 52.5% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 14: Day Blvd Ped



| Lane Group | EBT | WBT |
|---|---|---|
| Lane Group Flow (vph) | 1025 | 417 |
| v/c Ratio | 0.51 | 0.13 |
| Control Delay | 5.3 | 2.7 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 5.3 | 2.7 |
| Queue Length 50th (ft) | 0 | 0 |
| Queue Length 95th (ft) | 231 | 58 |
| Internal Link Dist (ft) | 256 | 318 |
| Turn Bay Length (ft) | | |
| Base Capacity (vph) | 2002 | 3187 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.51 | 0.13 |

Intersection Summary



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 532 | 411 | 373 | 11 | 0 | 0 |
| Future Volume (vph) | 532 | 411 | 373 | 11 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 7.4 | 7.4 | | | |
| Lane Util. Factor | | 0.95 | 0.95 | | | |
| Frt | | 1.00 | 1.00 | | | |
| Flt Protected | | 0.97 | 1.00 | | | |
| Satd. Flow (prot) | | 3511 | 3594 | | | |
| Flt Permitted | | 0.63 | 1.00 | | | |
| Satd. Flow (perm) | | 2259 | 3594 | | | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 578 | 447 | 405 | 12 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 1 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 1025 | 416 | 0 | 0 | 0 |
| Turn Type | Perm | NA | NA | | | |
| Protected Phases | | 1 | 1 | | | |
| Permitted Phases | 1 | | | | | |
| Actuated Green, G (s) | | 78.7 | 78.7 | | | |
| Effective Green, g (s) | | 78.7 | 78.7 | | | |
| Actuated g/C Ratio | | 0.81 | 0.81 | | | |
| Clearance Time (s) | | 7.4 | 7.4 | | | |
| Vehicle Extension (s) | | 2.0 | 2.0 | | | |
| Lane Grp Cap (vph) | | 1829 | 2909 | | | |
| v/s Ratio Prot | | | 0.12 | | | |
| v/s Ratio Perm | | c0.45 | | | | |
| v/c Ratio | | 0.56 | 0.14 | | | |
| Uniform Delay, d1 | | 3.2 | 2.0 | | | |
| Progression Factor | | 1.00 | 1.00 | | | |
| Incremental Delay, d2 | | 1.2 | 0.1 | | | |
| Delay (s) | | 4.5 | 2.1 | | | |
| Level of Service | | A | A | | | |
| Approach Delay (s) | | 4.5 | 2.1 | | 0.0 | |
| Approach LOS | | A | A | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 3.8 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.52 | | |
| Actuated Cycle Length (s) | 97.2 | Sum of lost time (s) | 11.9 |
| Intersection Capacity Utilization | 52.5% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

**L Street Station Redevelopment**
**Trip Generation Estimate - 10th Edition with new custom mode splits**
**VHB,Inc.**
**5/16/2018 Stantec Program**

| | | | | | | | | | | | | | | 0.2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **FULL BUILD** | **Size** | **Trip Rate** | **Less Capture (see spreadsheet)** | **Unadjusted Vehicle Trips** | **VOR** | **Person Trips** | **Net-Person Trips (after capture)** | **Transit Share** | **Walk/Other Share** | **Vehicle Share** | **Local VOR** | **Transit Trips** | **Walk/Other Trips** | **Adjusted Vehicle Trips** | **Pass-by (20%)** |
| Daily Residential | | 5.44 | | 7567 | | 8,551 | | | | | | 3,592 | 2,052 | 2,572 | |
| In | 1,391.0 | 2.72 | | 3784 | 1.13 | 4,275 | | 42% | 24% | 34% | 1.13 | 1,796 | 1,026 | 1,286 | |
| Out | units | 2.72 | | 3784 | 1.13 | 4,275 | | 42% | 24% | 34% | 1.13 | 1,796 | 1,026 | 1,286 | |
| Daily Retail | | 37.75 | | 3093 | | 5506 | | | | | | 2202 | 2202 | 618 | |
| In | 81.9 | 18.875 | | 1546 | 1.78 | 2753 | | 40% | 40% | 20% | 1.78 | 1101 | 1101 | 309 | |
| Out | ksf | 18.875 | | 1546 | 1.78 | 2753 | | 40% | 40% | 20% | 1.78 | 1101 | 1101 | 309 | |
| Daily Hotel | | 8.36 | | 2,876 | | 6,327 | | | | | | 2,340 | 1,456 | 1,150 | |
| In | 344.0 | 4.18 | | 1,438 | 2.2 | 3,163 | | 37% | 23% | 40% | 2.2 | 1,170 | 728 | 575 | |
| Out | keys | 4.18 | | 1,438 | 2.2 | 3,163 | | 37% | 23% | 40% | 2.2 | 1,170 | 728 | 575 | |
| Daily Office | | 9.74 | | 3,585 | | 4052 | | | | | | 1620 | 972 | 1292 | |
| In | 368.1 | 4.87 | | 1,793 | 1.13 | 2026 | | 40% | 24% | 36% | 1.13 | 810 | 486 | 646 | |
| Out | ksf | 4.87 | | 1,793 | 1.13 | 2026 | | 40% | 24% | 36% | 1.13 | 810 | 486 | 646 | |
| **Total Daily** | | | | 17,121 | | | | | | | | 9,754 | 6,682 | 5,632 | |
| **In** | | | | 8,560 | | | | | | | | 4,877 | 3,341 | 2,816 | |
| **Out** | | | | 8,560 | | | | | | | | 4,877 | 3,341 | 2,816 | |
| AM Residential | | 0.36 | | 501 | | 566 | 551 | | | | | 231 | 133 | 166 | |
| In | 1391.0 | 0.09 | -3 | 130 | 1.13 | 147 | 144 | 42% | 24% | 34% | 1.13 | 60 | 35 | 43 | |
| Out | units | 0.27 | -12 | 371 | 1.13 | 419 | 407 | 42% | 24% | 34% | 1.13 | 171 | 98 | 123 | |
| AM Retail | | 0.94 | | 77 | | 137 | 93 | | | | | 37 | 37 | 10 | 2 |
| In | 81.93 | 0.58 | -26 | 47 | 1.78 | 84 | 58 | 40% | 40% | 20% | 1.78 | 23 | 23 | 6 | 1 |
| Out | ksf | 0.36 | -18 | 30 | 1.78 | 53 | 35 | 40% | 40% | 20% | 1.78 | 14 | 14 | 4 | 1 |
| AM Hotel | | 0.47 | | 161 | | 354 | 339 | | | | | 125 | 78 | 62 | |
| In | 344.0 | 0.28 | 0 | 95 | 2.2 | 209 | 209 | 37% | 23% | 40% | 2.2 | 77 | 48 | 38 | |
| Out | keys | 0.19 | -15 | 66 | 2.2 | 145 | 130 | 37% | 23% | 40% | 2.2 | 48 | 30 | 24 | |
| AM Office | | 1.16 | | 427 | | 483 | 429 | | | | | 171 | 103 | 137 | |
| In | 368.1 | 1.00 | -35 | 367 | 1.13 | 415 | 380 | 40% | 24% | 36% | 1.13 | 152 | 91 | 121 | |
| Out | ksf | 0.16 | -19 | 60 | 1.13 | 68 | 49 | 40% | 24% | 36% | 1.13 | 20 | 12 | 16 | |
| **Total AM Peak Hour** | | | | 1,166 | | | | | | | | 564 | 351 | 375 | |
| **In** | | | | 639 | | | | | | | | 312 | 197 | 208 | |
| **Out** | | | | 527 | | | | | | | | 253 | 154 | 167 | |
| PM Residential | | 0.44 | | 612 | | 692 | 571 | | | | | 239 | 137 | 172 | |
| In | 1391.0 | 0.27 | -83 | 373 | 1.13 | 421 | 338 | 42% | 24% | 34% | 1.13 | 142 | 81 | 102 | |
| Out | units | 0.17 | -38 | 239 | 1.13 | 270 | 232 | 42% | 24% | 34% | 1.13 | 97 | 56 | 70 | |
| PM Retail | | 3.81 | | 312 | | 555 | 407 | | | | | 163 | 163 | 46 | 9 |
| In | 81.93 | 1.83 | -53 | 150 | 1.78 | 267 | 214 | 40% | 40% | 20% | 1.78 | 86 | 86 | 24 | 5 |
| Out | ksf | 1.98 | -95 | 162 | 1.78 | 288 | 193 | 40% | 40% | 20% | 1.78 | 77 | 77 | 22 | 5 |
| PM Hotel | | 0.60 | | 206 | | 453 | 426 | | | | | 157 | 98 | 77 | |
| In | 344.0 | 0.31 | -22 | 105 | 2.2 | 231 | 209 | 37% | 23% | 40% | 2.2 | 77 | 48 | 38 | |
| Out | keys | 0.29 | -5 | 101 | 2.2 | 222 | 217 | 37% | 23% | 40% | 2.2 | 80 | 50 | 39 | |
| PM Office | | 1.15 | | 424 | | 479 | 433 | | | | | 173 | 104 | 138 | |
| In | 368.1 | 0.18 | -17 | 68 | 1.13 | 77 | 60 | 40% | 24% | 36% | 1.13 | 24 | 14 | 19 | |
| Out | ksf | 0.97 | -29 | 356 | 1.13 | 402 | 373 | 40% | 24% | 36% | 1.13 | 149 | 90 | 119 | |
| **Total PM Peak Hour** | | | | 1,554 | | | | | | | | 732 | 502 | 433 | |
| **In** | | | | 696 | | | | | | | | 329 | 229 | 183 | |
| **Out** | | | | 858 | | | | | | | | 403 | 273 | 250 | |

Notes:
LUC 710 - General Office - Average Rate
LUC 221 Multifamily Housing (Mid-Rise) Average Rate
LUC 820 - Shopping Center - Average Rate
LUC 310 - Hotel - Average Rate
Mode Split: Proposed custom mode split for 776 Summer Street

## Bicycle Parking Guidelines | City of Boston

*"The following Bicycle Parking Requirements are applicable for accommodating bicycles in all buildings in the City of Boston. They are required in all projects subject to Transportation Access Plan Agreements and Site Plan Review administered by the Boston Transportation Department. Article 80 Small and Large Project review will be administered by the Boston Redevelopment Authority. These requirements set standards for bicycle parking, bike-share stations and shower facilities...The following are minimum requirements according to building type. Exceeding these minimum requirements is encouraged but not required"*

**776 Summer Street / Exelon Site Redevelopment Project**

| Category \| Multi Unit Residential 4+ Units: | | Program | calculated # of Spaces |
|---|---|---|---|
| Requirement 1: | 1 Secure/Covered bicycle parking space per unit, located in an easily accessed dedicated storage area | 1391 | 1391 |
| Requirement 2: | 1 Outdoor/Covered or Outdoor/Open parking space per 5 units | 1391 | 278.2 |
| | BUT, no fewer than 2 Outdoor/Covered or Outdoor/Open spaces per building | min 2 spaces per building | |
| Requirement 3: | Shower / changing facility as included in each unit | | n/a |
| Requirement 4: | Provide at least one bike share station (standard size) for any residential building with 100 or more units. Bike share station may be waived if another station is within 200 yards | at least one hubway station 19 bikes | min 1 hubway station |

**Secure/Covered** *facilities are defined as bicycle parking areas that protect the entire bicycle, its components and accessories against theft and against inclement weather, including wind-driven rain. Examples include but are not limited to: indoor bike room, indoor storage area, bike lockers, indoor or outdoor bike valet parking with weather protective cover and siding, areas with security camera linked to live viewers, and/or key access-covered cages with weather-protective siding.*

**Outdoor/Covered** *facilities are defined as bicycle parking areas that provide some protection against inclement weather and may have added theft security. Covers include but are not limited to a building projection, an awning or tented roof.*
*Siding is not required. Racks associated with covers will allow the user to lock the bicycle frame and one wheel while the bicycle is supported in a stable position*

*All bicycle parking racks, signs, and secure bicycle parking areas installed per these requirements shall conform to BTD standards.*

## Bicycle Parking Guidelines | City of Boston

*"The following Bicycle Parking Requirements are applicable for accommodating bicycles in all buildings in the City of Boston. They are required in all projects subject to Transportation Access Plan Agreements and Site Plan Review administered by the Boston Transportation Department. Article 80 Small and Large Project review will be administered by the Boston Redevelopment Authority. These requirements set standards for bicycle parking, bike-share stations and shower facilities...The following are minimum requirements according to building type. Exceeding these minimum requirements is encouraged but not required"*

**PROJECT NAME**

| Category \| Office, Commercial, Industry: | | Program | calculated # of Spaces | |
|---|---|---|---|---|
| Requirement 1: | A. 1 Secure/Covered parking space per worker for 10% of the planned part- and full-timeworker occupancy, OR | 0 | 0 | the definition of this parameter is ambiguous. As shown here, we have applied it to the builidng occupancy but this requirement is based on campus wide population and strictly is not applicable to a single building. A more appropriate approach might be to use this parameter to establish the requirement for the entire campus and then determine if it is adequate. |
| | B. 0.3 parking spaces per 1,000 square feet of development | 81.93 | 24.6 | |
| | C. BUT, no fewer than 4 Secure/Covered parking spaces per building | 0 | 0 | |
| Requirement 2: | A. 1 Outdoor/Covered or Outdoor/Open parking space for patrons and visitors for 2.5% of estimated daily building users | 0 | 0 | |
| | B. BUT, no fewer than 4 Outdoor/Covered or Outdoor/Open spaces per building | 0 | 0 | |
| Requirement 3: | A. Provide at least one shower / changing facility for any building with 100 or more planned part- and fulltime workers (or over 40,000 square feet of development) | see 3.C | n/a | |
| | B. AND, 1 additional shower / changing facility per every 200 planned workers (or 80,000 square feet of development), thereafter | see 3.C | n/a | |
| | C. Shower / changing facility requirements may be met by providing the equivalent of free access to on-site health club or gym shower facilities where health club or gym can be accessed without going outside | 0 | n/a | |
| Requirement 4: | Provide at least one bike share station (standard size) for any development with 100 or more planned worker occupancy (or 50,000 square feet of development). Bike share station may be waived if another station is within 200 yards | 0 | 0 | |

**Secure/Covered** *facilities are defined as bicycle parking areas that protect the entire bicycle, its components and accessories against theft and against inclement weather, including wind-driven rain. Examples include but are not limited to: indoor bike room, indoor storage area, bike lockers, indoor or outdoor bike valet parking with weather protective cover and siding, areas with security camera linked to live viewers, and/or key access-covered cages with weather-protective siding.*

**Outdoor/Covered** *facilities are defined as bicycle parking areas that provide some protection against inclement weather and may have added theft security. Covers include but are not limited to a building projection, an awning or tented roof.*
*Siding is not required. Racks associated with covers will allow the user to lock the bicycle frame and one wheel while the bicycle is supported in a stable position*

*All bicycle parking racks, signs, and secure bicycle parking areas installed per these requirements shall conform to BTD standards.*

## Bicycle Parking Guidelines | City of Boston

*"The following Bicycle Parking Requirements are applicable for accommodating bicycles in all buildings in the City of Boston. They are required in all projects subject to Transportation Access Plan Agreements and Site Plan Review administered by the Boston Transportation Department. Article 80 Small and Large Project review will be administered by the Boston Redevelopment Authority. These requirements set standards for bicycle parking, bike-share stations and shower facilities...The following are minimum requirements according to building type. Exceeding these minimum requirements is encouraged but not required"*

**PROJECT NAME**

| Category \| Office, Commercial, Industry: | | Program | calculated # of Spaces | |
|---|---|---|---|---|
| Requirement 1: | A. 1 Secure/Covered parking space per worker for 10% of the planned part- and full-timeworker occupancy, OR | 0 | 0 | the definition of this parameter is ambiguous. As shown here, we have applied it to the builidng occupancy but this requirement is based on campus wide population and strictly is not applicable to a single building. A more appropriate approach might be to use this parameter to establish the requirement for the entire campus and then determine if it is adequate. |
| | B. 0.3 parking spaces per 1,000 square feet of development | 172 | 51.6 | |
| | C. BUT, no fewer than 4 Secure/Covered parking spaces per building | 0 | 0 | |
| Requirement 2: | A. 1 Outdoor/Covered or Outdoor/Open parking space for patrons and visitors for 2.5% of estimated daily building users | 0 | 0 | |
| | B. BUT, no fewer than 4 Outdoor/Covered or Outdoor/Open spaces per building | 0 | 0 | |
| Requirement 3: | A. Provide at least one shower / changing facility for any building with 100 or more planned part- and fulltime workers (or over 40,000 square feet of development) | see 3.C | n/a | |
| | B. AND, 1 additional shower / changing facility per every 200 planned workers (or 80,000 square feet of development), thereafter | see 3.C | n/a | |
| | C. Shower / changing facility requirements may be met by providing the equivalent of free access to on-site health club or gym shower facilities where health club or gym can be accessed without going outside | 0 | n/a | |
| Requirement 4: | Provide at least one bike share station (standard size) for any development with 100 or more planned worker occupancy (or 50,000 square feet of development). Bike share station may be waived if another station is within 200 yards | 0 | 0 | |

**Secure/Covered** *facilities are defined as bicycle parking areas that protect the entire bicycle, its components and accessories against theft and against inclement weather, including wind-driven rain. Examples include but are not limited to: indoor bike room, indoor storage area, bike lockers, indoor or outdoor bike valet parking with weather protective cover and siding, areas with security camera linked to live viewers, and/or key access-covered cages with weather-protective siding.*

**Outdoor/Covered** *facilities are defined as bicycle parking areas that provide some protection against inclement weather and may have added theft security. Covers include but are not limited to a building projection, an awning or tented roof.*
*Siding is not required. Racks associated with covers will allow the user to lock the bicycle frame and one wheel while the bicycle is supported in a stable position*

*All bicycle parking racks, signs, and secure bicycle parking areas installed per these requirements shall conform to BTD standards.*

## Bicycle Parking Guidelines | City of Boston

*"The following Bicycle Parking Requirements are applicable for accommodating bicycles in all buildings in the City of Boston. They are required in all projects subject to Transportation Access Plan Agreements and Site Plan Review administered by the Boston Transportation Department. Article 80 Small and Large Project review will be administered by the Boston Redevelopment Authority. These requirements set standards for bicycle parking, bike-share stations and shower facilities...The following are minimum requirements according to building type. Exceeding these minimum requirements is encouraged but not required"*

**PROJECT NAME**

| Category \| Office, Commercial, Industry: | | Program | calculated # of Spaces | |
|---|---|---|---|---|
| Requirement 1: | A. 1 Secure/Covered parking space per worker for 10% of the planned part- and full-timeworker occupancy, OR | 0 | 0 | the definition of this parameter is ambiguous. As shown here, we have applied it to the builidng occupancy but this requirement is based on campus wide population and strictly is not applicable to a single building. A more appropriate approach might be to use this parameter to establish the requirement for the entire campus and then determine if it is adequate. |
| | B. 0.3 parking spaces per 1,000 square feet of development | 368.07 | 110.4 | |
| | C. BUT, no fewer than 4 Secure/Covered parking spaces per building | 0 | 0 | |
| Requirement 2: | A. 1 Outdoor/Covered or Outdoor/Open parking space for patrons and visitors for 2.5% of estimated daily building users | 0 | 0 | |
| | B. BUT, no fewer than 4 Outdoor/Covered or Outdoor/Open spaces per building | 0 | 0 | |
| Requirement 3: | A. Provide at least one shower / changing facility for any building with 100 or more planned part- and fulltime workers (or over 40,000 square feet of development) | see 3.C | n/a | |
| | B. AND, 1 additional shower / changing facility per every 200 planned workers (or 80,000 square feet of development), thereafter | see 3.C | n/a | |
| | C. Shower / changing facility requirements may be met by providing the equivalent of free access to on-site health club or gym shower facilities where health club or gym can be accessed without going outside | 0 | n/a | |
| Requirement 4: | Provide at least one bike share station (standard size) for any development with 100 or more planned worker occupancy (or 50,000 square feet of development). Bike share station may be waived if another station is within 200 yards | 0 | 0 | |

**Secure/Covered** *facilities are defined as bicycle parking areas that protect the entire bicycle, its components and accessories against theft and against inclement weather, including wind-driven rain. Examples include but are not limited to: indoor bike room, indoor storage area, bike lockers, indoor or outdoor bike valet parking with weather protective cover and siding, areas with security camera linked to live viewers, and/or key access-covered cages with weather-protective siding.*

**Outdoor/Covered** *facilities are defined as bicycle parking areas that provide some protection against inclement weather and may have added theft security. Covers include but are not limited to a building projection, an awning or tented roof.*
*Siding is not required. Racks associated with covers will allow the user to lock the bicycle frame and one wheel while the bicycle is supported in a stable position*

*All bicycle parking racks, signs, and secure bicycle parking areas installed per these requirements shall conform to BTD standards.*

ULI Parking Generation

| Land Use – User Group | Size (KSF or Units) | ULI Parking Ratio | Unadjusted Demand | Mode Split | Unshared Demand | Non-Captive Factor | Monthly Adjustment (Oct) | Peak Hour Adjustment (8 AM) | Shared Parking Demand | Peak Hour Adjustment (2 PM) | Shared Parking Demand | Peak Hour Adjustment (5 PM) | Shared Parking Demand | Peak Hour Adjustment (10 PM) | Shared Parking Demand |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Office/R&D - Employee | 368.1 | 2.78 | 1,023 | 36% | 368 | 98% | 100% | 75% | 270 | 100% | 361 | 50% | 180 | 1% | 4 |
| Office/R&D - Visitor | 0 | 0.22 | 81 | 36% | 29 | 100% | 100% | 20% | 6 | 100% | 29 | 10% | 3 | 0% | 0 |
| Retail - Employee | 86 | 0.7 | 60 | 20% | 12 | 100% | 80% | 40% | 4 | 100% | 10 | 95% | 9 | 40% | 4 |
| Retail - Visitor | 0 | 2.9 | 248 | 20% | 50 | 50% | 66% | 15% | 2 | 95% | 16 | 95% | 16 | 30% | 5 |
| Residential (condo)* | 567 | 1 | 567 | 100% | 567 | 100% | 100% | 100% | 567 | 100% | 567 | 100% | 567 | 100% | 567 |
| Residential (apartment)* | 777 | 0.5 | 389 | 100% | 389 | 100% | 100% | 85% | 331 | 70% | 272 | 85% | 331 | 100% | 389 |
| Hotel - Employee | 344 | 0.25 | 86 | 40% | 34 | 100% | 100% | 90% | 31 | 100% | 34 | 70% | 24 | 20% | 7 |
| Hotel - Visitor | 0 | 1 | 344 | 35% | 120 | 100% | 93% | 80% | 89 | 60% | 67 | 70% | 78 | 95% | 106 |
| **Total Parking Space Demand** | | | **2,798** | | **1,569** | | | | **1,300** | | **1,356** | | **1,208** | | **1,082** |

* Mode split and adjustment factors for residenital are 100% - residential spaces are not shared with office/retail/hotel uses

**MBTA Route #7 Bus**
**Data Collection Form**

Date: 3/21
Start Time: 7:00 AM
Location: L Street/Summer @ E 1st St
Direction: Inbound

Observer: C. Dube
End Time: 9:00 AM
Weather: Clear

Sheet 1 of 3

| Observation # | Bus # | Direction | BUS STATION Crowding at Arrival | BUS Capacity at Arrival | BUS Capacity at Departure | Wheel Stop Time | Door Open Time | Final Door Close Time | Wheel Move Time | # of Pass unable to board | Delay Notes: |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1814 | Inbound | (B) A - Empty; B - Comfortable Circulation; C - Restricted Circulation; D - Crushed | (A) A - Seats available, few standees; B - Seats full, comfortable standing; C - Seats full, comfortably packed; D - Train Full / Crushed at Door; E - Super Crushed | (A) A - Seats available, few standees; B - Seats full, comfortable standing; C - Seats full, comfortably packed; D - Train Full / Crushed at Door; E - Super Crushed | 7:03:38 | 7:03:40 | 7:03:41 | 7:03:54 | 0 | On: 3<br>Off: 0 |
| 2 | 1787 | Inbound | (B) A - Empty; B - Comfortable Circulation; C - Restricted Circulation; D - Crushed | (A) A - Seats available, few standees; B - Seats full, comfortable standing; C - Seats full, comfortably packed; D - Train Full / Crushed at Door; E - Super Crushed | (A) A - Seats available, few standees; B - Seats full, comfortable standing; C - Seats full, comfortably packed; D - Train Full / Crushed at Door; E - Super Crushed | 7:06:40 passed stop | 7: : | 7: : | 7: : | 0 | On: 0 No Stop<br>Off: 0 |
| 3 | 2270 | Inbound | (B) A - Empty; B - Comfortable Circulation; C - Restricted Circulation; D - Crushed | A - Seats available, few standees; (B) B - Seats full, comfortable standing; C - Seats full, comfortably packed; D - Train Full / Crushed at Door; E - Super Crushed | A - Seats available, few standees; (B) B - Seats full, comfortable standing; C - Seats full, comfortably packed; D - Train Full / Crushed at Door; E - Super Crushed | 7:14:35 | 7:14:37 | 7:14:42 | 7:14:51 | 0 | On: 1<br>Off: 0 |
| 4 | 2121 | Inbound | (A) A - Empty; B - Comfortable Circulation; C - Restricted Circulation; D - Crushed | (A) A - Seats available, few standees; B - Seats full, comfortable standing; C - Seats full, comfortably packed; D - Train Full / Crushed at Door; E - Super Crushed | (A) A - Seats available, few standees; B - Seats full, comfortable standing; C - Seats full, comfortably packed; D - Train Full / Crushed at Door; E - Super Crushed | 7:15:58 | 7:16:01 | 7:16:04 | 7:16:10 | 0 | On: ~~0~~ 1<br>Off: 0 |
| 5 | 2283 | Inbound | A - Empty; B - Comfortable Circulation; (C) C - Restricted Circulation; D - Crushed | A - Seats available, few standees; B - Seats full, comfortable standing; (C) C - Seats full, comfortably packed; D - Train Full / Crushed at Door; E - Super Crushed | A - Seats available, few standees; B - Seats full, comfortable standing; (C) C - Seats full, comfortably packed; D - Train Full / Crushed at Door; E - Super Crushed | 7:23:54 | 7:23:55 | 7:24:05 | 7:24:06 | 0 | On: ~~4~~ 5<br>Off: 0 |
| 6 | 2251 | Inbound | A - Empty; (B) B - Comfortable Circulation; C - Restricted Circulation; D - Crushed | (A) A - Seats available, few standees; B - Seats full, comfortable standing; C - Seats full, comfortably packed; D - Train Full / Crushed at Door; E - Super Crushed | (A) A - Seats available, few standees; B - Seats full, comfortable standing; C - Seats full, comfortably packed; D - Train Full / Crushed at Door; E - Super Crushed | 7:27:30 | 7:27:31 | 7:27:49 | 7:27:51 | 0 | On: 5<br>Off: 0 |
| 7 | 2160 | Inbound | A - Empty; (B) B - Comfortable Circulation; C - Restricted Circulation; D - Crushed | (A) A - Seats available, few standees; B - Seats full, comfortable standing; C - Seats full, comfortably packed; D - Train Full / Crushed at Door; E - Super Crushed | (A) A - Seats available, few standees; B - Seats full, comfortable standing; C - Seats full, comfortably packed; D - Train Full / Crushed at Door; E - Super Crushed | 7:30:16 | 7:30:17 | 7:30:22 | 7:30:26 | 0 | On: 2<br>Off: 0 |
| 8 | 1777 | Inbound | A - Empty; (B) B - Comfortable Circulation; C - Restricted Circulation; D - Crushed | (A) A - Seats available, few standees; B - Seats full, comfortable standing; C - Seats full, comfortably packed; D - Train Full / Crushed at Door; E - Super Crushed | (A) A - Seats available, few standees; B - Seats full, comfortable standing; C - Seats full, comfortably packed; D - Train Full / Crushed at Door; E - Super Crushed | 7:32:07 | 7:32:08 | 7:32:11 | 7:32:20 | 0 | On: 1<br>Off: 0 |
| 9 | 2157 | Inbound | A - Empty; (B) B - Comfortable Circulation; C - Restricted Circulation; D - Crushed | A - Seats available, few standees; (B) B - Seats full, comfortable standing; C - Seats full, comfortably packed; D - Train Full / Crushed at Door; E - Super Crushed | A - Seats available, few standees; (B) B - Seats full, comfortable standing; C - Seats full, comfortably packed; D - Train Full / Crushed at Door; E - Super Crushed | 7:36:53 | 7:36:54 | 7:37:04 | 7:37:06 | 0 | On: ~~2~~ 3<br>Off: |
| 10 | 2280 | Inbound | A - Empty; (B) B - Comfortable Circulation; C - Restricted Circulation; D - Crushed | (A) A - Seats available, few standees; B - Seats full, comfortable standing; C - Seats full, comfortably packed; D - Train Full / Crushed at Door; E - Super Crushed | (A) A - Seats available, few standees; B - Seats full, comfortable standing; C - Seats full, comfortably packed; D - Train Full / Crushed at Door; E - Super Crushed | 7:38:51 | 7:38:52 | 7:38:56 | 7:38:58 | 0 | On: 1<br>Off: 0 |

Note:

1. Record all times in Hours : Minutes : Seconds format
2. If no delay in "Door Open Time" after "Wheel Stop Time" mark with a slash (/) only
3. If no delay in "Wheel Move Time" after "Final Door Close Time" mark with a slash (/) only

C - Crowding; E - EMS Action; W - Wheelchair pass req assistance; D - Doors req repeated cycling unrelated to crowding; S - Signal at Stop; P - Police Action

C - Crowding; E - EMS Action; S - Signal at Stop; P - Police Action

**MBTA Route #7 Bus**
**Data Collection Form**

Date: 3/21/2017
Start Time: 7:00AM
Location: L Street/Summer @ E 1st St
Direction: Inbound

Observer: C. Duke
End Time: 9:00AM
Weather: Clear

Sheet 2 of 3

| Observation # | Bus # | Direction | BUS STATION Crowding at Arrival | BUS Capacity at Arrival | BUS Capacity at Departure | Wheel Stop Time | Door Open Time | Final Door Close Time | Wheel Move Time | # of Pass unable to board | Delay Notes: |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | 1814 | Inbound | (B) Comfortable Circulation | (B) Seats full, comfortable standing | (B) Seats full, comfortable standing | 7:46:16 | 7:46:17 | 7:46:21 | 7:46:23 | 0 | on: 1<br>off: 0 |
| 12 | XXXX missed # | Inbound | (A) Empty | (A) Seats available, few standees | (A) Seats available, few standees | 7:46:32 passed stop | : : | : : | : : | 0 | on: 0<br>off: 0 |
| 13 | 2066 | Inbound | (B) Comfortable Circulation | (B) Seats full, comfortable standing | (B) Seats full, comfortable standing | 7:48:30 passed stop | : : | : : | : : | 0 | on: 0<br>off: 0 |
| 14 | 1780 | Otis + Summer Inbound | (C) Restricted Circulation (D) Crushed | (D) Train Full / Crushed at Door | (D) Train Full / Crushed at Door | 7:56:35 passed-full | : : | : : | : : | 4 | on: 0<br>off: 0 |
| 15 | 2283 XXXX missed # | Congress + Atlantic Inbound | (B) Comfortable Circulation (D) Crushed | (D) Train Full / Crushed at Door | (D) Train Full / Crushed at Door | 7:56:38 | 7:56:40 | 7:57:02 | 7:57:05 | 0 | on: 4<br>off: 0 |
| 16 | 2138 | Congress + Atlantic Inbound | (C) Restricted Circulation (D) Crushed | (D) Train Full / Crushed at Door | (D) Train Full / Crushed at Door | 8:00:50 passed-full | : : | : : | : : | 7 | on:<br>off: |
| 17 | 1846 | Congress + Atlantic Inbound | (B) Comfortable Circulation (C) Restricted Circulation | (B) Seats full, comfortable standing | (C) Seats full, comfortably packed | 8:03:35 | 8:03:36 | 8:04:01 | 8:04:09 | 0 | on: 9<br>off: 0 |
| 18 | 2160 | Inbound | (B) Comfortable Circulation (C) Restricted Circulation | (C) Seats full, comfortably packed | (C) Seats full, comfortably packed | 8:07:25 passed Stop | : : | : : | : : | 0 | on: 0<br>off: 0 |
| 19 | 2174 | Inbound | (B) Comfortable Circulation (D) Crushed | (D) Train Full / Crushed at Door | (D) Train Full / Crushed at Door | 8:13:33 passed-full | : : | : : | : : | 2 | on: 2<br>off: 0 |
| 20 | 2157 | Congress + Atlantic Inbound | (B) Comfortable Circulation (C) Restricted Circulation | (C) Seats full, comfortably packed | (C) Seats full, comfortably packed | 8:18:22 | 8:18:23 | 8:18:32 | 8:18:38 | 0 | on: 4<br>off: 0 |

Note:
1. Record all times in Hours : Minutes : Seconds format
2. If no delay in "Door Open Time" after "Wheel Stop Time" mark with a slash (/) only
3. If no delay in "Wheel Move Time" after "Final Door Close Time" mark with a slash (/) only

C - Crowding
S - Signal at Stop
E - EMS Action
P - Police Action
W - Wheelchair pass req assistance
D - Doors req repeated cycling unrelated to crowding

C - Crowding
S - Signal at Stop
E - EMS Action
P - Police Action

# MBTA Route #7 Bus
## Data Collection Form

Date: 3/21/2017
Start Time: 7:00AM
Location: L Street/Summer @ E 1st St
Direction: Inbound

Observer: C. Dube
End Time: 9:00AM
Weather: Clear

Sheet 3 of 3

| Observation # | Bus # | Direction | BUS STATION Crowding at Arrival | BUS Capacity at Arrival | BUS Capacity at Departure | Wheel Stop Time | Door Open Time | Final Door Close Time | Wheel Move Time | # of Pass unable to board | Delay Notes: |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 21 | 1839 | Inbound | (B) A - Empty, (B) Comfortable Circulation, C - Restricted Circulation, (X) D - Crushed | A - Seats available, few standees, B - Seats full, comfortable standing, C - Seats full, comfortably packed, (D) Train Full / Crushed at Door, E - Super Crushed | A - Seats available, few standees, B - Seats full, comfortable standing, C - Seats full, comfortably packed, (D) Train Full / Crushed at Door, E - Super Crushed | 8:23:25 passed-full | : : | : : | : : | 1 | On: 0 Off: 0 |
| 22 | 1814 | Otis + Summer Inbound | A - Empty, B - Comfortable Circulation, (C) Restricted Circulation, D - Crushed | A - Seats available, few standees, B - Seats full, comfortable standing, (C) Seats full, comfortably packed, D - Train Full / Crushed at Door, E - Super Crushed | A - Seats available, few standees, B - Seats full, comfortable standing, (C) Seats full, comfortably packed, D - Train Full / Crushed at Door, E - Super Crushed | 8:27:02 | 8:27:04 | 8:27:26 | 8:27:28 | 0 | On: 6 Off: 0 |
| 23 | 1787 | Congress + Atlantic Inbound | (A) Empty, (B) Comfortable Circulation, (X) Restricted Circulation, D - Crushed | A - Seats available, few standees, B - Seats full, comfortable standing, (C) Seats full, comfortably packed, D - Train Full / Crushed at Door, E - Super Crushed | A - Seats available, few standees, B - Seats full, comfortable standing, (C) Seats full, comfortably packed, D - Train Full / Crushed at Door, E - Super Crushed | 8:27:10 | 8:27:11 | 8:27:26 | 8:27:28 | 0 | On: 1 Off: 0 |
| 24 | 0467 | Inbound | (A) Empty, (B) Comfortable Circulation, C - Restricted Circulation, D - Crushed | A - Seats available, few standees, (B) Seats full, comfortable standing, C - Seats full, comfortably packed, D - Train Full / Crushed at Door, E - Super Crushed | A - Seats available, few standees, (B) Seats full, comfortable standing, C - Seats full, comfortably packed, D - Train Full / Crushed at Door, E - Super Crushed | 8:28:37 passed Stop | : : | : : | : : | 0 | On: 0 Off: 0 |
| 25 | 2160 | Congress + Atlantic Inbound | A - Empty, B - Comfortable Circulation, (C) Restricted Circulation, (X) D - Crushed | A - Seats available, few standees, B - Seats full, comfortable standing, C - Seats full, comfortably packed, (D) Train Full / Crushed at Door, E - Super Crushed | A - Seats available, few standees, B - Seats full, comfortable standing, C - Seats full, comfortably packed, (D) Train Full / Crushed at Door, E - Super Crushed | 8:35:27 passed-full | : : | : : | : : | 4 | On: 0 Off: 0 |
| 26 | 1780 | Inbound | A - Empty, B - Comfortable Circulation, (C) Restricted Circulation, (X) D - Crushed | A - Seats available, few standees, B - Seats full, comfortable standing, C - Seats full, comfortably packed, D - Train Full / Crushed at Door, (E) Super Crushed | A - Seats available, few standees, B - Seats full, comfortable standing, C - Seats full, comfortably packed, D - Train Full / Crushed at Door, (E) Super Crushed | 8:39:13 passed-full | : : | : : | : : | 7 * | On: 0 Off: 0 — 1 person left in an Uber |
| 27 | 1837 | Inbound | A - Empty, B - Comfortable Circulation, C - Restricted Circulation, (D) Crushed | A - Seats available, few standees, B - Seats full, comfortable standing, C - Seats full, comfortably packed, (D) Train Full / Crushed at Door, E - Super Crushed | A - Seats available, few standees, B - Seats full, comfortable standing, C - Seats full, comfortably packed, (D) Train Full / Crushed at Door, E - Super Crushed | 8:49:02 passed-full | : : | : : | : : | 10 | On: 0 Off: 0 |
| 28 | 2251 | Inbound | (A) Empty, (B) Comfortable Circulation, (C) Restricted Circulation, D - Crushed | A - Seats available, few standees, (B) Seats full, comfortable standing, C - Seats full, comfortably packed, D - Train Full / Crushed at Door, E - Super Crushed | A - Seats available, few standees, (B) Seats full, comfortable standing, C - Seats full, comfortably packed, D - Train Full / Crushed at Door, E - Super Crushed | 8:55:24 | 8:55:25 | 8:55:53 | 8:55:55 | 0 8 | On: 8 Off: 0 — 2 people left to walk south on L Street to different bus stop |
| 29 | 2269 | Inbound | (A) Empty, (B) Comfortable Circulation, (C) Restricted Circulation, D - Crushed | A - Seats available, few standees, B - Seats full, comfortable standing, (C) Seats full, comfortably packed, D - Train Full / Crushed at Door, E - Super Crushed | A - Seats available, few standees, B - Seats full, comfortable standing, (C) Seats full, comfortably packed, D - Train Full / Crushed at Door, E - Super Crushed | 8:55:42 passed Stop | : : while other bus was boarding | : : | : : | 0 | On: 0 Off: 0 |
| 30 | xxxx | Inbound | A - Empty, (B) Comfortable Circulation, (C) Restricted Circulation, D - Crushed | A - Seats available, few standees, (B) Seats full, comfortable standing, C - Seats full, comfortably packed, D - Train Full / Crushed at Door, E - Super Crushed | A - Seats available, few standees, (B) Seats full, comfortable standing, C - Seats full, comfortably packed, D - Train Full / Crushed at Door, E - Super Crushed | 9:09:xx | 9:09:xx | 9:09:xx | 9:09:xx | 0 | On: 4 Off: 0 |

↳ I boarded this bus, so times are not exact.

Note:
1. Record all times in Hours : Minutes : Seconds format
2. If no delay in "Door Open Time" after "Wheel Stop Time" mark with a slash (/) only
3. If no delay in "Wheel Move Time" after "Final Door Close Time" mark with a slash (/) only

C - Crowding
S - Signal at Stop
E - EMS Action
P - Police Action
W - Wheelchair pass req assistance
D - Doors req repeated cycling unrelated to crowding

C - Crowding
S - Signal at Stop
E - EMS Action
P - Police Action

**MBTA Route #7 Bus**
**Data Collection Form**

Date: 3/21/2017
Start Time: 4:00PM
Location: South Station Bus Stop @ Summer Street
Direction: Outbound

Observer: C. Dube
End Time: 6:00PM
Weather: Clear ~50°F

Sheet 1 of 3

| Observation # | Bus # | Direction | BUS STATION Crowding at Arrival | BUS Capacity at Arrival | BUS Capacity at Departure | Wheel Stop Time | Door Open Time | Final Door Close Time | Wheel Move Time | # of Pass unable to board | Delay Notes: |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2216 | Outbound | (A) Empty<br>B - Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | (A) Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | (A) Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | Scheduled 3:59PM<br>4:03:08 | 4:03:09 | 4:03:13 | 4:03:14 | 0 | On: 0<br>Off: 0 |
| 2 | 1797 | Outbound | (A) Empty<br>B - Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | (A) Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | (A) Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | Scheduled 4:08PM<br>4:10:30 | 4:10:32 | 4:10:59 | 4:11:06 | 0 | On: 6<br>Off: 0 |
| 3 | 2266 | Outbound | (A) Empty<br>B - Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | (A) Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | (A) Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | Scheduled 4:17PM<br>4:17:53 | 4:17:54 | 4:18:13 | 4:18:16 | 0 | On: 10<br>Off: 0 |
| 4 | 2121 | Outbound | (A) Empty<br>B - Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | (A) Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | (A) Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | Scheduled 4:27PM<br>4:2848 | 4:2848 | 4:29:47 | 4:30:04 | 0 | On: 4<br>Off: 0 |
| 5 | 2266 | Outbound | (A) Empty<br>B - Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | A - Seats available, few standees<br>(B) Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>(B) Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | Scheduled 4:35PM<br>4:40:04 | 4:40:05 | 4:42:07 | 4:42:11 | 0 | On: ~~22~~23<br>Off: 0 |
| 6 | 2216 | Outbound | (A) Empty<br>(B) Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | (A) Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | (A) Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | Scheduled 4:43PM<br>4:45:43 | 4:45:44 | 4:46:00 | 4:46:02 | 0 | On: 5<br>Off: 0 |
| 7 | 1797 | Outbound | (A) Empty<br>B - Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | (A) Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>(B) Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | Scheduled 4:51PM<br>4:53:09 | 4:53:12 | 4:53:39 | 4:53:42 | 0 | On: 13<br>Off: 0 |
| 8 | 2266 | Outbound | (A) Empty<br>B - Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | (A) Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>(B) Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | Scheduled 4:59PM<br>4:59:36 | 4~~59~~:38 | 5:01:31 | 5:01:33 | 0 | On: 18<br>Off: 0 |
| 9 | 2138 | Outbound | A - Empty<br>(B) Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>(C) Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>(E) Super Crushed | Scheduled 5:06PM<br>5:08:58<br>NO 5:12PM & 5:18PM BUS | 5:08:00 | 5:09:45 | 5:09:47 | 4 | On: 22<br>Off: 0 |
| 10 | ~~2220~~<br>~~2206~~<br>2216 | Outbound | A - Empty<br>B - Comfortable Circulation<br>(C) Restricted Circulation<br>D - Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>(C) Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>(C) Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | Scheduled 5:24PM<br>5:24:26<br>passed | : : | : : | : : | | On: 0<br>Off: 0 |

Note:
1. Record all times in Hours : Minutes : Seconds format
2. If no delay in "Door Open Time" after "Wheel Stop Time" mark with a slash (/) only
3. If no delay in "Wheel Move Time" after "Final Door Close Time" mark with a slash (/) only

C - Crowding  E - EMS Action  W - Wheelchair pass req assistance  D - Doors req repeated cycling unrelated to crowding  C - Crowding  E - EMS Action
S - Signal at Stop  P - Police Action  S - Signal at Stop  P - Police Action

**MBTA Route #7 Bus**
**Data Collection Form**

Date: 3/21/2017
Start Time: 4:00PM
Location: South Station Bus Stop @ Summer Street
Direction: Outbound

Observer: C. Dube
End Time: 6:00PM
Weather: Clear ~50°F

Sheet 2 of 3

| Observation # | Bus # | Direction | BUS STATION Crowding at Arrival | BUS Capacity at Arrival | BUS Capacity at Departure | Wheel Stop Time | Door Open Time | Final Door Close Time | Wheel Move Time | # of Pass unable to board | Delay Notes: |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | 2206 | Outbound | A - Empty<br>B - Comfortable Circulation<br>(C) - Restricted Circulation<br>D - Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>(D) Train Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>(D) Train Full / Crushed at Door<br>E - Super Crushed | Scheduled 5:30PM<br>5:28:20 | 5:28:23 | 5:29:10 | 5:29:13 | 3 | on: 16<br>off: 0 |
| 12 | 1842 | Outbound | A - Empty<br>(B) Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>(C) Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>(C) Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | Scheduled 5:36PM<br>5:41:22<br>(ASSIGNED STOP) | ~~5:41:24~~ | ~~5:42:27~~ | ~~5:42:30~~ | next bus directly behind | on:<br>off: |
| 13 | 1797 | Outbound | A - Empty<br>(B) Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | A - Seats available, few standees<br>(B) Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>(C) Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | Scheduled 5:42PM<br>5:41:33 | 5:41:31 | 5:42:27 | 5:42:30 | 0 | on: 22<br>off: 0 |
| 14 | 2266 | Outbound | A - Empty<br>(B) Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | (A) Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>(B) Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | Scheduled 5:48PM<br>5:49:13 | 5:49:15 | 5:49:31 | 5:49:36 | 0 | on: 9<br>off: 0 |
| 15 | 2138 | Outbound | A - Empty<br>(B) Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | (A) Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | (A) Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | Scheduled 5:54PM<br>5:55:35 | 5:55:36 | 5:55:56 | 5:55:58 | 0 | on: 9<br>off: 0 |
| 16 | 2230 | Outbound | A - Empty<br>(B) Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>(C) Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>(C) Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | Scheduled 6:00PM<br>5:59:42 | 5:59:43 | 6:00:48 | 6:00:50 | 0 | on: 10<br>off: 0 |
| 17 | | Outbound | A - Empty<br>B - Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | : : | : : | : : | : : | | on:<br>off: |
| 18 | | Outbound | A - Empty<br>B - Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | : : | : : | : : | : : | | on:<br>off: |
| 19 | | Outbound | A - Empty<br>B - Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | : : | : : | : : | : : | | on:<br>off: |
| 20 | | Outbound | A - Empty<br>B - Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | : : | : : | : : | : : | | on:<br>off: |

**Note:**

1. Record all times in Hours : Minutes : Seconds format
2. If no delay in "Door Open Time" after "Wheel Stop Time" mark with a slash (/) only
3. If no delay in "Wheel Move Time" after "Final Door Close Time" mark with a slash (/) only

*C - Crowding*
*S - Signal at Stop*
*E - EMS Action*
*P - Police Action*
*W - Wheelchair pass req assistance*
*D - Doors req repeated cycling unrelated to crowding*

*C - Crowding*
*S - Signal at Stop*
*E - EMS Action*
*P - Police Action*

**MBTA Route #7 Bus**
**Data Collection Form**

Date: 3/21/2017
Start Time: 4:00PM
Location: South Station Bus Stop @ Summer Street
Direction: Outbound

Observer: C. Duke
End Time: 6:00PM
Weather: clear ~50°F



| Observation # | Bus # | Direction | BUS STATION Crowding at Arrival | BUS Capacity at Arrival | BUS Capacity at Departure | Wheel Stop Time | Door Open Time | Final Door Close Time | Wheel Move Time | # of Pass unable to board | Delay Notes: |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 21 | | Outbound | A - Empty<br>B - Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | : : | : : | : : | : : | | on:<br>off: |
| 22 | | Outbound | A - Empty<br>B - Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | : : | : : | : : | : : | | on:<br>off: |
| 23 | | Outbound | A - Empty<br>B - Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | : : | : : | : : | : : | | on:<br>off: |
| 24 | | Outbound | A - Empty<br>B - Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | : : | : : | : : | : : | | on:<br>off: |
| 25 | | Outbound | A - Empty<br>B - Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | : : | : : | : : | : : | | on:<br>off: |
| 26 | | Outbound | A - Empty<br>B - Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | : : | : : | : : | : : | | on:<br>off: |
| 27 | | Outbound | A - Empty<br>B - Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | : : | : : | : : | : : | | on:<br>off: |
| 28 | | Outbound | A - Empty<br>B - Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | : : | : : | : : | : : | | on:<br>off: |
| 29 | | Outbound | A - Empty<br>B - Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | : : | : : | : : | : : | | on:<br>off: |
| 30 | | Outbound | A - Empty<br>B - Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Train Full / Crushed at Door<br>E - Super Crushed | : : | : : | : : | : : | | on:<br>off: |

Note:

1. Record all times in Hours : Minutes : Seconds format
2. If no delay in "Door Open Time" after "Wheel Stop Time" mark with a slash (/) only

*C - Crowding* *E - EMS Action* *W - Wheelchair pass req assistance* *C - Crowding* *E - EMS Action*
*D - Doors req repeated cycling unrelated to crowding*

3. If no delay in "Wheel Move Time" after "Final Door Close Time" mark with a slash (/) only

*S - Signal at Stop* *P - Police Action* *S - Signal at Stop* *P - Police Action*

# MBTA Route #7 Bus
## Data Collection Form

Date: 10/2/2017
Start Time: 5:00 PM
Location: South Station
Direction: Outbound

Observer: CD
End Time: 6:00PM
Weather: Clear ~60°F

Sheet 1 of _____

| Observation # | Bus # | Direction | BUS STATION Crowding at Arrival | BUS Capacity at Arrival | BUS Capacity at Departure | Wheel Stop Time | Door Open Time | Final Door Close Time | Wheel Move Time | # of Pass unable to board | Delay Notes: |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | ~~1748~~ 1766 | Outbound | A - Empty<br>B - Comfortable Circulation<br>**C - Restricted Circulation**<br>D - Crushed | A - Seats available, few standees<br>**B - Seats full, comfortable standing**<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>**E - Super Crushed** | 5 : 05 : 17 | : : | 5 : 06 : 48 | 5 : 06 : 55 | ~20 | |
| 2 | ~~1748~~ | Outbound | A - Empty<br>**B - Comfortable Circulation**<br>C - Restricted Circulation<br>D - Crushed | **A - Seats available, few standees**<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>**B - Seats full, comfortable standing**<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | 5 : 07 : 06 | : : | 5 : 07 : 47 | 5 : 07 : 49 | 0 | |
| 3 | 1908 | Outbound | A - Empty<br>**B - Comfortable Circulation**<br>C - Restricted Circulation<br>D - Crushed | **A - Seats available, few standees**<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>**B - Seats full, comfortable standing**<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | 5 : 11 : 09 | : : | 5 : 11 : 36 | 5 : 11 : 37 | 0 | |
| 4 | 1726 | Outbound | A - Empty<br>**B - Comfortable Circulation**<br>C - Restricted Circulation<br>D - Crushed | **A - Seats available, few standees**<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>**B - Seats full, comfortable standing**<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | 5 : 15 : 58 | ~~15~~ : : | 5 : 16 : 47 | 5 : 16 : 48 | 0 | |
| 5 | 1773 | Outbound | A - Empty<br>**B - Comfortable Circulation**<br>C - Restricted Circulation<br>D - Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>**C - Seats full, comfortably packed**<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>**E - Super Crushed** | 5 : 21 : 15 | : : | 5 : 25 : 22 | 5 : 25 : 24 | 7 | |
| 6 | 1832 | Outbound | A - Empty<br>**B - Comfortable Circulation**<br>C - Restricted Circulation<br>D - Crushed | **A - Seats available, few standees**<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>**C - Seats full, comfortably packed**<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | 5 : 25 : 32 | : : | 5 : 26 : 18 | 5 : 26 : 19 | 0 | |
| 7 | 1767 | Outbound | A - Empty<br>**B - Comfortable Circulation**<br>C - Restricted Circulation<br>D - Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>**C - Seats full, comfortably packed**<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>**E - Super Crushed** | 5 : 32 57 | : : | 5 : 34 : 11 | 5 : 34 : 13 | 5 | Opens back door to let people on |
| 8 | 1768 | Outbound | A - Empty<br>B - Comfortable Circulation<br>**C - Restricted Circulation**<br>D - Crushed | **A - Seats available, few standees**<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>**E - Super Crushed** | 5 : 40 : 16 | : : | 5 : 41 : 56 | 5 : 41 : 58 | 2 | |
| 9 | 1760 | Outbound | A - Empty<br>B - Comfortable Circulation<br>**C - Restricted Circulation**<br>D - Crushed | **A - Seats available, few standees**<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>**E - Super Crushed** | 5 : 53 : 13 | : : | 5 : 54 : 59 | 5 : 55 00 | 4 | |
| 10 | ~~1748~~ 1863 | Outbound | A - Empty<br>**B - Comfortable Circulation**<br>C - Restricted Circulation<br>D - Crushed | **A - Seats available, few standees**<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | 5 : 55 : 32 | : : | 5 : 55 : 47 | 5 : 55 : 48 | 0 | Stopped in the middle of the street |

Note:

1. Record all times in Hours : Minutes : Seconds format
2. If no delay in "Door Open Time" after "Wheel Stop Time" mark with a slash (/) only
3. If no delay in "Wheel Move Time" after "Final Door Close Time" mark with a slash (/) only

*C - Crowding* *E - EMS Action* *W - Wheelchair pass req ossistance* *D - Doors req repeoted cycling unreloted to crowding* *C - Crowding* *E - EMS Action*

*S - Signal at Stop* *P - Police Action* *S - Signal at Stop* *P - Police Action*

MBTA Route #7 Bus
Data Collection Form

Date: 10/2/2017
Start Time: 5:00 PM
Location: South Station
Direction: Outbound

Observer: CD
End Time: 6:00PM
Weather: Clear ~60°F

Sheet 2 of ______

| Observation # | Bus # | Direction | BUS STATION Crowding at Arrival | BUS Capacity at Arrival | BUS Capacity at Departure | Wheel Stop Time | Door Open Time | Final Door Close Time | Wheel Move Time | # of Pass unable to board | Delay Notes: |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | 1908 | Outbound | A - Empty<br>(B) - Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | (A) - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | 5:58:56 | : : | 5:59:19 | 5:59:20 | 0 | |
| | | Outbound | A - Empty<br>B - Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | : : | : : | : : | : : | | |
| | | Outbound | A - Empty<br>B - Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | : : | : : | : : | : : | | |
| | | Outbound | A - Empty<br>B - Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | : : | : : | : : | : : | | |
| | | Outbound | A - Empty<br>B - Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | : : | : : | : : | : : | | |
| | | Outbound | A - Empty<br>B - Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | : : | : : | : : | : : | | |
| | | Outbound | A - Empty<br>B - Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | : : | : : | : : | : : | | |
| | | Outbound | A - Empty<br>B - Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | : : | : : | : : | : : | | |
| | | Outbound | A - Empty<br>B - Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | : : | : : | : : | : : | | |
| | | Outbound | A - Empty<br>B - Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | : : | : : | : : | : : | | |

Note:
1. Record all times in Hours : Minutes : Seconds format
2. If no delay in "Door Open Time" after "Wheel Stop Time" mark with a slash (/) only
3. If no delay in "Wheel Move Time" after "Final Door Close Time" mark with a slash (/) only

*C - Crawding*  *E - EMS Action*  *W - Wheelchair pass req assistance*  *D - Doors req repeated cycling unrelated to crowding*  *C - Crowding*  *E - EMS Action*

*S - Signal at Stop*  *P - Police Action*  *S - Signal at Stop*  *P - Police Action*

# MBTA Route #7 Bus
## Data Collection Form

Date: 10/4/2017
Start Time: 5:00PM
Location: South Station Bus Stop
Direction: Outbound

Observer: CD
End Time: 6:00PM
Weather: Clear ~60°F

Sheet 1 of 2

| Observation # | Bus # | Direction | BUS STATION Crowding at Arrival | BUS Capacity at Arrival | BUS Capacity at Departure | Wheel Stop Time | Door Open Time | Final Door Close Time | Wheel Move Time | # of Pass unable to board | Delay Notes: |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1833 | Outbound | A - Empty **B - Comfortable Circulation** C - Restricted Circulation D - Crushed | **A** - Seats available, few standees B - Seats full, comfortable standing C - Seats full, comfortably packed D - Bus Full / Crushed at Door E - Super Crushed | **A** - Seats available, few standees B - Seats full, comfortable standing C - Seats full, comfortably packed D - Bus Full / Crushed at Door E - Super Crushed | 5:03:33 | : : | 5:05:07 | 5:04:08 | 0 | 13 pax boarded |
| 2 | 1776 | Outbound | A - Empty **B - Comfortable Circulation** C - Restricted Circulation D - Crushed | A - Seats available, few standees **B** - Seats full, comfortable standing C - Seats full, comfortably packed D - Bus Full / Crushed at Door E - Super Crushed | A - Seats available, few standees **B** - Seats full, comfortable standing C - Seats full, comfortably packed D - Bus Full / Crushed at Door E - Super Crushed | — : | : : | — : | 5:05:28 | ~5 | ~~pax boarded~~ BUS PASSED |
| 3 | 1724 | Outbound | A - Empty **B - Comfortable Circulation** C - Restricted Circulation D - Crushed | A - Seats available, few standees **B** - Seats full, comfortable standing C - Seats full, comfortably packed D - Bus Full / Crushed at Door E - Super Crushed | A - Seats available, few standees B - Seats full, comfortable standing **C** - Seats full, comfortably packed D - Bus Full / Crushed at Door E - Super Crushed | 5:12:35 | : : | 5:13:20 | 5:13:21 | 0 | ~17 pax boarded |
| 4 | 1871 | Outbound | A - Empty **B - Comfortable Circulation** C - Restricted Circulation D - Crushed | A - Seats available, few standees B - Seats full, comfortable standing **C** - Seats full, comfortably packed D - Bus Full / Crushed at Door E - Super Crushed | A - Seats available, few standees B - Seats full, comfortable standing C - Seats full, comfortably packed **D** - Bus Full / Crushed at Door E - Super Crushed | 5:16:20 | : : | 5:17:17 | 5:17:18 | 0 | ~14 pax boarded |
| 5 | 1749 | Outbound | A - Empty **B - Comfortable Circulation** C - Restricted Circulation D - Crushed | **A** - Seats available, few standees B - Seats full, comfortable standing C - Seats full, comfortably packed D - Bus Full / Crushed at Door E - Super Crushed | A - Seats available, few standees B - Seats full, comfortable standing **C** - Seats full, comfortably packed D - Bus Full / Crushed at Door E - Super Crushed | 5:20:01 | : : | 5:21:03 | 5:21:04 | 0 | ~~18~~ 20 pax boarded |
| 6 | 1815 | Outbound | A - Empty **B** - Comfortable Circulation C - Restricted Circulation D - Crushed | A - Seats available, few standees B - Seats full, comfortable standing **C** - Seats full, comfortably packed D - Bus Full / Crushed at Door E - Super Crushed | A - Seats available, few standees B - Seats full, comfortable standing **C** - Seats full, comfortably packed D - Bus Full / Crushed at Door E - Super Crushed | — : | : : | — : | 5:25:25 | ~10 | BUS PASSED |
| 7 | 1817 | Outbound | A - Empty B - Comfortable Circulation **C** - Restricted Circulation D - Crushed | A - Seats available, few standees **B** - Seats full, comfortable standing C - Seats full, comfortably packed D - Bus Full / Crushed at Door E - Super Crushed | A - Seats available, few standees B - Seats full, comfortable standing C - Seats full, comfortably packed **D** - Bus Full / Crushed at Door E - Super Crushed | 5:33:10 | : : | 5:34:50 | 5:35:03 | 0 | ~25 pax boarded |
| 8 | 1791 | Outbound | A - Empty **B** - Comfortable Circulation C - Restricted Circulation D - Crushed | A - Seats available, few standees B - Seats full, comfortable standing **C** - Seats full, comfortably packed D - Bus Full / Crushed at Door E - Super Crushed | A - Seats available, few standees B - Seats full, comfortable standing C - Seats full, comfortably packed **D** - Bus Full / Crushed at Door E - Super Crushed | 5:40:16 | : : | 5:41:27 | 5:41:28 | 6 | ~16 pax boarded |
| 9 | 1833 | Outbound | A - Empty B - Comfortable Circulation **C** - Restricted Circulation D - Crushed | **A** - Seats available, few standees **B** - Seats full, comfortable standing C - Seats full, comfortably packed D - Bus Full / Crushed at Door E - Super Crushed | A - Seats available, few standees B - Seats full, comfortable standing **C** - Seats full, comfortably packed D - Bus Full / Crushed at Door E - Super Crushed | 5:47:29 | : : | 5:48:13 | 5:48:15 | 0 | ~20 pax boarded |
| 10 | 1966 | Outbound | A - Empty B - Comfortable Circulation C - Restricted Circulation D - Crushed | A - Seats available, few standees B - Seats full, comfortable standing C - Seats full, comfortably packed D - Bus Full / Crushed at Door E - Super Crushed | A - Seats available, few standees B - Seats full, comfortable standing C - Seats full, comfortably packed D - Bus Full / Crushed at Door E - Super Crushed | — : | : : | — : | 5:47:31 | — | BUS PASSED WHILE 1833 WAS BOARDING |

Note:

1. Record all times in Hours : Minutes : Seconds format
2. If no delay in "Door Open Time" after "Wheel Stop Time" mark with a slash (/) only
3. If no delay in "Wheel Move Time" after "Final Door Close Time" mark with a slash (/) only

C - Crowding
S - Signal at Stop
E - EMS Action
P - Police Action
W - Wheelchair pass req assistance
D - Doors req repeated cycling unrelated to crowding

C - Crowding
S - Signal at Stop
E - EMS Action
P - Police Action

## MBTA Route #7 Bus
## Data Collection Form

Date: 10/4/2017
Start Time: 5:00PM
Location: South Station
Direction: Outbound

Observer: CD
End Time: 6:00PM
Weather: Clear ~60°F

Sheet 2 of 2

| Observation # | Bus # | Direction | BUS STATION Crowding at Arrival | BUS Capacity at Arrival | BUS Capacity at Departure | Wheel Stop Time | Door Open Time | Final Door Close Time | Wheel Move Time | # of Pass unable to board | Delay Notes: |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | 1858 | Outbound | A - Empty<br>B - Comfortable Circulation (circled: B)<br>C - Restricted Circulation<br>D - Crushed | A - Seats available, few standees (circled: A)<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees (circled: A)<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | 5:53:08 | : : | 5:53:29 | 5:53:30 | 0 | ~~8~~ 10 pax boarded |
| 12 | 1724 | Outbound | A - Empty<br>B - Comfortable Circulation (circled: B)<br>C - Restricted Circulation<br>D - Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing (circled: B)<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | 6:00:31 | : : | 6:01:28 | 6:01:36 | 0 | 14 pax boarded |
| | | Outbound | A - Empty<br>B - Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | : : | : : | : : | : : | | |
| | | Outbound | A - Empty<br>B - Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | : : | : : | : : | : : | | |
| | | Outbound | A - Empty<br>B - Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | : : | : : | : : | : : | | |
| | | Outbound | A - Empty<br>B - Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | : : | : : | : : | : : | | |
| | | Outbound | A - Empty<br>B - Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | : : | : : | : : | : : | | |
| | | Outbound | A - Empty<br>B - Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | : : | : : | : : | : : | | |
| | | Outbound | A - Empty<br>B - Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | : : | : : | : : | : : | | |
| | | Outbound | A - Empty<br>B - Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | : : | : : | : : | : : | | |

Note:
1. Record all times in Hours : Minutes : Seconds format
2. If no delay in "Door Open Time" after "Wheel Stop Time" mark with a slash (/) only
3. If no delay in "Wheel Move Time" after "Final Door Close Time" mark with a slash (/) only

*C - Crowding* *E - EMS Action* *W - Wheelchair pass req assistance*
*D - Doors req repeated cycling unrelated to crowding*
*S - Signal at Stop* *P - Police Action*

*C - Crowding* *E - EMS Action*
*S - Signal at Stop* *P - Police Action*

**MBTA Route #7 Bus**
**Data Collection Form**

Date: 10/4/2017
Start Time: 8:00 AM
Location: L St/E 2nd & 1st St Bus Stop
Direction: Inbound

CA = Congress + Atlantic
OS = Otis + Summer

Observer: CD
End Time: 9:00AM
Weather: Clear ~55°F

Sheet 1 of 3

| Observation # | Bus # | Direction | BUS STATION Crowding at Arrival | BUS Capacity at Arrival | BUS Capacity at Departure | Wheel Stop Time | Door Open Time | Final Door Close Time | Wheel Move Time | # of Pass unable to board | Delay Notes: |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1727 | Inbound CA | (B) | (C) | (C) | 8:02:12 | : : | 8:02:20 | 8:02:21 | 0 | 2 pax |
| 2 | 1917 | Inbound OS | (B) | (E) | (E) | ~~:53~~ | : : | - | 8:06:53 | 6 | 6 pax |
| 3 | 1788 | Inbound CA | (C) | (A) | (A) | - | : : | Didn't stop due to bunching | 8:07:40 | 12 | ~~IIII~~ 11 pax |
| 4 | 1739 | Inbound CA | (C) | (B) | (C) | 8:08:10 | : : | 8:08:20 | 8:08:21 | 0 | 12 pax |
| 5 | 1868 | Inbound CA | (B) | (D) | (D) | 8:13:05 | : : | 8:13:09 | 8:13:16 | 0 | 1 pax |
| 6 | 1854 | Inbound OS | (B) | (E) | (E) | - | : : | - | 8:16:13 | 2 | ~~1~~ 2 pax |
| 7 | 1897 | Inbound CA | (B) | (C) | (C) | - | : : | - | 8:18:06 | 5 | 5 pax bus had room |
| 8 | ~~1881~~ 1784 | Inbound OS | (B) | (A) | (B) | 8:19:38 | : : | 8:19:58 | 8:20:02 | 0 | IIII 7 pax |
| 9 | ~~1826~~ 1824 | Inbound CA | (B) | (D) | (D) | - | : : | - | 8:25:53 | 3 | 3 pax |
| 10 | 1831 | Inbound CA | (B) | (E) | (E) | - | : : | - | 8:29:12 | 7 | 7 pax |

A - Empty
B - Comfortable Circulation
C - Restricted Circulation
D - Crushed

A - Seats available, few standees
B - Seats full, comfortable standing
C - Seats full, comfortably packed
D - Bus Full / Crushed at Door
E - Super Crushed

Note:
1. Record all times in Hours : Minutes : Seconds format
2. If no delay in "Door Open Time" after "Wheel Stop Time" mark with a slash (/) only
3. If no delay in "Wheel Move Time" after "Final Door Close Time" mark with a slash (/) only

C - Crowding
S - Signal at Stop
E - EMS Action
P - Police Action
W - Wheelchair pass req assistonce
D - Doors req repeated cycling unrelated to crowding

C - Crowding
S - Signal at Stop
E - EMS Action
P - Police Action

# MBTA Route #7 Bus
## Data Collection Form

Date: 10/4/2017
Start Time: 8:00 AM
Location: L St/ East 1st Street Bus Stop
Direction: Inbound

Observer: CD
End Time: 9:00 AM
Weather: Clear ~55°F



| Observation # | Bus # | Direction | BUS STATION Crowding at Arrival | BUS Capacity at Arrival | BUS Capacity at Departure | Wheel Stop Time | Door Open Time | Final Door Close Time | Wheel Move Time | # of Pass unable to board | Delay Notes: |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | 1749 | Inbound CA | A - Empty **B - Comfortable Circulation** C - Restricted Circulation D - Crushed | **A** - Seats available, few standees B - Seats full, comfortable standing C - Seats full, comfortably packed D - Bus Full / Crushed at Door E - Super Crushed | A - Seats available, few standees **B** - Seats full, comfortable standing C - Seats full, comfortably packed D - Bus Full / Crushed at Door E - Super Crushed | 8:31:09 | : : | 8:31:30 | 8:31:32 | 0 | 7 pax |
| 12 | 1788 | Inbound OS | A - Empty **B - Comfortable Circulation** C - Restricted Circulation D - Crushed | **A** - Seats available, few standees B - Seats full, comfortable standing C - Seats full, comfortably packed D - Bus Full / Crushed at Door E - Super Crushed | **A** - Seats available, few standees B - Seats full, comfortable standing C - Seats full, comfortably packed D - Bus Full / Crushed at Door E - Super Crushed | 8:34:16 | : | 8:34:18 | 8:34:19 | 0 | 2 pax |
| 13 | 1727 | Inbound OS | A - Empty **B - Comfortable Circulation** C - Restricted Circulation D - Crushed | A - Seats available, few standees **B** - Seats full, comfortable standing C - Seats full, comfortably packed D - Bus Full / Crushed at Door E - Super Crushed | A - Seats available, few standees **B** - Seats full, comfortable standing C - Seats full, comfortably packed D - Bus Full / Crushed at Door E - Super Crushed | 8:36:55 | : : | 8:36:02 | 8:36:03 | 0 | 1 pax |
| 14 | ~~1868~~ 1739 | Inbound ~~CA~~ CA | A - Empty **B - Comfortable Circulation** C - Restricted Circulation D - Crushed | **A** - Seats available, few standees B - Seats full, comfortable standing C - Seats full, comfortably packed D - Bus Full / Crushed at Door E - Super Crushed | **A** - Seats available, few standees B - Seats full, comfortable standing C - Seats full, comfortably packed D - Bus Full / Crushed at Door E - Super Crushed | 8:38:42 | : : | 8:38:52 | 8:38:54 | 0 | 3 pax |
| 15 | 1868 | Inbound OS | **A - Empty** B - Comfortable Circulation C - Restricted Circulation D - Crushed | **A** - Seats available, few standees B - Seats full, comfortable standing C - Seats full, comfortably packed D - Bus Full / Crushed at Door E - Super Crushed | **A** - Seats available, few standees B - Seats full, comfortable standing C - Seats full, comfortably packed D - Bus Full / Crushed at Door E - Super Crushed | — : : | : : | — : : | 8:40:35 | 0 | 0 pax |
| 16 | 1833 | Inbound CA | **A - Empty** B - Comfortable Circulation C - Restricted Circulation D - Crushed | A - Seats available, few standees **B** - Seats full, comfortable standing C - Seats full, comfortably packed D - Bus Full / Crushed at Door E - Super Crushed | A - Seats available, few standees **B** - Seats full, comfortable standing C - Seats full, comfortably packed D - Bus Full / Crushed at Door E - Super Crushed | — : : | : : | — : : | 8:42:36 | 0 | 0 pax |
| 17 | 1897 | Inbound OS | A - Empty **B - Comfortable Circulation** C - Restricted Circulation D - Crushed | A - Seats available, few standees B - Seats full, comfortable standing **C** - Seats full, comfortably packed D - Bus Full / Crushed at Door E - Super Crushed | A - Seats available, few standees B - Seats full, comfortable standing **C** - Seats full, comfortably packed D - Bus Full / Crushed at Door E - Super Crushed | 8 : : | : : | 8 : : | 8:50:58 | 4 | 1111 4 pax |
| 18 | 1917 | Inbound CA | A - Empty **B - Comfortable Circulation** C - Restricted Circulation D - Crushed | **A** - Seats available, few standees B - Seats full, comfortable standing C - Seats full, comfortably packed D - Bus Full / Crushed at Door E - Super Crushed | **A** - Seats available, few standees B - Seats full, comfortable standing C - Seats full, comfortably packed D - Bus Full / Crushed at Door E - Super Crushed | 8:52:22 | : : | 8:52:33 | 8:52:35 | 0 | 4 pax |
| 19 | 1740 | Inbound OS | **A - Empty** B - Comfortable Circulation C - Restricted Circulation D - Crushed | **A** - Seats available, few standees B - Seats full, comfortable standing C - Seats full, comfortably packed D - Bus Full / Crushed at Door E - Super Crushed | **A** - Seats available, few standees B - Seats full, comfortable standing C - Seats full, comfortably packed D - Bus Full / Crushed at Door E - Super Crushed | — : : | : : | — : : | 8:54:11 | 0 | 0 pax |
| 20 | 1816 | Inbound CA | A - Empty **B - Comfortable Circulation** C - Restricted Circulation D - Crushed | **A** - Seats available, few standees B - Seats full, comfortable standing C - Seats full, comfortably packed D - Bus Full / Crushed at Door E - Super Crushed | **A** - Seats available, few standees B - Seats full, comfortable standing C - Seats full, comfortably packed D - Bus Full / Crushed at Door E - Super Crushed | 8:58:51 | : : | 8:58:59 | 8:59:06 | 0 | 2 pax |

Note:

1. Record all times in Hours : Minutes : Seconds format
2. If no delay in "Door Open Time" after "Wheel Stop Time" mark with a slash (/) only
3. If no delay in "Wheel Move Time" after "Final Door Close Time" mark with a slash (/) only

*C - Crowding* *E - EMS Action* *W - Wheelchair pass req assistance* *D - Doors req repeated cycling unrelated to crowding* *C - Crowding* *E - EMS Action*

*S - Signal at Stop* *P - Police Action* *S - Signal at Stop* *P - Police Action*

MBTA Route #7 Bus
Data Collection Form

Date: 10/4/207
Start Time: 8:00AM
Location: L St/East 1 St Street Bus Stop
Direction: Inbound

Observer: CD
End Time: 9:00AM
Weather: Clear ~55°F

Sheet 3 of 3

| Observation # | Bus # | Direction | BUS STATION Crowding at Arrival | BUS Capacity at Arrival | BUS Capacity at Departure | Wheel Stop Time | Door Open Time | Final Door Close Time | Wheel Move Time | # of Pass unable to board | Delay Notes: |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 21 | 1849 | Inbound OS | A - Empty<br>(B) - Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | (A) - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | (A) - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | 9:01:13 | / | 9:01:18 | 9:01:19 | 0 | 1 pax |
| | | Inbound | A - Empty<br>B - Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | : : | : : | : : | : : | | |
| | | Inbound | A - Empty<br>B - Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | : : | : : | : : | : : | | |
| | | Inbound | A - Empty<br>B - Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | : : | : : | : : | : : | | |
| | | Inbound | A - Empty<br>B - Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | : : | : : | : : | : : | | |
| | | Inbound | A - Empty<br>B - Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | : : | : : | : : | : : | | |
| | | Inbound | A - Empty<br>B - Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | : : | : : | : : | : : | | |
| | | Inbound | A - Empty<br>B - Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | : : | : : | : : | : : | | |
| | | Inbound | A - Empty<br>B - Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | : : | : : | : : | : : | | |
| | | Inbound | A - Empty<br>B - Comfortable Circulation<br>C - Restricted Circulation<br>D - Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | A - Seats available, few standees<br>B - Seats full, comfortable standing<br>C - Seats full, comfortably packed<br>D - Bus Full / Crushed at Door<br>E - Super Crushed | : : | : : | : : | : : | | |

Note:

1. Record all times in Hours : Minutes : Seconds format
2. If no delay in "Door Open Time" after "Wheel Stop Time" mark with a slash (/) only
3. If no delay in "Wheel Move Time" after "Final Door Close Time" mark with a slash (/) only

*C - Crowding* *E - EMS Action* *W - Wheelchair poss req assistance*
*D - Doors req repeated cycling unrelated to crowding*
*S - Signal at Stop* *P - Police Action*

*C - Crowding* *E - EMS Action*
*S - Signal at Stop* *P - Police Action*

Massachusetts Bay Transportation Authority
Route 5
Weekday - Inbound

(Urban Transportation Associates)

| | Trip (RouteVar)(Block) [Observations] | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 09:05 (5.0)(B060) [65] {FA17} | | | 10:05 (5.0)(B066) [43] {FA17} | | | 11:05 (5.0)(B066) [39] {FA17} | | | 12:05 (5.0)(B024) [56] {FA17} | | | 13:05 (5.0)(B024) [47] {FA17} | | | 14:05 (5.0)(B295) [55] {FA17} | | | 15:05 (5.0)(B101) [54] {FA17} | | | Total | | |
| Seq - StopID - Stop Name | On | Off | Load | On | Off | Load | On | Off | Load | On | Off | Load | On | Off | Load | On | Off | Load | On | Off | Load | On | Off | Load |
| 1 - 33 - CITY POINT BUS TERMINAL | 1.2 | 0 | 1.2 | 0.6 | 0 | 0.6 | 0.6 | 0 | 0.6 | 0.7 | 0 | 0.7 | 0.8 | 0 | 0.8 | 0.3 | 0 | 0.3 | 1.1 | 0 | 1.1 | 5.3 | 0 | 5.3 |
| 2 - 10033 - E 1ST ST @ O ST | 0 | 0 | 1.3 | 0.1 | 0 | 1.4 | 0.1 | 0 | 1.1 | 0.1 | 0 | 1.2 | 0.2 | 0 | 1.4 | 0.1 | 0 | 0.5 | 0.3 | 0 | 1.5 | 0.9 | 0 | 8.4 |
| 3 - 34 - P ST @ E 2ND ST | 0 | 0 | 1.3 | 0 | 0 | 1.4 | 0 | 0 | 1 | 0.1 | 0 | 1.3 | 0 | 0 | 1.4 | 0.1 | 0 | 0.6 | 0.1 | 0 | 1.6 | 0.3 | 0 | 8.6 |
| 4 - 35 - P ST @ E BROADWAY | 0.2 | 0 | 1.5 | 0 | 0 | 1.4 | 0.2 | 0 | 1.2 | 0.5 | 0 | 1.8 | 0.2 | 0 | 1.7 | 0.1 | 0 | 0.7 | 0.5 | 0 | 2.1 | 1.7 | 0 | 10.4 |
| 5 - 895 - E BROADWAY @ N ST | 0.3 | 0 | 1.8 | 0.1 | 0 | 1.4 | 0.2 | 0 | 1.4 | 0.2 | 0 | 2 | 0.1 | 0 | 1.8 | 0.1 | 0 | 0.8 | 0.1 | 0 | 2.2 | 1.1 | 0 | 11.4 |
| 6 - 896 - E BROADWAY @ M ST | 0.1 | 0 | 1.9 | 0 | 0 | 1.4 | 0.1 | 0 | 1.5 | 0.1 | 0 | 2.1 | 0.1 | 0 | 1.9 | 0 | 0 | 0.8 | 0.1 | 0 | 2.3 | 0.5 | 0 | 11.9 |
| 7 - 41 - E BROADWAY @ L ST | 0.2 | 0 | 2.1 | 0.3 | 0 | 1.6 | 0.4 | 0 | 2 | 0.5 | 0.1 | 2.4 | 0.3 | 0 | 2.2 | 0.7 | 0.1 | 1.4 | 0.4 | 0 | 2.6 | 2.8 | 0.2 | 14.3 |
| 8 - 42 - E BROADWAY @ K ST | 0.5 | 0 | 2.6 | 1 | 0.1 | 1.9 | 1.3 | 0.1 | 2.5 | 2.6 | 0.3 | 3.9 | 1.6 | 0.1 | 3 | 1.3 | 0 | 2.6 | 1.4 | 0 | 3.8 | 9.7 | 0.6 | 20.3 |
| 9 - 43 - E BROADWAY @ I ST | 0.2 | 0 | 2.8 | 0.3 | 0 | 2 | 0.6 | 0 | 2.8 | 0.7 | 0.1 | 4.4 | 0.6 | 0.1 | 3.1 | 1.3 | 0 | 3.7 | 1.7 | 0 | 5.3 | 5.4 | 0.2 | 24.1 |
| 10 - 44 - E BROADWAY @ H ST | 0.2 | 0 | 2.9 | 0.2 | 0 | 2.1 | 0.1 | 0.1 | 2.8 | 0.3 | 0 | 4.6 | 0.3 | 0 | 3.4 | 0.2 | 0 | 3.9 | 0.1 | 0 | 5.4 | 1.4 | 0.1 | 25.1 |
| 11 - 45 - E BROADWAY @ G ST | 0 | 0.1 | 2.9 | 0.1 | 0 | 2.2 | 0.1 | 0.1 | 2.9 | 0.3 | 0.7 | 4.2 | 0.1 | 0.1 | 3.4 | 0.9 | 0 | 4.7 | 0.5 | 0.1 | 5.9 | 2 | 1.1 | 26.2 |
| 12 - 46 - DORCHESTER ST @ BROADWAY | 0.5 | 0.2 | 3.2 | 0.9 | 0.1 | 3 | 1.6 | 0.4 | 4.2 | 1.7 | 0.5 | 5.4 | 2.1 | 0.5 | 5.1 | 2.9 | 0.3 | 7.3 | 2.7 | 0.3 | 8.2 | 12.4 | 2.3 | 36.4 |
| 13 - 47 - DORCHESTER ST @ W 5TH ST | 0 | 0 | 3.3 | 0.1 | 0 | 3.1 | 0.1 | 0 | 4.2 | 0.1 | 0.1 | 5.4 | 0.1 | 0 | 5.2 | 1.3 | 0.1 | 8.5 | 2.1 | 0.1 | 10.2 | 3.8 | 0.3 | 39.9 |
| 14 - 48 - DORCHESTER ST @ W 6TH ST | 0 | 0 | 3.3 | 0 | 0 | 3 | 0.1 | 0.1 | 4.2 | 0.1 | 0 | 5.5 | 0.1 | 0 | 5.3 | 0.1 | 0.1 | 8.6 | 0.3 | 0.1 | 10.4 | 0.7 | 0.3 | 40.3 |
| 15 - 49 - DORCHESTER ST @ W 8TH ST | 0.2 | 0.1 | 3.4 | 0.2 | 0.7 | 2.6 | 0.1 | 0.6 | 3.7 | 0.1 | 0.4 | 5.2 | 0.4 | 0.7 | 5 | 0.3 | 0.6 | 8.2 | 0.8 | 1 | 10.2 | 2.1 | 4.1 | 38.3 |
| 16 - 50 - DORCHESTER ST @ OLD COLONY AV | 0.3 | 0.1 | 3.6 | 0.1 | 0.2 | 2.5 | 0.1 | 0.2 | 3.7 | 0.2 | 0.2 | 5.2 | 0.1 | 0.2 | 4.9 | 0.4 | 0.2 | 8.4 | 0.3 | 0.3 | 10.2 | 1.5 | 1.4 | 38.5 |
| 17 - 51 - DORCHESTER ST @ MIDDLE ST | 0.1 | 0.2 | 3.6 | 0 | 0.1 | 2.4 | 0 | 0.1 | 3.6 | 0.1 | 0.2 | 5.1 | 0 | 0.1 | 4.8 | 0 | 0.3 | 8.1 | 0.1 | 0.1 | 10.1 | 0.3 | 1.1 | 37.7 |
| 18 - 52 - DORCHESTER ST @ DORCHESTER AV | 0 | 0.6 | 2.9 | 0 | 0.5 | 2 | 0 | 0.4 | 3.2 | 0 | 1.1 | 4.1 | 0 | 0.8 | 4 | 0 | 3.3 | 4.9 | 0.1 | 3.5 | 6.6 | 0.1 | 10.2 | 27.7 |
| 19 - 13 - ANDREW STATION BUSWAY | 0.1 | 1.5 | 1.6 | 0.3 | 1.3 | 1.3 | 1.1 | 1.4 | 2.9 | 0.8 | 3.1 | 2.2 | 1 | 2.1 | 2.9 | 1.5 | 3.6 | 2.8 | 0.6 | 4.1 | 3.1 | 5.4 | 17.1 | 16.8 |
| 20 - 15201 - PREBLE ST @ ROGERS ST | 0 | 0 | 1.6 | 0 | 0.1 | 1.2 | 0 | 0 | 2.9 | 0 | 0 | 2.2 | 0 | 0 | 2.9 | 0 | 0.1 | 2.7 | 0.1 | 0 | 3.2 | 0.1 | 0.2 | 16.7 |
| 21 - 5201 - PREBLE ST @ OLD COLONY AVE | 0 | 0 | 1.6 | 0 | 0.1 | 1.3 | 0 | 0.2 | 2.7 | 0 | 0.1 | 2.1 | 0.1 | 0.2 | 2.7 | 0.3 | 0.3 | 2.7 | 0 | 0.3 | 2.9 | 0.4 | 1.2 | 16 |
| 22 - 35201 - OLD COLONY AVE @ MCDONOUGH WA | 0 | 0.1 | 1.5 | 0 | 0.9 | 0.9 | 0 | 2.6 | 0.1 | 0 | 0.3 | 1.9 | 0 | 2.7 | 0.1 | 0 | 0.3 | 2.4 | 0 | 2.8 | 0.1 | 0 | 9.7 | 7 |
| Maximum | | | 3.6 | | | 3.1 | | | 4.2 | | | 5.5 | | | 5.3 | | | 8.6 | | | 10.4 | | | 40.3 |
| Total | 4.1 | 2.9 | | 4.3 | 4.1 | | 6.8 | 6.3 | | 9.2 | 7.2 | | 8.2 | 7.6 | | 11.9 | 9.3 | | 13.4 | 12.7 | | 57.9 | 50.1 | |

Massachusetts Bay Transportation Authority
Route 5
Weekday - Outbound

(Urban Transportation Associates)

| | Trip (RouteVar)(Block) [Observations] | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 09:30 (5.0)(B060) [16] {FA17} | | | 10:30 (5.0)(B066) [70] {FA17} | | | 11:30 (5.0)(B024) [12] {FA17} | | | 12:30 (5.0)(B024) [59] {FA17} | | | 13:30 (5.0)(B295) [13] {FA17} | | | 14:30 (5.0)(B295) [33] {FA17} | | | Total | | |
| Seq - StopID - Stop Name | On | Off | Load | On | Off | Load | On | Off | Load | On | Off | Load | On | Off | Load | On | Off | Load | On | Off | Load |
| 1 - 35201 - OLD COLONY AVE @ MCDONOUGH WA | 0.6 | 0 | 2.1 | 1.1 | 0 | 2.3 | 0 | 0 | 0.2 | 0.2 | 0 | 2.1 | 0 | 0 | 0 | 0.4 | 0 | 3 | 2.3 | 0 | 9.7 |
| 2 - 5202 - OLD COLONY AVE @ GAVIN WAY | 2.2 | 0.1 | 4.2 | 2 | 0.3 | 4 | 0.4 | 0 | 0.8 | 1 | 1.1 | 2.2 | 1.6 | 0 | 1.6 | 1.6 | 1.1 | 3.6 | 8.8 | 2.6 | 16.4 |
| 3 - 5203 - OLD COLONY AVE @ MSGR O'CALLA | 0.2 | 0 | 4.4 | 0.2 | 0.1 | 4.1 | 0 | 0 | 0.8 | 0.4 | 0.2 | 2.4 | 0.4 | 0.1 | 1.9 | 0.9 | 0.5 | 4.2 | 2.1 | 0.9 | 17.8 |
| 4 - 121 - COLUMBIA RD @ JFK@UMASS STATI | 0.6 | 0.3 | 4.7 | 0.3 | 0.5 | 4 | 0.2 | 0 | 1 | 0.8 | 0.3 | 2.9 | 0.8 | 0.7 | 2.2 | 1.5 | 1.1 | 4.7 | 4.2 | 2.9 | 19.5 |
| 5 - 25203 - OLD COLONY AVE OPP GAVIN WAY | 0.3 | 0 | 4.9 | 0.6 | 0 | 4.5 | 0 | 0 | 1 | 0.2 | 0 | 3 | 0 | 0.1 | 2.1 | 0.5 | 0.3 | 4.6 | 1.6 | 0.4 | 20.1 |
| 6 - 25202 - PREBLE ST @ VINTON ST | 0.2 | 0 | 5.1 | 0.1 | 0 | 4.6 | 0.2 | 0.2 | 1 | 0.4 | 0.2 | 3.2 | 0.4 | 0.3 | 2.3 | 0.2 | 0 | 4.8 | 1.5 | 0.7 | 21 |
| 7 - 35202 - PREBLE ST @ DORCHESTER AVE | 0 | 0 | 5.1 | 0 | 0.5 | 4.1 | 0 | 0 | 1 | 0 | 0.2 | 3.1 | 0 | 0.1 | 2.2 | 0 | 0.1 | 4.8 | 0 | 0.9 | 20.3 |
| 8 - 13 - ANDREW STATION BUSWAY | 2 | 1.3 | 5.8 | 3.3 | 1 | 6.5 | 3.5 | 0.4 | 3.8 | 0.9 | 0.5 | 3.5 | 3 | 1 | 3.8 | 2.6 | 0.5 | 6.9 | 15.3 | 4.7 | 30.3 |
| 9 - 14 - DORCHESTER ST @ DORCHESTER AV | 0.3 | 0 | 6.1 | 0.5 | 0 | 6.9 | 0.6 | 0 | 3.9 | 0.3 | 0 | 3.7 | 0.6 | 0 | 4.5 | 0.5 | 0.2 | 7.2 | 2.8 | 0.2 | 32.3 |
| 10 - 15 - DORCHESTER ST @ VINTON ST | 0.1 | 0 | 6.1 | 0 | 0 | 7 | 0.1 | 0 | 4 | 0.1 | 0 | 3.8 | 0.1 | 0 | 4.5 | 0.1 | 0.1 | 7.2 | 0.5 | 0.1 | 32.6 |
| 11 - 16 - DORCHESTER ST @ OLD COLONY AV | 0.5 | 0.1 | 6.5 | 0.4 | 0.2 | 7.1 | 0.3 | 0.5 | 3 | 0.2 | 0.3 | 3.7 | 0.2 | 0.6 | 3.6 | 0.1 | 0.7 | 6.7 | 1.7 | 2.4 | 30.6 |
| 12 - 17 - DORCHESTER ST @ E 8TH ST | 0.6 | 0.4 | 6.8 | 0.6 | 0.1 | 7.6 | 0.1 | 0.5 | 2.5 | 0.3 | 0.2 | 3.8 | 0.8 | 0.4 | 4 | 0.9 | 0.8 | 6.8 | 3.3 | 2.4 | 31.5 |
| 13 - 18 - 180 DORCHESTER ST OPP W 7TH S | 0 | 0 | 6.8 | 0.1 | 0.1 | 7.6 | 0.2 | 0 | 2.5 | 0 | 0.2 | 3.6 | 0 | 0.1 | 3.9 | 0 | 0.8 | 6 | 0.3 | 1.2 | 30.4 |
| 14 - 19 - DORCHESTER ST @ OLD HARBOR ST | 0 | 0.6 | 6.1 | 0 | 0.4 | 7.3 | 0 | 0.8 | 2 | 0 | 0.2 | 3.4 | 0 | 0.1 | 3.5 | 0.1 | 0.7 | 5.4 | 0.1 | 2.8 | 27.7 |
| 15 - 20 - DORCHESTER ST @ E BROADWAY | 0.1 | 2 | 4.2 | 0.2 | 2.6 | 4.9 | 0.5 | 1.8 | 1.6 | 0.3 | 1.5 | 2.3 | 0.1 | 2 | 2.1 | 0.2 | 1.4 | 4.2 | 1.4 | 11.3 | 19.3 |
| 16 - 21 - E BROADWAY @ G ST | 0 | 0.4 | 3.8 | 0 | 0.3 | 4.6 | 0 | 0.1 | 1.5 | 0 | 0.1 | 2.3 | 0.1 | 0.4 | 2 | 0 | 0.2 | 4.1 | 0.1 | 1.5 | 18.3 |
| 17 - 22 - E BROADWAY @ H ST | 0 | 0.7 | 3.1 | 0 | 0.9 | 3.7 | 0 | 0.2 | 1.5 | 0 | 0.3 | 2 | 0 | 0.4 | 1.7 | 0 | 0.3 | 3.8 | 0 | 2.8 | 15.8 |
| 18 - 23 - E BROADWAY @ I ST | 0 | 0.2 | 2.9 | 0 | 0.4 | 3.3 | 0 | 0.3 | 1.4 | 0 | 0.1 | 1.9 | 0 | 0.4 | 1.4 | 0 | 1.4 | 2.4 | 0 | 2.8 | 13.3 |
| 19 - 24 - E BROADWAY @ K ST | 0 | 0.4 | 2.5 | 0 | 0.8 | 2.6 | 0 | 1.3 | 0.7 | 0.1 | 0.6 | 1.5 | 0.1 | 1.1 | 0.9 | 0.1 | 0.5 | 2.1 | 0.3 | 4.7 | 10.3 |
| 20 - 25 - E BROADWAY @ L ST | 0 | 0.6 | 1.9 | 0.1 | 0.3 | 2.4 | 0.4 | 0.2 | 0.8 | 0.2 | 0.3 | 1.5 | 0.1 | 0.1 | 0.9 | 0.1 | 0.1 | 2.1 | 0.9 | 1.6 | 9.6 |
| 21 - 26 - E BROADWAY @ M ST | 0 | 0 | 1.9 | 0 | 0 | 2.4 | 0 | 0 | 0.8 | 0 | 0 | 1.5 | 0 | 0 | 0.9 | 0 | 0.1 | 2 | 0 | 0.1 | 9.5 |
| 22 - 27 - E BROADWAY @ N ST | 0.1 | 0.4 | 1.6 | 0.8 | 0.8 | 2.5 | 0.5 | 0.6 | 0.8 | 0.5 | 0.5 | 1.5 | 0.6 | 0.4 | 1 | 0 | 0.1 | 1.9 | 2.5 | 2.8 | 9.3 |
| 23 - 28 - E BROADWAY @ O ST | 0 | 1.1 | 0.6 | 0.1 | 0.1 | 2.4 | 0.1 | 0.2 | 0.8 | 0.1 | 0.1 | 1.4 | 0.1 | 0.1 | 1 | 0 | 0.1 | 1.9 | 0.4 | 1.7 | 8.1 |
| 24 - 29 - E BROADWAY @ P ST | 0 | 0.1 | 0.5 | 0.3 | 0.2 | 2.5 | 0.5 | 0 | 1.3 | 0.3 | 0.1 | 1.6 | 0.4 | 0.3 | 1.2 | 0 | 0.6 | 1.3 | 1.5 | 1.3 | 8.4 |
| 25 - 30 - E BROADWAY @ FARRAGUT RD | 0 | 0.1 | 0.3 | 0 | 0.1 | 2.4 | 0 | 0 | 1 | 0 | 0 | 1.3 | 0 | 0.1 | 0.6 | 0 | 0.1 | 1.2 | 0 | 0.4 | 6.8 |
| 26 - 32 - FARRAGUT RD OPP E 2ND ST | 0 | 0 | 0.3 | 0 | 0.1 | 2.4 | 0 | 0 | 1 | 0 | 0.1 | 1.2 | 0 | 0 | 0.6 | 0 | 0.3 | 0.9 | 0 | 0.5 | 6.4 |
| 27 - 10031 - E 1ST ST @ P ST | 0 | 0 | 0.3 | 0.1 | 0 | 2.4 | 0 | 0 | 1 | 0 | 0.1 | 1.2 | 0 | 0 | 0.6 | 0 | 0 | 0.9 | 0.1 | 0.1 | 6.4 |
| 28 - 10032 - E 1ST ST OPP O ST | 0 | 0.1 | 0.2 | 0 | 0.1 | 2.2 | 0 | 0.2 | 0.8 | 0 | 0.1 | 1 | 0 | 0.1 | 0.6 | 0 | 0 | 0.9 | 0 | 0.6 | 5.7 |
| 29 - 33 - CITY POINT BUS TERMINAL | 0 | 0.2 | 0.1 | 0 | 1.9 | 0 | 0 | 1.4 | 0 | 0 | 1.6 | 0 | 0 | 1.1 | 0 | 0 | 0.7 | 0.2 | 0 | 6.9 | 0.3 |
| Maximum | | | 6.8 | | | 7.6 | | | 4 | | | 3.8 | | | 4.5 | | | 7.2 | | | 32.6 |
| Total | 7.8 | 9.1 | | 10.8 | 11.8 | | 7.6 | 8.7 | | 6.3 | 8.9 | | 9.4 | 10 | | 9.8 | 12.8 | | 51.7 | 61.3 | |

Massachusetts Bay Transportation Authority
Route 7
Weekday - Inbound

(Urban Transportation Associates)

| | 8:00AM | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 07:53 (7.5)(B026) [69] {FA17} | | | 07:55 (7.1)(B118) [62] {FA17} | | | 07:58 (7.5)(B032) [63] {FA17} | | | 08:02 (7.5)(B111) [64] {FA17} | | | 08:04 (7.1)(B028) [67] {FA17} | | |
| Seq - StopID - Stop Name | On | Off | Load | On | Off | Load | On | Off | Load | On | Off | Load | On | Off | Load |
| 1 - 33 - CITY POINT BUS TERMINAL | 0.4 | 0 | 0.4 | 1.5 | 0 | 1.5 | 1.6 | 0 | 1.6 | 0.5 | 0 | 0.5 | 1.7 | 0 | 1.7 |
| 2 - 10033 - E 1ST ST @ O ST | 3.1 | 0 | 3.4 | 2.6 | 0 | 4.1 | 2.6 | 0 | 4 | 3.3 | 0 | 3.8 | 3.5 | 0 | 4.5 |
| 3 - 34 - P ST @ E 2ND ST | 1.4 | 0 | 4.8 | 1.3 | 0 | 5.4 | 1.5 | 0 | 5.6 | 1.1 | 0 | 4.8 | 2.8 | 0 | 7.3 |
| 4 - 35 - P ST @ E BROADWAY | 8.9 | 0.1 | 13.6 | 7.6 | 0 | 13 | 8.3 | 0.2 | 13.8 | 8.8 | 0 | 13.6 | 13 | 0.1 | 20.2 |
| 5 - 895 - E BROADWAY @ N ST | 9.9 | 0 | 23.5 | 7.6 | 0 | 20.5 | 6.8 | 0.1 | 20.5 | 8.3 | 0 | 21.8 | 10.1 | 0 | 30.2 |
| 6 - 896 - E BROADWAY @ M ST | 6.3 | 0 | 29.7 | 5.2 | 0.1 | 25.6 | 4.9 | 0 | 25.4 | 6.1 | 0 | 27.7 | 6 | 0 | 36 |
| 7 - 886 - L ST @ BROADWAY | 14.5 | 0.3 | 43.9 | 16.7 | 0.2 | 42.1 | 14.1 | 0.2 | 39.3 | 14.3 | 0.2 | 41.8 | 14.2 | 0.1 | 50.1 |
| 8 - 884 - SUMMER ST @ E 1ST ST | 1.9 | 0 | 45.8 | 1.6 | 0.1 | 43.6 | 1.8 | 0.1 | 41 | 2.2 | 0.1 | 44 | 1.1 | 0 | 51.2 |
| 9 - 210 - SUMMER ST @ DRYDOCK AVE | 0.1 | 0.2 | 45.2 | 0.1 | 0.1 | 43.6 | 0.2 | 0.3 | 40.5 | 0.5 | 0.5 | 44 | 0.3 | 0.3 | 50.1 |
| 10 - 212 - SUMMER ST @ D ST | 0.3 | 0.6 | 44.9 | 0.2 | 0.3 | 43.5 | 0.2 | 0.7 | 40 | 0.3 | 0.9 | 43.4 | 0.4 | 0.9 | 49.7 |
| 11 - 890 - SUMMER ST @ WTC AVE | 1.5 | 3.1 | 43.3 | 1.1 | 2.2 | 42.4 | 1.1 | 2.5 | 38.5 | 1.2 | 2.8 | 41.8 | 1.4 | 2.7 | 48.4 |
| 12 - 891 - SUMMER ST OPP MELCHER ST | 0.9 | 3.2 | 41 | 0.7 | 2.2 | 40.9 | 0.5 | 2.8 | 36.3 | 0.9 | 3.5 | 39.2 | 1.2 | 3.7 | 45.8 |
| 13 - 892 - SUMMER ST @ DORCHESTER AVE | 0.1 | 39.6 | 1.5 | 0.9 | 21 | 20.9 | 0.1 | 35.1 | 1.3 | 0.1 | 35.5 | 3.6 | 1.3 | 21.3 | 25.8 |
| 14 - 6535 - FRANKLIN ST @ DEVONSHIRE ST | . | . | . | 0.3 | 18.6 | 2.6 | . | . | . | . | . | . | 0.6 | 23.4 | 3 |
| 15 - 16535 - OTIS ST @ SUMMER ST | . | . | . | 0 | 2.3 | 0.3 | . | . | . | . | . | . | 0 | 2.4 | 0.6 |
| 16 - 26551 - CONGRESS ST @ ATLANTIC AVE | 0 | 1.4 | 0 | . | . | . | 0 | 1.1 | 0.1 | 0 | 3.6 | 0 | . | . | . |
| Maximum | | | 45.8 | | | 43.6 | | | 41 | | | 44 | | | 51.2 |
| Total | 49.3 | 48.5 | | 47.4 | 47.1 | | 43.7 | 43.1 | | 47.6 | 47.1 | | 57.6 | 54.9 | |

| | 08:07 (7.5)(B072) [54] {FA17} | | | 08:11 (7.5)(B120) [67] {FA17} | | | 08:13 (7.1)(B119) [65] {FA17} | | | 08:17 (7.5)(B033) [62] {FA17} | | | 08:20 (7.1)(B030) [55] {FA17} | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Seq - StopID - Stop Name | On | Off | Load | On | Off | Load | On | Off | Load | On | Off | Load | On | Off | Load |
| 1 - 33 - CITY POINT BUS TERMINAL | 0.6 | 0 | 0.6 | 0.4 | 0 | 0.6 | 0.4 | 0 | 0.4 | 1.1 | 0 | 1.1 | 8.7 | 0 | 8.7 |
| 2 - 10033 - E 1ST ST @ O ST | 2.4 | 0 | 3 | 2 | 0 | 2.2 | 2.4 | 0 | 2.8 | 2.9 | 0 | 3.2 | 3.1 | 0 | 3.4 |
| 3 - 34 - P ST @ E 2ND ST | 1.3 | 0 | 4.3 | 0.9 | 0 | 3 | 2.2 | 0 | 5 | 1.8 | 0 | 5 | 2.7 | 0 | 6.2 |
| 4 - 35 - P ST @ E BROADWAY | 6.3 | 0 | 10.6 | 6.3 | 0.1 | 9.2 | 9.8 | 0.1 | 14.7 | 9.6 | 0.1 | 14.4 | 9.9 | 0.2 | 15.5 |
| 5 - 895 - E BROADWAY @ N ST | 7.1 | 0.1 | 17.6 | 6.8 | 0.1 | 16 | 9 | 0.1 | 23.8 | 9 | 0.1 | 23.4 | 12.6 | 0.2 | 27.7 |
| 6 - 896 - E BROADWAY @ M ST | 4.8 | 0 | 22.3 | 4.7 | 0 | 20.6 | 4.4 | 0 | 28.2 | 4.7 | 0 | 28.6 | 5.4 | 0 | 32.4 |
| 7 - 886 - L ST @ BROADWAY | 17 | 0.1 | 39.2 | 14.5 | 0.2 | 35 | 14.6 | 0.2 | 42.7 | 13.9 | 0 | 41.9 | 15.5 | 0.1 | 43.8 |
| 8 - 884 - SUMMER ST @ E 1ST ST | 2.7 | 0 | 41.9 | 2.7 | 0.1 | 37.7 | 2 | 0 | 44.7 | 1.2 | 0.1 | 43 | 1.6 | 0 | 45.6 |
| 9 - 210 - SUMMER ST @ DRYDOCK AVE | 0.4 | 0.2 | 42 | 0.2 | 0.1 | 37.8 | 0.2 | 0.5 | 44.4 | 0.3 | 0.5 | 42.8 | 0.4 | 0.5 | 44.7 |
| 10 - 212 - SUMMER ST @ D ST | 0.3 | 0.7 | 41.6 | 0.3 | 0.7 | 37.4 | 0.2 | 0.8 | 43.8 | 0.5 | 0.8 | 42.4 | 0.5 | 0.7 | 44.5 |
| 11 - 890 - SUMMER ST @ WTC AVE | 0.8 | 2.7 | 39.8 | 1.1 | 2.8 | 35.7 | 1.3 | 2.3 | 42.8 | 1.1 | 2.6 | 41 | 1.2 | 2.8 | 42.9 |
| 12 - 891 - SUMMER ST OPP MELCHER ST | 0.9 | 4.4 | 36.3 | 0.7 | 4.9 | 31.5 | 1.2 | 4.4 | 39.5 | 1.2 | 5.5 | 36.6 | 2 | 4.6 | 40.3 |
| 13 - 892 - SUMMER ST @ DORCHESTER AVE | 0.2 | 34.6 | 1.5 | 0.1 | 30.9 | 0.8 | 0.8 | 22.4 | 18 | 0.1 | 35.6 | 1.1 | 1.4 | 24.5 | 17.2 |
| 14 - 6535 - FRANKLIN ST @ DEVONSHIRE ST | . | . | . | . | . | . | 0.3 | 15.8 | 2.5 | . | . | . | 0.3 | 14.5 | 3 |
| 15 - 16535 - OTIS ST @ SUMMER ST | . | . | . | . | . | . | 0 | 2.2 | 0.3 | . | . | . | 0 | 2.7 | 0.2 |
| 16 - 26551 - CONGRESS ST @ ATLANTIC AVE | 0 | 1.4 | 0.1 | 0 | 0.7 | 0.1 | . | . | . | 0 | 1 | 0.1 | . | . | . |
| Maximum | | | 42 | | | 37.8 | | | 44.7 | | | 43 | | | 45.6 |
| Total | 44.8 | 44.2 | | 40.7 | 40.6 | | 48.8 | 48.8 | | 47.4 | 46.3 | | 65.3 | 50.8 | |

| | 08:24 (7.5)(B025) [54] {FA17} | | | 08:27 (7.1)(B026) [67] {FA17} | | | 08:31 (7.5)(B032) [57] {FA17} | | | 08:34 (7.1)(B111) [66] {FA17} | | | 08:38 (7.5)(B112) [59] {FA17} | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Seq - StopID - Stop Name | On | Off | Load | On | Off | Load | On | Off | Load | On | Off | Load | On | Off | Load |
| 1 - 33 - CITY POINT BUS TERMINAL | 0.4 | 0 | 0.4 | 0.4 | 0 | 0.4 | 1.6 | 0 | 1.7 | 1.1 | 0 | 1.1 | 0.5 | 0 | 0.5 |
| 2 - 10033 - E 1ST ST @ O ST | 3.2 | 0 | 3.6 | 2.4 | 0 | 2.8 | 2.7 | 0 | 3.1 | 2.1 | 0 | 2.8 | 2.2 | 0 | 2.7 |
| 3 - 34 - P ST @ E 2ND ST | 2.3 | 0 | 5.9 | 1.4 | 0 | 4.2 | 1.5 | 0 | 4.3 | 1.5 | 0 | 4.3 | 0.9 | 0 | 3.6 |
| 4 - 35 - P ST @ E BROADWAY | 8.7 | 0.1 | 14.4 | 6.6 | 0.1 | 10.7 | 8.1 | 0 | 12.4 | 7.2 | 0 | 11.5 | 6.2 | 0 | 9.8 |
| 5 - 895 - E BROADWAY @ N ST | 8.9 | 0.1 | 23.1 | 8 | 0 | 18.7 | 9.3 | 0 | 21.6 | 6.8 | 0 | 18.2 | 8.6 | 0 | 18.4 |
| 6 - 896 - E BROADWAY @ M ST | 5 | 0 | 28.1 | 5.8 | 0.1 | 24.5 | 4.7 | 0.1 | 26.2 | 3.3 | 0 | 21.4 | 3.7 | 0.1 | 22.1 |
| 7 - 886 - L ST @ BROADWAY | 13.1 | 0.1 | 41.1 | 16.8 | 0.1 | 41.2 | 12 | 0.1 | 38.1 | 14.6 | 0.1 | 35.7 | 12.7 | 0.2 | 34.6 |
| 8 - 884 - SUMMER ST @ E 1ST ST | 2.2 | 0.1 | 43.3 | 1.7 | 0.1 | 42.8 | 1.4 | 0 | 39.5 | 2.6 | 0.1 | 38.2 | 1.6 | 0 | 36.2 |
| 9 - 210 - SUMMER ST @ DRYDOCK AVE | 0.1 | 0.6 | 42.8 | 0.4 | 0.4 | 42.7 | 0.3 | 0.4 | 39.3 | 0.4 | 0.4 | 38.2 | 0.1 | 0.4 | 35.9 |
| 10 - 212 - SUMMER ST @ D ST | 0.4 | 0.6 | 42.6 | 0.2 | 0.4 | 42.6 | 0.2 | 0.6 | 38.9 | 0.3 | 0.7 | 37.8 | 0.2 | 0.6 | 35.5 |
| 11 - 890 - SUMMER ST @ WTC AVE | 1.1 | 3 | 40.7 | 1 | 2.4 | 41.2 | 0.6 | 2.4 | 37.1 | 0.7 | 1.9 | 36.6 | 0.7 | 2.5 | 33.8 |
| 12 - 891 - SUMMER ST OPP MELCHER ST | 0.9 | 4.3 | 37.3 | 1 | 4 | 38.1 | 0.8 | 5 | 32.9 | 0.5 | 3.8 | 33.2 | 0.6 | 4.7 | 29.7 |
| 13 - 892 - SUMMER ST @ DORCHESTER AVE | 0.1 | 36.1 | 0.9 | 0.7 | 21.6 | 17.2 | 0.1 | 32.3 | 0.7 | 0.8 | 19.7 | 14.3 | 0 | 28.6 | 1.1 |
| 14 - 6535 - FRANKLIN ST @ DEVONSHIRE ST | . | . | . | 0.5 | 15.3 | 2.4 | . | . | . | 0.2 | 12.8 | 1.8 | . | . | . |
| 15 - 16535 - OTIS ST @ SUMMER ST | . | . | . | 0 | 2 | 0.5 | . | . | . | 0 | 1.6 | 0.2 | . | . | . |
| 16 - 26551 - CONGRESS ST @ ATLANTIC AVE | 0 | 0.9 | 0.1 | . | . | . | 0 | 0.7 | 0.1 | . | . | . | 0 | 1.1 | 0 |
| Maximum | | | 43.3 | | | 42.8 | | | 39.5 | | | 38.2 | | | 36.2 |
| Total | 46.4 | 45.9 | | 46.9 | 46.5 | | 43.3 | 41.6 | | 42.1 | 41.1 | | 38 | 38.2 | |

| | | | | | | | | | | 8:58AM | | | 5:04PM | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 08:41 (7.1)(B072) [50] {FA17} | | | 08:45 (7.5)(B118) [40] {FA17} | | | 08:48 (7.1)(B099) [64] {FA17} | | | 08:52 (7.5)(B115) [50] {FA17} | | | 17:03 (7.2)(B034) [61] {FA17} | | |
| Seq - StopID - Stop Name | On | Off | Load | On | Off | Load | On | Off | Load | On | Off | Load | On | Off | Load |
| 1 - 33 - CITY POINT BUS TERMINAL | 1.3 | 0 | 1.3 | 0.9 | 0 | 0.9 | 1.2 | 0 | 1.8 | 1.8 | 0 | 1.8 | 2.1 | 0 | 2.5 |
| 2 - 10033 - E 1ST ST @ O ST | 2.2 | 0 | 3 | 1.1 | 0 | 2 | 1.2 | 0 | 2.4 | 0.9 | 0 | 2.7 | . | . | . |
| 3 - 34 - P ST @ E 2ND ST | 0.9 | 0 | 3.8 | 0.6 | 0.1 | 2.6 | 0.7 | 0 | 3 | 0.6 | 0 | 3.3 | . | . | . |
| 4 - 35 - P ST @ E BROADWAY | 8.7 | 0 | 12.5 | 4.8 | 0 | 7.3 | 4.8 | 0 | 8 | 3.8 | 0 | 7.2 | . | . | . |
| 5 - 895 - E BROADWAY @ N ST | 7.3 | 0 | 19.7 | 4.7 | 0.1 | 11.9 | 4 | 0 | 12 | 4.1 | 0 | 11.2 | . | . | . |
| 6 - 896 - E BROADWAY @ M ST | 3.7 | 0.1 | 23.4 | 1.5 | 0 | 13.4 | 2.7 | 0.1 | 14.5 | 1.8 | 0 | 13 | . | . | . |
| 7 - 886 - L ST @ BROADWAY | 13.1 | 0.2 | 36.3 | 9.4 | 0.2 | 22.6 | 9.3 | 0.1 | 23.8 | 8.1 | 0.1 | 21 | . | . | . |
| 8 - 884 - SUMMER ST @ E 1ST ST | 1.5 | 0 | 37.7 | 2.2 | 0 | 24.8 | 1.7 | 0 | 25.5 | 1.2 | 0 | 22.2 | 4.7 | 0 | 7.2 |
| 9 - 210 - SUMMER ST @ DRYDOCK AVE | 0.1 | 0.2 | 37 | 0.1 | 0.2 | 24.6 | 0 | 0.1 | 25.5 | 0.2 | 0.2 | 22.1 | 1.6 | 0 | 8.9 |
| 10 - 212 - SUMMER ST @ D ST | 0.4 | 1.2 | 36.1 | 0.3 | 1 | 24 | 0.2 | 0.5 | 25.2 | 0.3 | 0.8 | 21.6 | 2.3 | 0.1 | 11.1 |
| 11 - 890 - SUMMER ST @ WTC AVE | 0.5 | 1.9 | 34.7 | 0.2 | 2.1 | 22.1 | 0.2 | 1 | 24.5 | 0.3 | 1.5 | 20.4 | 4.7 | 0.2 | 15.6 |
| 12 - 891 - SUMMER ST OPP MELCHER ST | 0.8 | 4.8 | 30.7 | 0.1 | 3.5 | 18.7 | 0.2 | 3.5 | 21.1 | 0.1 | 2.9 | 17.6 | 0.3 | 0.7 | 15.2 |
| 13 - 892 - SUMMER ST @ DORCHESTER AVE | 0.4 | 18.1 | 13 | 0 | 16.9 | 1.8 | 0.2 | 12.6 | 8.7 | 0 | 16.7 | 0.9 | 0.1 | 12.8 | 2.9 |
| 14 - 6535 - FRANKLIN ST @ DEVONSHIRE ST | 0.3 | 11.8 | 1.6 | . | . | . | 0.1 | 7.8 | 0.9 | . | . | . | 14 | 9.5 | 14.6 |
| 15 - 16535 - OTIS ST @ SUMMER ST | 0 | 1.3 | 0.3 | . | . | . | 0 | 0.9 | 0 | . | . | . | 0 | 5.7 | 8.9 |
| 16 - 26551 - CONGRESS ST @ ATLANTIC AVE | . | . | . | 0 | 1.8 | 0 | . | . | . | 0 | 0.9 | 0 | . | . | . |
| Maximum | | | 37.7 | | | 24.8 | | | 25.5 | | | 22.2 | | | 15.6 |
| Total | 41.2 | 39.6 | | 25.9 | 25.9 | | 26.5 | 26.6 | | 23.2 | 23.1 | | 29.8 | 29 | |

| | 17:11 (7.2)(B035) [55] {FA17} | | | 17:18 (7.2)(B036) [47] {FA17} | | | 17:24 (7.2)(B037) [61] {FA17} | | | 17:27 (7.2)(B096) [51] {FA17} | | | 17:29 (7.2)(B038) [64] {FA17} | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Seq - StopID - Stop Name | On | Off | Load | On | Off | Load | On | Off | Load | On | Off | Load | On | Off | Load |
| 1 - 33 - CITY POINT BUS TERMINAL | 2.3 | 0 | 2.5 | 1.5 | 0 | 1.7 | 1.1 | 0 | 1.2 | 2.4 | 0 | 2.5 | 1.4 | 0 | 1.5 |
| 2 - 10033 - E 1ST ST @ O ST | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 3 - 34 - P ST @ E 2ND ST | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 4 - 35 - P ST @ E BROADWAY | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 5 - 895 - E BROADWAY @ N ST | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 6 - 896 - E BROADWAY @ M ST | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 7 - 886 - L ST @ BROADWAY | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 8 - 884 - SUMMER ST @ E 1ST ST | 3.9 | 0 | 6.4 | 2.4 | 0 | 4.1 | 1.9 | 0 | 3.1 | 1.8 | 0 | 4.2 | 1.9 | 0 | 3.3 |
| 9 - 210 - SUMMER ST @ DRYDOCK AVE | 1.5 | 0.1 | 7.9 | 0.7 | 0.1 | 4.7 | 0.4 | 0 | 3.5 | 0.7 | 0 | 4.9 | 0.7 | 0 | 4 |
| 10 - 212 - SUMMER ST @ D ST | 1.9 | 0 | 9.7 | 1.3 | 0.1 | 5.8 | 0.6 | 0 | 4.1 | 0.5 | 0.1 | 5.3 | 0.7 | 0.1 | 4.6 |
| 11 - 890 - SUMMER ST @ WTC AVE | 3.4 | 0.2 | 12.9 | 2.2 | 0.1 | 7.9 | 1.9 | 0.2 | 5.8 | 1.8 | 0 | 7.1 | 2 | 0.1 | 6.5 |
| 12 - 891 - SUMMER ST OPP MELCHER ST | 0.2 | 0.3 | 12.9 | 0.3 | 0.5 | 7.7 | 0.1 | 0.1 | 5.8 | 0.4 | 0.4 | 7 | 0.1 | 0.1 | 6.5 |
| 13 - 892 - SUMMER ST @ DORCHESTER AVE | 0.1 | 10.3 | 2.9 | 0.1 | 6.3 | 1.7 | 0.1 | 4.3 | 1.7 | 0.1 | 4.9 | 2.2 | 0 | 4.1 | 2.4 |
| 14 - 6535 - FRANKLIN ST @ DEVONSHIRE ST | 15.1 | 10.8 | 16 | 10.2 | 5.3 | 10.9 | 6.2 | 3.2 | 7.1 | 8.3 | 4.5 | 9.6 | 4.5 | 2.5 | 5.8 |
| 15 - 16535 - OTIS ST @ SUMMER ST | 0 | 5.4 | 10.6 | 0 | 4.4 | 6.5 | 0 | 3.1 | 4 | 0 | 5.8 | 3.8 | 0 | 4.2 | 1.6 |
| 16 - 26551 - CONGRESS ST @ ATLANTIC AVE | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| Maximum | | | 16 | | | 10.9 | | | 7.1 | | | 9.6 | | | 6.5 |
| Total | 28.4 | 27.1 | | 18.7 | 16.8 | | 12.3 | 10.9 | | 16 | 15.7 | | 11.3 | 11.1 | |

| | | | | | | | | | | | | | 5:58PM | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 17:35 (7.2)(B039) [63] {FA17} | | | 17:40 (7.2)(B040) [68] {FA17} | | | 17:46 (7.2)(B041) [62] {FA17} | | | 17:51 (7.2)(B034) [57] {FA17} | | | 17:57 (7.2)(B035) [59] {FA17} | | |
| Seq - StopID - Stop Name | On | Off | Load | On | Off | Load | On | Off | Load | On | Off | Load | On | Off | Load |
| 1 - 33 - CITY POINT BUS TERMINAL | 1.4 | 0 | 1.5 | 1.5 | 0 | 1.6 | 1.8 | 0 | 1.9 | 1.8 | 0 | 1.8 | 1.6 | 0 | 1.6 |
| 2 - 10033 - E 1ST ST @ O ST | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 3 - 34 - P ST @ E 2ND ST | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 4 - 35 - P ST @ E BROADWAY | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 5 - 895 - E BROADWAY @ N ST | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 6 - 896 - E BROADWAY @ M ST | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 7 - 886 - L ST @ BROADWAY | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 8 - 884 - SUMMER ST @ E 1ST ST | 1.1 | 0 | 2.5 | 2.4 | 0.2 | 3.9 | 2.2 | 0 | 4.1 | 1.7 | 0 | 3.5 | 1.6 | 0 | 3.3 |
| 9 - 210 - SUMMER ST @ DRYDOCK AVE | 0.5 | 0.1 | 3 | 0.9 | 0.1 | 4.7 | 0.7 | 0.4 | 4.5 | 0.4 | 0.1 | 3.8 | 0.7 | 0.1 | 3.8 |
| 10 - 212 - SUMMER ST @ D ST | 0.5 | 0.1 | 3.4 | 0.9 | 0.1 | 5.5 | 0.6 | 0.1 | 5 | 0.7 | 0.1 | 4.4 | 0.5 | 0 | 4.3 |
| 11 - 890 - SUMMER ST @ WTC AVE | 1.4 | 0.1 | 4.7 | 1.9 | 0.1 | 7.4 | 1 | 0 | 6 | 1.6 | 0.1 | 5.9 | 1.2 | 0.2 | 5.3 |
| 12 - 891 - SUMMER ST OPP MELCHER ST | 0.1 | 0.1 | 4.7 | 0.3 | 0.4 | 7.3 | 0.2 | 0.5 | 5.6 | 0.1 | 0.2 | 5.8 | 0.1 | 0.3 | 5 |
| 13 - 892 - SUMMER ST @ DORCHESTER AVE | 0.1 | 2.5 | 2.3 | 0.1 | 5.1 | 2.4 | 0 | 3.6 | 2.2 | 0.1 | 3.7 | 2.4 | 0.1 | 3.8 | 1.5 |
| 14 - 6535 - FRANKLIN ST @ DEVONSHIRE ST | 0.3 | 1.2 | 1.4 | 10 | 4.1 | 10.9 | 6.2 | 3.1 | 7.3 | 6.7 | 2.5 | 8 | 6.3 | 3 | 6.8 |
| 15 - 16535 - OTIS ST @ SUMMER ST | 0 | 1.4 | 0 | 0 | 6 | 4.9 | 0 | 3.1 | 4.2 | 0 | 6.1 | 1.9 | 0 | 3.8 | 3 |
| 16 - 26551 - CONGRESS ST @ ATLANTIC AVE | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| Maximum | | | 4.7 | | | 10.9 | | | 7.3 | | | 8 | | | 6.8 |
| Total | 5.4 | 5.5 | | 18 | 16.1 | | 12.7 | 10.8 | | 13.1 | 12.8 | | 12.1 | 11.2 | |

714.2 34.9 0.8

20.3 25.6 0.2

Massachusetts Bay Transportation Authority
Route 7
Weekday - Outbound

(Urban Transportation Associates)

| Seq - StopID - Stop Name | 8:02AM 07:51 (7.7)(B121) [64] {FA17} On | Off | Load | 07:56 (7.2)(B031) [60] {FA17} On | Off | Load | 08:03 (7.7)(B123) [72] {FA17} On | Off | Load | 08:05 (7.2)(B025) [64] {FA17} On | Off | Load | 08:14 (7.2)(B027) [66] {FA17} On | Off | Load | 08:16 (7.7)(B112) [61] {FA17} On | Off | Load |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - 16535 - OTIS ST @ SUMMER ST | . | . | . | 4.4 | 0 | 4.6 | . | . | . | 4.9 | 0 | 5.2 | 4 | 0 | 4.4 | . | . | . |
| 2 - 16538 - BEDFORD ST @ CHAUNCY ST | 1 | 0 | 1.1 | . | . | . | 0.9 | 0 | 1.2 | . | . | . | . | . | . | 0.1 | 0 | 0.3 |
| 3 - 6564 - SUMMER ST @ SOUTH STATION - R | 5.7 | 0.1 | 6.7 | 7.4 | 0.1 | 12 | 6.1 | 0.1 | 6.9 | 6.8 | 0 | 12 | 7.9 | 0 | 11.8 | 9 | 0.2 | 9.2 |
| 4 - 888 - SUMMER ST @ MELCHER ST | 0.3 | 0.5 | 6.5 | 0.1 | 0.9 | 11.2 | 0.1 | 0.6 | 6.3 | 0.2 | 1 | 11.2 | 0.3 | 1 | 11.2 | 0.3 | 0.9 | 8.6 |
| 5 - 889 - SUMMER ST OPP WTC AVE | 0 | 1.9 | 4.6 | 0.1 | 3.7 | 7.6 | 0.1 | 2.4 | 4.1 | 0 | 4.2 | 7 | 0.1 | 4.5 | 6.7 | 0 | 3.4 | 5.2 |
| 6 - 244 - SUMMER ST @ E ST | 0 | 1.5 | 3 | 0 | 2.1 | 5.5 | 0 | 0.9 | 3.3 | 0 | 1.3 | 5.6 | 0 | 1 | 5.7 | 0 | 0.5 | 4.8 |
| 7 - 246 - SUMMER ST @ PAPPAS WAY | 0 | 0.2 | 2.8 | 0 | 1 | 4.5 | 0 | 0.4 | 2.8 | 0 | 0.6 | 5 | 0 | 0.5 | 5.2 | 0 | 0.6 | 4.2 |
| 8 - 208 - SUMMER ST @ POWERHOUSE ST | 0 | 1 | 1.8 | 0.1 | 1.7 | 2.9 | 0.1 | 1.1 | 1.8 | 0 | 2.4 | 2.6 | 0.1 | 2.4 | 2.8 | 0.1 | 1.9 | 2.5 |
| 9 - 885 - SUMMER ST @ E 1ST ST | 0 | 0.9 | 1 | 0 | 1.5 | 1.4 | 0 | 0.7 | 1.2 | 0 | 2 | 0.6 | 0 | 2.3 | 1 | 0 | 1.4 | 1.1 |
| 10 - 880 - L ST @ E 2ND ST | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 11 - 879 - L ST @ BROADWAY | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 12 - 26 - E BROADWAY @ M ST | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 13 - 27 - E BROADWAY @ N ST | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 14 - 28 - E BROADWAY @ O ST | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 15 - 29 - E BROADWAY @ P ST | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 16 - 30 - E BROADWAY @ FARRAGUT RD | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 17 - 32 - FARRAGUT RD OPP E 2ND ST | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 18 - 10031 - E 1ST ST @ P ST | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 19 - 10032 - E 1ST ST OPP O ST | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 20 - 8851 - EAST 1ST ST @ M ST | 0 | 0 | 1 | 0 | 0.2 | 1.2 | 0 | 0 | 1.2 | 0 | 0.2 | 0.5 | 0 | 0 | 0.9 | 0 | 0.2 | 0.9 |
| 21 - 33 - CITY POINT BUS TERMINAL | 0 | 0.8 | 0.1 | 0 | 1.2 | 0 | 0 | 1.6 | 0 | 0 | 0.5 | 0 | 0 | 1.3 | 0 | 0 | 0.7 | 0.2 |
| Maximum | | | 6.7 | | | 12 | | | 6.9 | | | 12 | | | 11.8 | | | 9.2 |
| Total | 7 | 6.9 | | 12.1 | 12.4 | | 7.3 | 7.8 | | 11.9 | 12.2 | | 12.4 | 13 | | 9.5 | 9.8 | |

| Seq - StopID - Stop Name | 08:23 (7.2)(B118) [63] {FA17} On | Off | Load | 08:31 (7.7)(B115) [61] {FA17} On | Off | Load | 08:32 (7.2)(B028) [67] {FA17} On | Off | Load | 08:41 (7.2)(B119) [65] {FA17} On | Off | Load | 8:58AM 08:46 (7.7)(B116) [64] {FA17} On | Off | Load |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - 16535 - OTIS ST @ SUMMER ST | 3.4 | 0 | 3.7 | . | . | . | 5.2 | 0 | 5.9 | 4.6 | 0 | 4.9 | . | . | . |
| 2 - 16538 - BEDFORD ST @ CHAUNCY ST | . | . | . | 0.6 | 0 | 0.7 | . | . | . | . | . | . | 0.4 | 0 | 0.5 |
| 3 - 6564 - SUMMER ST @ SOUTH STATION - R | 9.9 | 0.1 | 13.5 | 8.3 | 0.2 | 8.9 | 12.6 | 0.1 | 17.8 | 10.8 | 0.1 | 15.4 | 6.4 | 0.1 | 6.9 |
| 4 - 888 - SUMMER ST @ MELCHER ST | 0.1 | 1.2 | 12.5 | 0.3 | 0.5 | 8.7 | 0.2 | 1.1 | 16.9 | 0.5 | 1.5 | 14.4 | 0.1 | 0.4 | 6.6 |
| 5 - 889 - SUMMER ST OPP WTC AVE | 0.1 | 5.2 | 7.4 | 0.1 | 3.3 | 5.5 | 0.1 | 7 | 9.9 | 0.1 | 6.7 | 7.8 | 0 | 2.6 | 4 |
| 6 - 244 - SUMMER ST @ E ST | 0 | 0.7 | 6.7 | 0 | 0.6 | 4.8 | 0 | 1.1 | 8.9 | 0 | 0.8 | 7.1 | 0 | 0.3 | 3.7 |
| 7 - 246 - SUMMER ST @ PAPPAS WAY | 0 | 1.1 | 5.7 | 0 | 0.9 | 3.9 | 0 | 2.3 | 6.6 | 0 | 2.3 | 4.8 | 0 | 1 | 2.7 |
| 8 - 208 - SUMMER ST @ POWERHOUSE ST | 0.1 | 2.5 | 3.2 | 0.3 | 1.7 | 2.5 | 0.1 | 4.1 | 2.7 | 0 | 3 | 2 | 0 | 1.2 | 1.5 |
| 9 - 885 - SUMMER ST @ E 1ST ST | 0 | 2.1 | 1.1 | 0 | 0.7 | 1.8 | 0 | 2.4 | 0.9 | 0 | 1.6 | 0.8 | 0 | 0.8 | 0.7 |
| 10 - 880 - L ST @ E 2ND ST | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 11 - 879 - L ST @ BROADWAY | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 12 - 26 - E BROADWAY @ M ST | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 13 - 27 - E BROADWAY @ N ST | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 14 - 28 - E BROADWAY @ O ST | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 15 - 29 - E BROADWAY @ P ST | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 16 - 30 - E BROADWAY @ FARRAGUT RD | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 17 - 32 - FARRAGUT RD OPP E 2ND ST | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 18 - 10031 - E 1ST ST @ P ST | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 19 - 10032 - E 1ST ST OPP O ST | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 20 - 8851 - EAST 1ST ST @ M ST | 0 | 0 | 1.1 | 0 | 0 | 1.8 | 0 | 0.1 | 0.8 | 0 | 0.1 | 0.8 | 0 | 0 | 0.7 |
| 21 - 33 - CITY POINT BUS TERMINAL | 0 | 1.1 | 0 | 0 | 1.6 | 0.2 | 0 | 1.4 | 0 | 0 | 1.1 | 0 | 0 | 0.7 | 0 |
| Maximum | | | 13.5 | | | 8.9 | | | 17.8 | | | 15.4 | | | 6.9 |
| Total | 13.6 | 14 | | 9.6 | 9.5 | | 18.2 | 19.6 | | 16 | 17.2 | | 6.9 | 7.1 | |

| Seq - StopID - Stop Name | 5:00PM 16:48 (7.1)(B035) [55] {FA17} On | Off | Load | 16:55 (7.1)(B036) [38] {FA17} On | Off | Load | 17:01 (7.1)(B037) [63] {FA17} On | Off | Load | 17:06 (7.1)(B038) [61] {FA17} On | Off | Load | 17:12 (7.1)(B039) [70] {FA17} On | Off | Load | 17:17 (7.1)(B040) [67] {FA17} On | Off | Load |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - 16535 - OTIS ST @ SUMMER ST | 20 | 0 | 20.4 | 10.9 | 0 | 10.9 | 24.4 | 0 | 25.7 | 19.3 | 0 | 20.5 | 29.8 | 0 | 29.9 | 27.9 | 0 | 28.6 |
| 2 - 16538 - BEDFORD ST @ CHAUNCY ST | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 3 - 6564 - SUMMER ST @ SOUTH STATION - R | 15.2 | 0.5 | 35.1 | 14.7 | 0.2 | 26.4 | 12.1 | 0.3 | 37.5 | 17 | 0.2 | 37.1 | 14.8 | 0.3 | 44.4 | 14 | 0.2 | 42.4 |
| 4 - 888 - SUMMER ST @ MELCHER ST | 2.7 | 0.6 | 37.1 | 5.4 | 0.2 | 29.5 | 2.7 | 0.3 | 40.5 | 3.3 | 0.4 | 40 | 2.2 | 0.4 | 46.2 | 2.2 | 0.2 | 44.6 |
| 5 - 889 - SUMMER ST OPP WTC AVE | 1.9 | 1.1 | 37.9 | 2.6 | 0.8 | 31.4 | 1.6 | 0.8 | 41.4 | 2 | 0.8 | 41.2 | 1.8 | 0.5 | 47.5 | 1.8 | 0.7 | 45.5 |
| 6 - 244 - SUMMER ST @ E ST | 0.1 | 0.1 | 37.9 | 0 | 0.1 | 31.3 | 0 | 0.1 | 41.3 | 0.2 | 0.3 | 41.1 | 0.4 | 0.6 | 47.3 | 0.3 | 0.3 | 45.5 |
| 7 - 246 - SUMMER ST @ PAPPAS WAY | 0.4 | 0.6 | 37.7 | 0.9 | 0.7 | 31.6 | 0.4 | 0.7 | 41 | 0.2 | 0.4 | 40.9 | 0.5 | 0.5 | 47.2 | 0.3 | 0.4 | 45.4 |
| 8 - 208 - SUMMER ST @ POWERHOUSE ST | 0.1 | 0.4 | 37.5 | 0.3 | 0.2 | 31.7 | 0.3 | 0.5 | 40.8 | 0.3 | 0.5 | 40.7 | 0.3 | 0.7 | 46.9 | 0.1 | 0.1 | 45.3 |
| 9 - 885 - SUMMER ST @ E 1ST ST | 0.3 | 2.7 | 35.1 | 0.7 | 2.2 | 30.2 | 0.9 | 3.3 | 38.5 | 1.3 | 3.6 | 38.4 | 1.9 | 4.2 | 44.6 | 1.2 | 3.6 | 42.9 |
| 10 - 880 - L ST @ E 2ND ST | 0.4 | 3.5 | 32 | 1.5 | 4.2 | 27.6 | 0.7 | 3.1 | 36.1 | 1.9 | 3.5 | 36.8 | 0.9 | 2.8 | 42.7 | 0.9 | 3.6 | 40.2 |
| 11 - 879 - L ST @ BROADWAY | 0.6 | 16.2 | 16.3 | 1.4 | 15.1 | 14.1 | 1.3 | 19.2 | 18.1 | 2.1 | 20 | 18.9 | 1.6 | 24 | 20.3 | 1.5 | 22.2 | 19.5 |
| 12 - 26 - E BROADWAY @ M ST | 0 | 3.5 | 12.9 | 0.1 | 2.6 | 11.6 | 0.1 | 3.9 | 14.2 | 0.2 | 4.6 | 14.5 | 0.1 | 3.8 | 16.6 | 0.1 | 4.1 | 15.5 |
| 13 - 27 - E BROADWAY @ N ST | 0.1 | 3.7 | 9.2 | 0 | 3.4 | 8.2 | 0 | 4.1 | 10.1 | 0 | 4.7 | 9.9 | 0 | 4.5 | 12.1 | 0 | 4.7 | 10.8 |
| 14 - 28 - E BROADWAY @ O ST | 0 | 4.7 | 4.5 | 0 | 2.7 | 5.6 | 0 | 4.3 | 5.9 | 0 | 3.6 | 6.3 | 0 | 4.8 | 7.4 | 0 | 4.2 | 6.6 |
| 15 - 29 - E BROADWAY @ P ST | 0 | 2.4 | 2.1 | 0 | 3.5 | 2 | 0 | 3.5 | 2.4 | 0 | 3.3 | 3 | 0 | 4.2 | 3.2 | 0 | 3.9 | 2.7 |
| 16 - 30 - E BROADWAY @ FARRAGUT RD | 0 | 1 | 1.2 | 0.1 | 0.9 | 1.3 | 0 | 1 | 1.5 | 0 | 1.3 | 1.8 | 0 | 1.4 | 1.9 | 0 | 1.1 | 1.7 |
| 17 - 32 - FARRAGUT RD OPP E 2ND ST | 0.1 | 0.2 | 1.1 | 0 | 0.1 | 1.2 | 0 | 0.2 | 1.3 | 0 | 0.2 | 1.7 | 0 | 0.9 | 1.1 | 0 | 0.1 | 1.6 |
| 18 - 10031 - E 1ST ST @ P ST | 0 | 0 | 1.1 | 0 | 0 | 1.2 | 0 | 0.2 | 1.1 | 0 | 0.1 | 1.5 | 0 | 0.4 | 0.7 | 0 | 0.4 | 1.2 |
| 19 - 10032 - E 1ST ST OPP O ST | 0.1 | 0.4 | 0.7 | 0.1 | 0.3 | 0.9 | 0 | 0.5 | 0.6 | 0.1 | 0.4 | 1.2 | 0 | 0.4 | 0.4 | 0 | 0.4 | 0.9 |
| 20 - 8851 - EAST 1ST ST @ M ST | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 21 - 33 - CITY POINT BUS TERMINAL | 0 | 0.6 | 0.2 | 0 | 0.3 | 0.7 | 0 | 0.5 | 0.1 | 0 | 1 | 0.3 | 0 | 0.3 | 0.1 | 0 | 0.7 | 0.1 |
| Maximum | | | 37.9 | | | 31.7 | | | 41.4 | | | 41.2 | | | 47.5 | | | 45.5 |
| Total | 42 | 42.2 | | 38.7 | 37.5 | | 44.5 | 46.5 | | 47.9 | 48.9 | | 54.3 | 54.7 | | 50.3 | 50.9 | |

| Seq - StopID - Stop Name | 17:23 (7.1)(B041) [62] {FA17} On | Off | Load | 17:28 (7.1)(B034) [61] {FA17} On | Off | Load | 17:34 (7.1)(B035) [56] {FA17} On | Off | Load | 17:39 (7.1)(B036) [48] {FA17} On | Off | Load | 5:57PM 17:45 (7.1)(B037) [61] {FA17} On | Off | Load |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - 16535 - OTIS ST @ SUMMER ST | 27.7 | 0 | 28 | 29.4 | 0 | 30.6 | 27.3 | 0 | 28.8 | 21 | 0 | 22.4 | 24.3 | 0 | 25.3 |
| 2 - 16538 - BEDFORD ST @ CHAUNCY ST | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 3 - 6564 - SUMMER ST @ SOUTH STATION - R | 14.8 | 0.2 | 43 | 16.3 | 0.9 | 46.1 | 13.3 | 0.3 | 41.8 | 16.5 | 0.2 | 38.2 | 12.9 | 0.3 | 37.9 |
| 4 - 888 - SUMMER ST @ MELCHER ST | 2.3 | 0.3 | 44.9 | 1.6 | 0.2 | 47.5 | 1.7 | 0.2 | 43.1 | 2.5 | 0.2 | 40.9 | 2.5 | 0.1 | 40.3 |
| 5 - 889 - SUMMER ST OPP WTC AVE | 1.8 | 0.9 | 45.8 | 1.7 | 1 | 48.2 | 1.1 | 0.9 | 43.2 | 1.4 | 0.6 | 41.6 | 2.3 | 0.6 | 42 |
| 6 - 244 - SUMMER ST @ E ST | 0.3 | 0.3 | 45.8 | 0.1 | 0.2 | 48.2 | 0.1 | 0.3 | 43.1 | 0.1 | 0.1 | 41.7 | 0 | 0 | 42 |
| 7 - 246 - SUMMER ST @ PAPPAS WAY | 0.5 | 0.8 | 45.5 | 0.3 | 0.5 | 48 | 0.5 | 0.7 | 42.9 | 0.5 | 0.4 | 41.8 | 0.4 | 0.3 | 42 |
| 8 - 208 - SUMMER ST @ POWERHOUSE ST | 0.5 | 0.7 | 45.2 | 0.3 | 0.6 | 47.7 | 0.2 | 0.5 | 42.6 | 0.3 | 0.5 | 41.5 | 0.2 | 0.4 | 41.8 |
| 9 - 885 - SUMMER ST @ E 1ST ST | 1.4 | 3.5 | 43.1 | 1 | 2.5 | 46.2 | 0.9 | 2.5 | 41.1 | 0.9 | 2.4 | 40.1 | 1.1 | 3.7 | 39.2 |
| 10 - 880 - L ST @ E 2ND ST | 1.3 | 4.8 | 39.6 | 1.1 | 6 | 41.4 | 1.4 | 4.5 | 37.9 | 1 | 3.4 | 37.6 | 0.8 | 4 | 36.4 |
| 11 - 879 - L ST @ BROADWAY | 1.5 | 21.1 | 20 | 2.1 | 23.6 | 19.9 | 1.9 | 21.5 | 18.4 | 1.4 | 22.3 | 16.7 | 1.1 | 18.3 | 19.3 |
| 12 - 26 - E BROADWAY @ M ST | 0.1 | 3.5 | 16.7 | 0.2 | 3.3 | 16.8 | 0.1 | 3.3 | 15.2 | 0.1 | 3.2 | 13.6 | 0.2 | 4.3 | 15.2 |
| 13 - 27 - E BROADWAY @ N ST | 0.1 | 5 | 11.8 | 0 | 5.2 | 11.6 | 0 | 4.8 | 10.5 | 0 | 4.2 | 9.4 | 0 | 4.4 | 10.9 |
| 14 - 28 - E BROADWAY @ O ST | 0 | 4.7 | 7.1 | 0 | 4.7 | 6.8 | 0.1 | 4.6 | 5.9 | 0 | 4.1 | 5.4 | 0 | 4.4 | 6.5 |
| 15 - 29 - E BROADWAY @ P ST | 0 | 4 | 3.1 | 0 | 4.5 | 2.4 | 0.1 | 4.3 | 1.9 | 0 | 3.5 | 1.9 | 0 | 4.1 | 2.4 |
| 16 - 30 - E BROADWAY @ FARRAGUT RD | 0 | 1.1 | 2.1 | 0 | 1.1 | 1.3 | 0 | 0.8 | 1.1 | 0 | 1 | 0.9 | 0 | 1.1 | 1.3 |
| 17 - 32 - FARRAGUT RD OPP E 2ND ST | 0.1 | 0.6 | 1.5 | 0 | 0.4 | 1 | 0.1 | 0.3 | 1 | 0 | 0.1 | 0.9 | 0 | 0.1 | 1.3 |
| 18 - 10031 - E 1ST ST @ P ST | 0 | 0.1 | 1.5 | 0 | 0.1 | 0.8 | 0 | 0 | 0.9 | 0 | 0 | 0.8 | 0 | 0.2 | 1.1 |
| 19 - 10032 - E 1ST ST OPP O ST | 0 | 0.3 | 1.2 | 0 | 0.3 | 0.6 | 0 | 0.4 | 0.6 | 0 | 0.3 | 0.5 | 0 | 0.6 | 0.9 |
| 20 - 8851 - EAST 1ST ST @ M ST | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 21 - 33 - CITY POINT BUS TERMINAL | 0 | 1 | 0.1 | 0 | 0.5 | 0.1 | 0 | 0.3 | 0.3 | 0 | 0.4 | 0.2 | 0 | 0.7 | 0.1 |
| Maximum | | | 45.8 | | | 48.2 | | | 43.2 | | | 41.8 | | | 42 |
| Total | 52.4 | 52.9 | | 54.1 | 55.6 | | 48.8 | 50.2 | | 45.7 | 46.9 | | 45.8 | 47.6 | |

26.3 0 16.4

461.7 11.6 34.2

Massachusetts Bay Transportation Authority
Route 9
Weekday - Inbound

(Urban Transportation Associates)

| | 08:05A | | | 08:06A | | | 08:13A | | | 08:14A | | | 08:19A | | | 08:24A | | | 08:29A | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 08:02 (9.0)(B062) [11] {FA17} | | | 08:02 (9.1)(B063) [54] {FA17} | | | 08:10 (9.0)(B121) [65] {FA17} | | | 08:10 (9.1)(B075) [56] {FA17} | | | 08:15 (9.0)(B031) [56] {FA17} | | | 08:20 (9.0)(B071) [64] {FA17} | | | 08:25 (9.0)(B065) [69] {FA17} | | |
| Seq - StopID - Stop Name | On | Off | Load | On | Off | Load | On | Off | Load | On | Off | Load | On | Off | Load | On | Off | Load | On | Off | Load |
| 1 - 33 - CITY POINT BUS TERMINAL | 1.4 | 0 | 1.4 | 9.3 | 0 | 9.3 | 0.8 | 0 | 0.9 | 4.8 | 0 | 4.8 | 1.2 | 0 | 1.2 | 0.1 | 0 | 0.1 | 0.9 | 0 | 1 |
| 2 - 10033 - E 1ST ST @ O ST | 1.4 | 0 | 2.7 | . | . | . | 1.1 | 0 | 1.9 | . | . | . | 1.2 | 0 | 2.4 | 0.8 | 0 | 1 | 0.8 | 0 | 1.8 |
| 3 - 34 - P ST @ E 2ND ST | 0.5 | 0.1 | 3.2 | . | . | . | 1.1 | 0 | 3 | . | . | . | 1.1 | 0 | 3.5 | 1.1 | 0 | 2.1 | 1.2 | 0 | 3.1 |
| 4 - 35 - P ST @ E BROADWAY | 3.5 | 0 | 6.7 | . | . | . | 4 | 0 | 7.1 | . | . | . | 4.4 | 0 | 7.8 | 3 | 0 | 5.1 | 3.3 | 0 | 6.3 |
| 5 - 895 - E BROADWAY @ N ST | 4.4 | 0 | 11.1 | . | . | . | 3.9 | 0 | 11 | . | . | . | 5.1 | 0 | 12.9 | 3 | 0 | 8.1 | 2.8 | 0 | 9.1 |
| 6 - 896 - E BROADWAY @ M ST | 3.7 | 0 | 14.8 | . | . | . | 2.7 | 0 | 13.7 | . | . | . | 3.1 | 0 | 16 | 1.4 | 0 | 9.5 | 2 | 0 | 11.1 |
| 7 - 880 - L ST @ E 2ND ST | . | . | . | 0.1 | 0 | 9.4 | . | . | . | 0.3 | 0 | 5 | . | . | . | . | . | . | . | . | . |
| 8 - 41 - E BROADWAY @ L ST | 2.1 | 0 | 16.9 | 5.9 | 0.3 | 15.5 | 5.2 | 0 | 18.9 | 4.5 | 0 | 9.6 | 5.1 | 0 | 21.1 | 3.1 | 0 | 12.7 | 3.4 | 0 | 14.5 |
| 9 - 42 - E BROADWAY @ K ST | 2.9 | 0 | 19.8 | 3.8 | 0.1 | 19.1 | 3.8 | 0.1 | 22.6 | 3.7 | 0.1 | 12.9 | 4.5 | 0.1 | 25.5 | 3.1 | 0 | 15.7 | 3.5 | 0 | 18 |
| 10 - 43 - E BROADWAY @ I ST | 4.3 | 0 | 24.1 | 3.9 | 0 | 23 | 3.8 | 0.1 | 26.3 | 4.2 | 0 | 17.1 | 6.4 | 0.1 | 31.8 | 5.6 | 0.1 | 21.2 | 5.2 | 0 | 23.2 |
| 11 - 44 - E BROADWAY @ H ST | 5.5 | 0.1 | 29.5 | 4 | 0.1 | 26.9 | 4.5 | 0 | 30.8 | 4.3 | 0.1 | 21.2 | 5.4 | 0.1 | 37.2 | 3.4 | 0 | 24.6 | 4.4 | 0 | 27.6 |
| 12 - 45 - E BROADWAY @ G ST | 1.8 | 0 | 31.3 | 5.4 | 0.1 | 32.3 | 3.7 | 0.1 | 34.4 | 5.5 | 0.1 | 26.6 | 4.7 | 0.1 | 41.7 | 4.9 | 0.1 | 29.4 | 4.7 | 0.1 | 32.2 |
| 13 - 158 - 442 W BROADWAY | 3.8 | 0.4 | 34.7 | 2.9 | 0.1 | 35.1 | 2.8 | 0.1 | 37 | 3.3 | 0.1 | 29.9 | 2.3 | 0.1 | 44 | 3.8 | 0.1 | 33 | 3.4 | 0.1 | 35.5 |
| 14 - 159 - W BROADWAY @ F ST | 2.8 | 0 | 37.5 | 2.6 | 0.1 | 37.6 | 2.3 | 0.1 | 39.2 | 3.1 | 0.1 | 32.9 | 2.7 | 0.1 | 46.6 | 4.1 | 0.1 | 37 | 3.6 | 0.1 | 39.1 |
| 15 - 160 - W BROADWAY @ E ST | 2.6 | 0 | 40.2 | 2 | 0 | 39.6 | 2.2 | 0 | 41.4 | 3.1 | 0 | 35.9 | 1.3 | 0.1 | 47.7 | 3 | 0.1 | 39.9 | 3.2 | 0 | 42.3 |
| 16 - 161 - W BROADWAY @ D ST | 2.3 | 0.2 | 42.3 | 2.7 | 0.2 | 42.1 | 1.4 | 0.3 | 42.4 | 2.3 | 0.2 | 38 | 1.2 | 0.4 | 48.6 | 2.3 | 0.3 | 41.9 | 1.8 | 0.2 | 43.9 |
| 17 - 162 - W BROADWAY @ C ST | 0.6 | 0 | 42.9 | 0.3 | 0.1 | 42.3 | 0.5 | 0 | 42.9 | 0.7 | 0.1 | 38.5 | 0.4 | 0.1 | 48.8 | 0.5 | 0 | 42.3 | 0.4 | 0 | 44.3 |
| 18 - 163 - W BROADWAY @ B ST | 0.7 | 0.6 | 43 | 0.4 | 0.5 | 42.2 | 0.3 | 0.6 | 42.6 | 0.3 | 0.7 | 38.1 | 0.6 | 0.6 | 48.8 | 0.3 | 1.1 | 41.5 | 0.5 | 1.1 | 43.7 |
| 19 - 150 - BROADWAY STATION - RED LINE | 11 | 7.9 | 46.1 | 7.2 | 8.6 | 40.8 | 8.2 | 9.5 | 41.3 | 9.7 | 10.8 | 37 | 10.7 | 12.2 | 47.3 | 9.1 | 12.7 | 37.9 | 10.7 | 13.3 | 41.1 |
| 20 - 36538 - E BERKELEY ST @ HARRISON AVE | 1 | 1.3 | 45.8 | 0.8 | 1 | 40.6 | 0.9 | 0.9 | 41.3 | 0.9 | 1.2 | 36.7 | 1.1 | 1.6 | 46.8 | 1.1 | 1.7 | 37.3 | 0.8 | 1.3 | 40.5 |
| 21 - 36541 - E BERKELEY ST @ WASHINGTON ST | 0.9 | 1.2 | 45.5 | 1.1 | 0.8 | 40.9 | 0.9 | 1 | 41.3 | 0.8 | 1.2 | 36.3 | 1.6 | 2 | 46.3 | 0.8 | 1.3 | 36.8 | 1 | 1.5 | 40 |
| 22 - 36539 - E BERKELEY @ TREMONT ST | 0.4 | 0.6 | 45.3 | 0.4 | 0.7 | 40.6 | 0.3 | 0.7 | 40.9 | 0.2 | 0.8 | 35.6 | 0.6 | 1.5 | 45.4 | 0.3 | 0.8 | 36.3 | 0.4 | 1.7 | 38.7 |
| 23 - 36540 - BERKELEY ST @ CHANDLER ST | 0.3 | 0.4 | 45.2 | 0.2 | 0.1 | 40.6 | 0.2 | 0.2 | 41 | 0.1 | 0.3 | 35.5 | 0.1 | 0.2 | 45.3 | 0 | 0.2 | 36.2 | 0.1 | 0.3 | 38.5 |
| 24 - 171 - BERKELEY ST @ COLUMBUS AVE | 1.4 | 13.7 | 32.8 | 0.9 | 10.6 | 31 | 0.9 | 12.2 | 29.6 | 0.5 | 10.3 | 25.7 | 1.5 | 14.1 | 32.6 | 0.7 | 11.2 | 25.7 | 1 | 11.3 | 28.3 |
| 25 - 173 - SAINT JAMES AVE @ CLARENDON S | 0.6 | 10.5 | 23 | 0.3 | 9.5 | 21.8 | 0.1 | 8.3 | 21.4 | 0.2 | 8.1 | 17.7 | 0.2 | 10.6 | 22.2 | 0.2 | 8.7 | 17.2 | 0.3 | 10.2 | 18.4 |
| 26 - 178 - SAINT JAMES AVE @ DARTMOUTH S | 0.2 | 10.3 | 12.9 | 0 | 10.3 | 11.5 | 0.1 | 10.6 | 10.9 | 0.1 | 8.6 | 9.1 | 0 | 8.6 | 13.6 | 0.1 | 7.3 | 10 | 0.1 | 8.1 | 10.4 |
| 27 - 11388 - HUNTINGTON AVE @ BELVIDERE ST | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 28 - 31391 - HUNTINGTON AVE @ GAINSBOROUGH | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 29 - 41391 - HUNTINGTON AVE @ OPERA PL | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 30 - 61391 - HUNTINGTON AVE @ FORSYTH WAY | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 31 - 71391 - HUNTINGTON AVE @ LOUIS PRANG | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 32 - 1800 - LOUIS PRANG ST @ EVANS WAY | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 33 - 11799 - AVE LOUIS PASTEUR @ THE FENWA | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 34 - 11802 - AVE LOUIS PASTEUR @ LONGWOOD | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 35 - 11803 - LONGWOOD AVE @ BINNEY ST | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 36 - 1804 - BROOKLINE AVE @ LONGWOOD AVE | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 37 - 1805 - BROOKLINE AVE OPP SHORT ST | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 38 - 1806 - BROOKLINE AVE @ THE FENWAY | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 39 - 9441 - BROOKLINE AVE @ BOYLSTON ST | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 40 - 1562 - 132 BROOKLINE AVE @ FULLERT | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 41 - 1563 - BROOKLINE AVE @ YAWKEY WAY | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 42 - 1564 - BROOKLINE AVE @ NEWBURY ST | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 43 - 899 - KENMORE STATION BUSWAY | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 44 - 179 - RING RD @ HUNTINGTON AVE | 0.1 | 10 | 3 | 0 | 9.8 | 1.7 | 0.1 | 9.3 | 1.8 | 0.1 | 7.9 | 1.3 | 0 | 11.9 | 1.8 | 0.1 | 8.6 | 1.5 | 0.1 | 9.2 | 1.4 |
| 45 - 174 - RING RD @ BOYLSTON ST | 0 | 2.3 | 0.7 | 0 | 1.4 | 0.3 | 0.1 | 0.9 | 1 | 0 | 1 | 0.3 | 0 | 1.3 | 0.5 | 0.1 | 0.8 | 0.8 | 0 | 0.8 | 0.7 |
| 46 - 175 - BOYLSTON ST @ DARTMOUTH ST | 0 | 0.7 | 0 | 0 | 0 | 0.3 | 0 | 0.9 | 0.1 | 0 | 0.3 | 0.1 | 0 | 0.5 | 0 | 0 | 0.6 | 0.2 | 0 | 0.5 | 0.2 |
| Maximum | | | 46.1 | | | 42.3 | | | 42.9 | | | 38.5 | | | 48.8 | | | 42.3 | | | 44.3 |
| Total | 60.2 | 60.3 | | 54.2 | 54.4 | | 55.9 | 55.9 | | 52.7 | 52 | | 66.5 | 66.3 | | 56 | 55.8 | | 59.6 | 59.8 | |

| | 08:34A | | | 08:39A | | | 08:46A | | | 08:53A | | | 05:02P | | | 05:13P | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 08:30 (9.0)(B066) [57] {FA17} | | | 08:35 (9.0)(B068) [69] {FA17} | | | 08:42 (9.0)(B069) [50] {FA17} | | | 08:49 (9.0)(B070) [66] {FA17} | | | 16:59 (9.0)(B093) [66] {FA17} | | | 17:10 (9.0)(B076) [51] {FA17} | | |
| Seq - StopID - Stop Name | On | Off | Load | On | Off | Load | On | Off | Load | On | Off | Load | On | Off | Load | On | Off | Load |
| 1 - 33 - CITY POINT BUS TERMINAL | 1.2 | 0 | 1.2 | 0.4 | 0 | 0.4 | 1.4 | 0 | 1.4 | 1.3 | 0 | 1.3 | 1.3 | 0 | 1.4 | 1.3 | 0 | 1.3 |
| 2 - 10033 - E 1ST ST @ O ST | 0.6 | 0 | 1.9 | 0.6 | 0 | 0.9 | 0.4 | 0 | 1.8 | 0.4 | 0 | 1.6 | 0.2 | 0 | 1.5 | 0.1 | 0 | 1.5 |
| 3 - 34 - P ST @ E 2ND ST | 0.4 | 0 | 2.4 | 0.5 | 0 | 1.5 | 0.2 | 0 | 2 | 0.1 | 0 | 1.9 | 0.2 | 0 | 1.7 | 0.3 | 0 | 1.8 |
| 4 - 35 - P ST @ E BROADWAY | 2.3 | 0 | 4.6 | 2.1 | 0 | 3.5 | 1.7 | 0 | 3.6 | 1.4 | 0 | 3.2 | 0.8 | 0 | 2.5 | 0.6 | 0 | 2.4 |
| 5 - 895 - E BROADWAY @ N ST | 1.4 | 0 | 6 | 1.7 | 0 | 5.2 | 3.1 | 0 | 6.7 | 1.9 | 0 | 5.1 | 0.8 | 0 | 3.3 | 0.5 | 0 | 2.9 |
| 6 - 896 - E BROADWAY @ M ST | 1.6 | 0 | 7.5 | 1.5 | 0 | 6.6 | 1.6 | 0 | 8.2 | 1.4 | 0 | 6.5 | 0.5 | 0 | 3.8 | 0.3 | 0 | 3.2 |
| 7 - 880 - L ST @ E 2ND ST | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 8 - 41 - E BROADWAY @ L ST | 2.3 | 0 | 9.9 | 2.6 | 0 | 9.2 | 4.1 | 0 | 12.2 | 3.7 | 0.1 | 10 | 2 | 0 | 5.7 | 1.4 | 0 | 4.6 |
| 9 - 42 - E BROADWAY @ K ST | 2.1 | 0 | 12 | 2.3 | 0 | 11.4 | 3 | 0 | 15.1 | 2.4 | 0 | 12.4 | 3.1 | 0 | 8.6 | 1.8 | 0.1 | 6.3 |
| 10 - 43 - E BROADWAY @ I ST | 3.6 | 0.1 | 15.5 | 3.8 | 0 | 15.2 | 4.3 | 0 | 19.4 | 3.1 | 0 | 15.3 | 2.1 | 0.1 | 10.6 | 0.9 | 0.1 | 7.1 |
| 11 - 44 - E BROADWAY @ H ST | 3.5 | 0 | 19 | 3.2 | 0 | 18.4 | 3.2 | 0 | 22.6 | 3.1 | 0 | 18.4 | 1.1 | 0.2 | 11.5 | 0.9 | 0 | 8 |
| 12 - 45 - E BROADWAY @ G ST | 2 | 0 | 21 | 2.7 | 0.1 | 21 | 3.4 | 0.1 | 25.9 | 2.3 | 0 | 20.7 | 1.5 | 0.3 | 12.7 | 1.4 | 0.4 | 8.9 |
| 13 - 158 - 442 W BROADWAY | 3 | 0.2 | 23.8 | 3.1 | 0.1 | 24 | 3.7 | 0.4 | 29.1 | 3.3 | 0.3 | 23.7 | 3.5 | 0.4 | 15.9 | 2 | 0.2 | 10.7 |
| 14 - 159 - W BROADWAY @ F ST | 3.2 | 0 | 27 | 2.9 | 0.1 | 26.7 | 2.7 | 0.2 | 31.6 | 2.9 | 0.1 | 26.5 | 2.9 | 0.3 | 18.5 | 1.7 | 0.2 | 12.3 |
| 15 - 160 - W BROADWAY @ E ST | 2.5 | 0.1 | 29.4 | 2.7 | 0 | 29.4 | 2 | 0 | 33.6 | 1.7 | 0.2 | 28 | 1.7 | 0.3 | 19.9 | 0.7 | 0.3 | 12.7 |
| 16 - 161 - W BROADWAY @ D ST | 2 | 0.1 | 31.3 | 1.5 | 0.2 | 30.7 | 1.5 | 0.1 | 35 | 1.7 | 0.2 | 29.4 | 2.9 | 0.3 | 22.5 | 2.1 | 0.5 | 14.3 |
| 17 - 162 - W BROADWAY @ C ST | 0.7 | 0.1 | 31.8 | 0.8 | 0.1 | 31.5 | 0.7 | 0.2 | 35.5 | 0.5 | 0.1 | 29.9 | 0.4 | 0.4 | 22.5 | 0.4 | 0.2 | 14.5 |
| 18 - 163 - W BROADWAY @ B ST | 0.5 | 1.4 | 31 | 0.5 | 1.1 | 30.8 | 0.3 | 1.3 | 34.6 | 0.2 | 0.8 | 29.3 | 0.2 | 0.3 | 22.3 | 0.1 | 0.3 | 14.4 |
| 19 - 150 - BROADWAY STATION - RED LINE | 6.8 | 8.2 | 29.6 | 8.4 | 8.5 | 30.8 | 7.8 | 10.7 | 31.7 | 14.9 | 10.7 | 33.5 | 5.2 | 13.2 | 14.3 | 4.6 | 8.6 | 10.4 |
| 20 - 36538 - E BERKELEY ST @ HARRISON AVE | 0.5 | 1.3 | 28.8 | 0.7 | 1.7 | 29.8 | 0.6 | 1.4 | 31 | 0.8 | 2.8 | 31.5 | 0.7 | 0.7 | 14.2 | 0.5 | 0.5 | 10.5 |
| 21 - 36541 - E BERKELEY ST @ WASHINGTON ST | 0.6 | 1.1 | 28.3 | 0.8 | 1.5 | 29.1 | 0.8 | 1.6 | 30.1 | 1 | 2.8 | 29.7 | 1.2 | 1.7 | 13.8 | 0.6 | 0.9 | 10.2 |
| 22 - 36539 - E BERKELEY @ TREMONT ST | 0.2 | 1 | 27.5 | 0.5 | 1.1 | 28.5 | 0.2 | 0.8 | 29.5 | 0.3 | 1.9 | 28.1 | 0.3 | 1.1 | 13 | 0.2 | 0.9 | 9.4 |
| 23 - 36540 - BERKELEY ST @ CHANDLER ST | 0.1 | 0.3 | 27.3 | 0.1 | 0.6 | 28 | 0.1 | 0.7 | 29 | 0.1 | 0.7 | 27.5 | 0.1 | 0.5 | 12.5 | 0 | 0.3 | 9.1 |
| 24 - 171 - BERKELEY ST @ COLUMBUS AVE | 0.3 | 7.4 | 20.1 | 0.3 | 7.4 | 20.9 | 0.2 | 6.4 | 22.8 | 0.2 | 5.7 | 22.1 | 0 | 1.3 | 11.3 | 0 | 1.5 | 7.7 |
| 25 - 173 - SAINT JAMES AVE @ CLARENDON S | 0 | 6.7 | 13.4 | 0.1 | 7.6 | 13.4 | 0.1 | 8 | 14.9 | 0.1 | 7.2 | 14.9 | 0.2 | 1.9 | 9.7 | 0.1 | 1.8 | 6.1 |
| 26 - 178 - SAINT JAMES AVE @ DARTMOUTH S | 0 | 5.9 | 7.5 | 0.1 | 6.8 | 6.7 | 0 | 7.8 | 7.2 | 0.1 | 8.1 | 6.9 | 0.2 | 7.2 | 3.9 | 0.1 | 4.6 | 2.5 |
| 27 - 11388 - HUNTINGTON AVE @ BELVIDERE ST | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 28 - 31391 - HUNTINGTON AVE @ GAINSBOROUGH | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 29 - 41391 - HUNTINGTON AVE @ OPERA PL | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 30 - 61391 - HUNTINGTON AVE @ FORSYTH WAY | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 31 - 71391 - HUNTINGTON AVE @ LOUIS PRANG | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 32 - 1800 - LOUIS PRANG ST @ EVANS WAY | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 33 - 11799 - AVE LOUIS PASTEUR @ THE FENWA | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 34 - 11802 - AVE LOUIS PASTEUR @ LONGWOOD | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 35 - 11803 - LONGWOOD AVE @ BINNEY ST | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 36 - 1804 - BROOKLINE AVE @ LONGWOOD AVE | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 37 - 1805 - BROOKLINE AVE OPP SHORT ST | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 38 - 1806 - BROOKLINE AVE @ THE FENWAY | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 39 - 9441 - BROOKLINE AVE @ BOYLSTON ST | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 40 - 1562 - 132 BROOKLINE AVE @ FULLERT | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 41 - 1563 - BROOKLINE AVE @ YAWKEY WAY | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 42 - 1564 - BROOKLINE AVE @ NEWBURY ST | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 43 - 899 - KENMORE STATION BUSWAY | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 44 - 179 - RING RD @ HUNTINGTON AVE | 0 | 5.6 | 1.9 | 0 | 5.3 | 1.4 | 0 | 5.8 | 1.4 | 0.1 | 4.4 | 2.6 | 6.8 | 2 | 9.3 | 3.8 | 1.1 | 5.6 |
| 45 - 174 - RING RD @ BOYLSTON ST | 0 | 0.8 | 1.1 | 0.1 | 0.9 | 0.7 | 0 | 1.1 | 0.3 | 0.1 | 1.3 | 1.4 | 1.9 | 1.5 | 9.7 | 1.2 | 0.8 | 6 |
| 46 - 175 - BOYLSTON ST @ DARTMOUTH ST | 0 | 1.1 | 0 | 0 | 0.5 | 0.2 | 0 | 0.3 | 0 | 0 | 1.1 | 0.3 | 0 | 5.3 | 4.4 | 0 | 3.4 | 2.6 |
| Maximum | | | 31.8 | | | 31.5 | | | 35.5 | | | 33.5 | | | 22.5 | | | 14.5 |
| Total | 41.4 | 41.4 | | 44 | 43.6 | | 47.1 | 46.9 | | 49.1 | 48.5 | | 41.8 | 39 | | 27.6 | 26.7 | |

| | 05:22P | | | 05:32P | | | 05:41P | | | 05:48P | | | 05:55P | | | 06:00P | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 17:19 (9.0)(B072) [49] {FA17} | | | 17:29 (9.0)(B077) [62] {FA17} | | | 17:38 (9.0)(B078) [64] {FA17} | | | 17:45 (9.0)(B079) [64] {FA17} | | | 17:52 (9.0)(B080) [67] {FA17} | | | 17:57 (9.0)(B081) [53] {FA17} | | |
| Seq - StopID - Stop Name | On | Off | Load | On | Off | Load | On | Off | Load | On | Off | Load | On | Off | Load | On | Off | Load |
| 1 - 33 - CITY POINT BUS TERMINAL | 0.8 | 0 | 1 | 0.9 | 0 | 0.9 | 1.1 | 0 | 1.3 | 1 | 0 | 1.1 | 1.2 | 0 | 1.4 | 0.9 | 0 | 1.1 |
| 2 - 10033 - E 1ST ST @ O ST | 0.2 | 0 | 1 | 0.1 | 0 | 0.8 | 0.2 | 0 | 1.3 | 0.1 | 0 | 1.3 | 0.1 | 0 | 1.5 | 0.1 | 0 | 1.2 |
| 3 - 34 - P ST @ E 2ND ST | 0.4 | 0 | 1.5 | 0.1 | 0 | 0.9 | 0.1 | 0 | 1.5 | 0.1 | 0 | 1.4 | 0.1 | 0 | 1.6 | 0.1 | 0 | 1.2 |
| 4 - 35 - P ST @ E BROADWAY | 1.1 | 0 | 2.6 | 1 | 0 | 2 | 1 | 0 | 2.4 | 0.7 | 0 | 2.1 | 0.4 | 0 | 2 | 0.6 | 0 | 1.8 |
| 5 - 895 - E BROADWAY @ N ST | 0.6 | 0 | 3.2 | 0.7 | 0 | 2.7 | 0.8 | 0 | 3.2 | 0.9 | 0 | 3 | 0.5 | 0 | 2.4 | 0.8 | 0 | 2.6 |
| 6 - 896 - E BROADWAY @ M ST | 0.5 | 0 | 3.7 | 0.5 | 0 | 3.2 | 0.2 | 0 | 3.4 | 0.2 | 0 | 3.2 | 0.2 | 0 | 2.6 | 0.1 | 0 | 2.7 |
| 7 - 880 - L ST @ E 2ND ST | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 8 - 41 - E BROADWAY @ L ST | 1.5 | 0 | 5.1 | 1.7 | 0 | 4.9 | 1.6 | 0 | 5 | 1.1 | 0.1 | 4 | 1.1 | 0.1 | 3.6 | 1.2 | 0 | 3.7 |
| 9 - 42 - E BROADWAY @ K ST | 1.4 | 0.1 | 6.5 | 2.4 | 0.3 | 7 | 2.5 | 0.1 | 7.4 | 1.7 | 0 | 5.5 | 1.4 | 0 | 5 | 1.7 | 0.1 | 5.3 |
| 10 - 43 - E BROADWAY @ I ST | 1.2 | 0.1 | 7.5 | 1.5 | 0 | 8.6 | 1.7 | 0 | 9.1 | 1 | 0.1 | 6.3 | 1 | 0 | 5.9 | 2.4 | 0 | 7.5 |
| 11 - 44 - E BROADWAY @ H ST | 0.4 | 0.2 | 7.8 | 1.3 | 0.2 | 9.7 | 1 | 0.2 | 9.8 | 0.5 | 0 | 6.8 | 0.4 | 0.1 | 6.2 | 0.5 | 0.1 | 7.9 |
| 12 - 45 - E BROADWAY @ G ST | 0.9 | 0.3 | 8.4 | 1.1 | 0.4 | 10.4 | 0.5 | 0.5 | 9.9 | 0.4 | 0.3 | 7 | 0.5 | 0.1 | 6.6 | 0.6 | 0.2 | 8.3 |
| 13 - 158 - 442 W BROADWAY | 2.1 | 0.4 | 10.1 | 2.4 | 0.5 | 12.3 | 1.6 | 0.7 | 10.8 | 0.7 | 0.4 | 7.2 | 1.2 | 0.3 | 7.5 | 1.4 | 0.6 | 9 |
| 14 - 159 - W BROADWAY @ F ST | 1.8 | 0.2 | 11.7 | 2.2 | 0.2 | 14.3 | 1.5 | 0.2 | 12.1 | 0.7 | 0.1 | 7.8 | 1.1 | 0.2 | 8.5 | 1.3 | 0 | 10.3 |
| 15 - 160 - W BROADWAY @ E ST | 0.9 | 0.3 | 12.3 | 1.4 | 0.3 | 15.4 | 1 | 0.3 | 12.8 | 0.7 | 0.2 | 8.3 | 0.7 | 0.2 | 9 | 0.6 | 0.2 | 10.7 |
| 16 - 161 - W BROADWAY @ D ST | 2.6 | 0.4 | 14.5 | 3.8 | 0.4 | 18.7 | 2.1 | 0.5 | 14.4 | 0.8 | 0.3 | 8.8 | 2.1 | 0.3 | 10.8 | 1.4 | 0.3 | 11.7 |
| 17 - 162 - W BROADWAY @ C ST | 0.1 | 0.2 | 14.4 | 0.4 | 0.4 | 18.7 | 0.4 | 0.1 | 14.7 | 0.2 | 0.1 | 8.9 | 0.1 | 0.1 | 10.9 | 0.3 | 0.2 | 11.8 |
| 18 - 163 - W BROADWAY @ B ST | 0.2 | 0.3 | 14.2 | 0.1 | 0.5 | 18.3 | 0.1 | 0.4 | 14.4 | 0.1 | 0.3 | 8.7 | 0.1 | 0.4 | 10.6 | 0.2 | 0.3 | 11.7 |
| 19 - 150 - BROADWAY STATION - RED LINE | 5.6 | 8.3 | 11.5 | 5.4 | 12 | 11.9 | 3.3 | 8.8 | 9 | 2.6 | 4.3 | 7 | 3.7 | 6 | 8.3 | 2.7 | 7.1 | 7.3 |
| 20 - 36538 - E BERKELEY ST @ HARRISON AVE | 1.1 | 0.7 | 12 | 0.8 | 0.9 | 11.8 | 0.6 | 1 | 8.5 | 0.4 | 0.7 | 6.7 | 0.4 | 1 | 7.8 | 0.3 | 0.7 | 6.9 |
| 21 - 36541 - E BERKELEY ST @ WASHINGTON ST | 1 | 0.9 | 12.1 | 1.1 | 2.3 | 10.6 | 0.7 | 1.5 | 7.8 | 0.5 | 1 | 6.1 | 0.7 | 1.1 | 7.4 | 0.5 | 1.1 | 6.3 |
| 22 - 36539 - E BERKELEY @ TREMONT ST | 0.1 | 0.8 | 11.4 | 0.1 | 1.4 | 9.4 | 0 | 1 | 6.9 | 0 | 0.8 | 5.3 | 0.1 | 1.1 | 6.4 | 0.1 | 0.8 | 5.6 |
| 23 - 36540 - BERKELEY ST @ CHANDLER ST | 0.1 | 0.5 | 11 | 0.1 | 0.6 | 8.9 | 0 | 0.4 | 6.5 | 0.1 | 0.2 | 5.2 | 0.1 | 0.3 | 6.2 | 0.1 | 0.2 | 5.5 |
| 24 - 171 - BERKELEY ST @ COLUMBUS AVE | 0 | 1.2 | 9.9 | 0.1 | 1.4 | 7.8 | 0 | 0.7 | 5.9 | 0 | 0.3 | 4.9 | 0 | 0.6 | 5.7 | 0 | 0.5 | 5.1 |
| 25 - 173 - SAINT JAMES AVE @ CLARENDON S | 0 | 2.3 | 7.6 | 0 | 2.5 | 5.7 | 0 | 1.9 | 4.4 | 0 | 0.8 | 4.2 | 0 | 1.1 | 4.7 | 0 | 0.9 | 4.2 |
| 26 - 178 - SAINT JAMES AVE @ DARTMOUTH S | 0.1 | 5.5 | 2.8 | 0.2 | 6.9 | 1.4 | 0.1 | 4.7 | 1.2 | 0.1 | 2.3 | 2.3 | 0.1 | 3 | 2.2 | 0.1 | 3.6 | 1.4 |
| 27 - 11388 - HUNTINGTON AVE @ BELVIDERE ST | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 28 - 31391 - HUNTINGTON AVE @ GAINSBOROUGH | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 29 - 41391 - HUNTINGTON AVE @ OPERA PL | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 30 - 61391 - HUNTINGTON AVE @ FORSYTH WAY | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 31 - 71391 - HUNTINGTON AVE @ LOUIS PRANG | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 32 - 1800 - LOUIS PRANG ST @ EVANS WAY | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 33 - 11799 - AVE LOUIS PASTEUR @ THE FENWA | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 34 - 11802 - AVE LOUIS PASTEUR @ LONGWOOD | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 35 - 11803 - LONGWOOD AVE @ BINNEY ST | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 36 - 1804 - BROOKLINE AVE @ LONGWOOD AVE | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 37 - 1805 - BROOKLINE AVE OPP SHORT ST | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 38 - 1806 - BROOKLINE AVE @ THE FENWAY | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 39 - 9441 - BROOKLINE AVE @ BOYLSTON ST | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 40 - 1562 - 132 BROOKLINE AVE @ FULLERT | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 41 - 1563 - BROOKLINE AVE @ YAWKEY WAY | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 42 - 1564 - BROOKLINE AVE @ NEWBURY ST | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 43 - 899 - KENMORE STATION BUSWAY | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 44 - 179 - RING RD @ HUNTINGTON AVE | 5.3 | 1.1 | 7.3 | 8.3 | 2.1 | 9 | 4.3 | 1.5 | 5 | 2.1 | 0.8 | 3.8 | 3.2 | 1.1 | 4.8 | 2.7 | 0.8 | 3.5 |
| 45 - 174 - RING RD @ BOYLSTON ST | 1.3 | 0.8 | 7.9 | 2.4 | 1.3 | 10 | 1.3 | 1 | 5.3 | 0.6 | 0.5 | 3.9 | 1 | 0.5 | 5.3 | 0.8 | 0.5 | 3.9 |
| 46 - 175 - BOYLSTON ST @ DARTMOUTH ST | 0 | 6.2 | 1.7 | 0 | 1.4 | 8.6 | 0 | 1.8 | 3.5 | 0 | 3 | 0.8 | 0 | 3.4 | 1.9 | 0 | 1.7 | 2.2 |
| Maximum | | | 14.5 | | | 18.7 | | | 14.7 | | | 8.9 | | | 10.9 | | | 11.8 |
| Total | 31.3 | 30.8 | | 40.1 | 36 | | 27.7 | 27.3 | | 17.3 | 16.6 | | 21.5 | 21 | | 21.5 | 19.9 | |

28 28 28 28 28 28 28 28 28 28 28 28 28 28 28 28 28 28 28 28 28 28 28 28 28 28 28 28 28 28 28 28 28

05:02P 05:13P 05:22P 05:32P 05:41P 05:48P 05:55P 06:00P

Massachusetts Bay Transportation Authority
Route 9
Weekday - Outbound

(Urban Transportation Associates)

L St @ Broadway

| Seq - StopID - Stop Name | 08:03A On | 08:03A Off | 08:03A Load | 08:08A On | 08:08A Off | 08:08A Load | 08:14A On | 08:14A Off | 08:14A Load | 08:20A On | 08:20A Off | 08:20A Load | 08:26A On | 08:26A Off | 08:26A Load |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 07:46 (9.1)(B064) [46] [FA17] | | | 07:51 (9.1)(B065) [68] [FA17] | | | 07:57 (9.1)(B066) [61] [FA17] | | | 08:03 (9.1)(B068) [68] [FA17] | | | 08:09 (9.1)(B069) [50] [FA17] | | |
| - 34 - | | | | | | | | | | | | | | | |
| 1 - 11780 - AVE LOUIS PASTEUR @ LONGWOOD | | | | | | | | | | | | | | | |
| 2 - 11781 - AVE LOUIS PASTEUR @ THE FENWA | | | | | | | | | | | | | | | |
| 3 - 1784 - RUGGLES ST @ HUNTINGTON AVE | | | | | | | | | | | | | | | |
| 4 - 1785 - RUGGLES ST @ ANNUNCIATION RD | | | | | | | | | | | | | | | |
| 5 - 17861 - RUGGLES UPPER BUSWAY | | | | | | | | | | | | | | | |
| 6 - 1226 - TREMONT ST @ RUGGLES ST | | | | | | | | | | | | | | | |
| 7 - 77777 - MELNEA CASS BLVD @ WASHINGTON | | | | | | | | | | | | | | | |
| 8 - 6 - MELNEA CASS BLVD @ HARRISON A | | | | | | | | | | | | | | | |
| 9 - 5089 - 91 E CONCORD ST | | | | | | | | | | | | | | | |
| 10 - 25089 - ALBANY ST @ BOSTON MEDICAL CT | | | | | | | | | | | | | | | |
| 11 - 855 - MASSACHUSETTS AVE @ ALBANY ST | | | | | | | | | | | | | | | |
| 12 - 8 - MASSACHUSETTS AVE @ ISLAND ST | | | | | | | | | | | | | | | |
| 13 - 10 - THEO GLYNN WAY @ NEWMARKET SQ | | | | | | | | | | | | | | | |
| 14 - 10010 - SOUTHAMPTON ST @ NEWMARKET ST | | | | | | | | | | | | | | | |
| 15 - 13 - ANDREW STATION BUSWAY | | | | | | | | | | | | | | | |
| 16 - 30294 - 250 DORCHESTER AVENUE | | | | | | | | | | | | | | | |
| 17 - 150 - BROADWAY STATION - RED LINE | | | | | | | | | | | | | | | |
| 18 - 175 - BOYLSTON ST @ DARTMOUTH ST | 4 | 0 | 4 | 3.7 | 0 | 3.9 | 3.5 | 0 | 3.7 | 4.1 | 0 | 4.6 | 3.5 | 0 | 3.5 |
| 19 - 143 - BOYLSTON ST @ CLARENDON ST | 0 | 0 | 4 | 0.1 | 0 | 4.1 | 0.3 | 0 | 4 | 0.3 | 0 | 4.8 | 0.5 | 0 | 4 |
| 20 - 144 - BOYLSTON ST @ BERKELEY ST | 0.1 | 0.1 | 4 | 0.1 | 0 | 4.1 | 0.1 | 0 | 4.1 | 0.1 | 0.1 | 4.9 | 0.1 | 0 | 4.1 |
| 21 - 145 - ARLINGTON ST @ SAINT JAMES AV | 0.3 | 0 | 4.3 | 0.6 | 0 | 4.6 | 0.7 | 0 | 4.7 | 0.7 | 0 | 5.6 | 0.6 | 0 | 4.7 |
| 22 - 146 - ARLINGTON ST @ ISABELLA ST | 0.1 | 0.1 | 4.3 | 0.6 | 0 | 5.2 | 0.7 | 0 | 5.3 | 0.6 | 0 | 6.2 | 0.6 | 0 | 5.3 |
| 23 - 147 - HERALD ST @ TREMONT ST | 0.3 | 0 | 4.7 | 0.5 | 0.1 | 5.6 | 0.3 | 0.1 | 5.6 | 0.5 | 0.2 | 6.5 | 0.7 | 0.1 | 5.8 |
| 24 - 148 - HERALD ST @ WASHINGTON ST | 0.6 | 0.3 | 5 | 0.8 | 0.5 | 5.9 | 0.6 | 0.7 | 5.4 | 0.9 | 0.9 | 6.5 | 0.7 | 0.4 | 6.1 |
| 25 - 11481 - HERALD ST @ HARRISON AVE | 1 | 0.2 | 5.8 | 0.6 | 0.2 | 6.3 | 0.2 | 0.2 | 5.4 | 0.4 | 0.3 | 6.6 | 0.5 | 0.3 | 6.3 |
| 26 - 151 - W BROADWAY @ BROADWAY STATION | 12.8 | 1.3 | 17.3 | 15.7 | 2.5 | 19.5 | 10.8 | 1.8 | 14.5 | 13.5 | 1.8 | 18.4 | 8.9 | 1.9 | 13.4 |
| 27 - 152 - W BROADWAY @ A ST | 0.2 | 0.1 | 17.4 | 0.3 | 0.1 | 19.8 | 0.2 | 0 | 14.7 | 0.4 | 0 | 18.7 | 0.1 | 0 | 13.5 |
| 28 - 153 - W BROADWAY @ B ST | 0.1 | 0.1 | 17.3 | 0.1 | 0.1 | 19.8 | 0.2 | 0.1 | 14.8 | 0.3 | 0.1 | 18.9 | 0.2 | 0.1 | 13.6 |
| 29 - 11532 - W BROADWAY @ LINSKY BARRY CT | 0.3 | 4.4 | 13.2 | 0.9 | 6.1 | 14.5 | 0.9 | 5.4 | 10.2 | 0.9 | 7.3 | 12.5 | 0.5 | 4.4 | 9.7 |
| 30 - 154 - W BROADWAY @ D ST | 0 | 0.1 | 13.1 | 0 | 0 | 14.5 | 0 | 0 | 10.2 | 0 | 0 | 12.5 | 0 | 0 | 9.7 |
| 31 - 155 - W BROADWAY @ E ST | 0.1 | 0.8 | 12.4 | 0.1 | 0.8 | 13.9 | 0 | 0.8 | 9.4 | 0.2 | 1.3 | 11.4 | 0.2 | 1.1 | 8.7 |
| 32 - 156 - W BROADWAY @ F ST | 0.3 | 2.8 | 9.9 | 0.2 | 4 | 10 | 0.1 | 2 | 7.5 | 0.1 | 2.7 | 8.8 | 0.1 | 1.7 | 7.2 |
| 33 - 157 - W BROADWAY @ DORCHESTER ST | 0.2 | 2.1 | 8 | 0.1 | 1.5 | 8.6 | 0.2 | 0.9 | 6.8 | 0.5 | 1.4 | 8 | 0.3 | 1.3 | 6.2 |
| 34 - 21 - E BROADWAY @ G ST | 0.1 | 1.4 | 6.6 | 0.2 | 1.5 | 7.4 | 0.2 | 1 | 6.1 | 0.3 | 1.3 | 7 | 0.2 | 0.9 | 5.4 |
| 35 - 22 - E BROADWAY @ H ST | 0.3 | 0.3 | 6.6 | 0.1 | 0.6 | 6.8 | 0.1 | 0.5 | 5.6 | 0.1 | 1.1 | 6.1 | 0.1 | 0.5 | 5 |
| 36 - 23 - E BROADWAY @ I ST | 0 | 0.8 | 5.8 | 0 | 1.5 | 5.3 | 0 | 1.2 | 4.5 | 0 | 1.6 | 4.5 | 0 | 1.2 | 3.8 |
| 37 - 24 - E BROADWAY @ K ST | 0 | 2.2 | 3.8 | 0.1 | 2.4 | 2.9 | 0 | 1.3 | 3.2 | 0 | 2 | 2.5 | 0 | 1.6 | 2.3 |
| 38 - 25 - E BROADWAY @ L ST | | | | | | | | | | | | | | | |
| 39 - 26 - E BROADWAY @ M ST | | | | | | | | | | | | | | | |
| 40 - 27 - E BROADWAY @ N ST | | | | | | | | | | | | | | | |
| 41 - 28 - E BROADWAY @ O ST | | | | | | | | | | | | | | | |
| 42 - 29 - E BROADWAY @ P ST | | | | | | | | | | | | | | | |
| 43 - 30 - E BROADWAY @ FARRAGUT RD | | | | | | | | | | | | | | | |
| 44 - 32 - FARRAGUT RD OPP E 2ND ST | | | | | | | | | | | | | | | |
| 45 - 10031 - E 1ST ST @ P ST | | | | | | | | | | | | | | | |
| 46 - 10032 - E 1ST ST OPP O ST | | | | | | | | | | | | | | | |
| 47 - 886 - L ST @ BROADWAY | 0 | 2.1 | 2 | 0 | 1.9 | 1 | 0 | 1.7 | 1.5 | 0 | 2.1 | 0.5 | 0 | 1.1 | 1.2 |
| 48 - 8851 - EAST 1ST ST @ M ST | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0.1 | 1.4 | 0 | 0 | 0.5 | 0 | 0 | 1.2 |
| 49 - 33 - CITY POINT BUS TERMINAL | 0 | 2.5 | 0 | 0 | 0.9 | 0.1 | 0 | 1.4 | 0 | 0 | 0.4 | 0.1 | 0 | 1.2 | 0 |
| Maximum | | | 17.4 | | | 19.8 | | | 14.8 | | | 18.9 | | | 13.6 |
| Total | 20.8 | 21.7 | | 24.8 | 24.7 | | 19.1 | 19.2 | | 23.9 | 24.6 | | 17.8 | 17.8 | |
| | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 38 | 30 |

| Seq - StopID - Stop Name | 08:27A On | 08:27A Off | 08:27A Load | 08:32A On | 08:32A Off | 08:32A Load | 08:41A On | 08:41A Off | 08:41A Load | 08:49A On | 08:49A Off | 08:49A Load | 08:59A On | 08:59A Off | 08:59A Load |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 08:10 (9.1)(B124) [66] [FA17] | | | 08:15 (9.1)(B070) [69] [FA17] | | | 08:24 (9.1)(B073) [59] [FA17] | | | 08:32 (9.1)(B060) [65] [FA17] | | | 08:40 (9.1)(B061) [10] [FA17] | | |
| - 34 - | | | | | | | | | | | | | | | |
| 1 - 11780 - AVE LOUIS PASTEUR @ LONGWOOD | | | | | | | | | | | | | | | |
| 2 - 11781 - AVE LOUIS PASTEUR @ THE FENWA | | | | | | | | | | | | | | | |
| 3 - 1784 - RUGGLES ST @ HUNTINGTON AVE | | | | | | | | | | | | | | | |
| 4 - 1785 - RUGGLES ST @ ANNUNCIATION RD | | | | | | | | | | | | | | | |
| 5 - 17861 - RUGGLES UPPER BUSWAY | | | | | | | | | | | | | | | |
| 6 - 1226 - TREMONT ST @ RUGGLES ST | | | | | | | | | | | | | | | |
| 7 - 77777 - MELNEA CASS BLVD @ WASHINGTON | | | | | | | | | | | | | | | |
| 8 - 6 - MELNEA CASS BLVD @ HARRISON A | | | | | | | | | | | | | | | |
| 9 - 5089 - 91 E CONCORD ST | | | | | | | | | | | | | | | |
| 10 - 25089 - ALBANY ST @ BOSTON MEDICAL CT | | | | | | | | | | | | | | | |
| 11 - 855 - MASSACHUSETTS AVE @ ALBANY ST | | | | | | | | | | | | | | | |
| 12 - 8 - MASSACHUSETTS AVE @ ISLAND ST | | | | | | | | | | | | | | | |
| 13 - 10 - THEO GLYNN WAY @ NEWMARKET SQ | | | | | | | | | | | | | | | |
| 14 - 10010 - SOUTHAMPTON ST @ NEWMARKET ST | | | | | | | | | | | | | | | |
| 15 - 13 - ANDREW STATION BUSWAY | | | | | | | | | | | | | | | |
| 16 - 30294 - 250 DORCHESTER AVENUE | | | | | | | | | | | | | | | |
| 17 - 150 - BROADWAY STATION - RED LINE | | | | | | | | | | | | | | | |
| 18 - 175 - BOYLSTON ST @ DARTMOUTH ST | 2.4 | 0 | 3 | 3.8 | 0 | 4 | 5.6 | 0 | 5.8 | 4.9 | 0 | 5.2 | 7.6 | 0 | 7.6 |
| 19 - 143 - BOYLSTON ST @ CLARENDON ST | 0.3 | 0 | 2.7 | 0.3 | 0 | 4.3 | 0.3 | 0 | 6.1 | 0.4 | 0 | 5.3 | 0.9 | 0 | 8.5 |
| 20 - 144 - BOYLSTON ST @ BERKELEY ST | 0.2 | 0 | 2.8 | 0.2 | 0 | 4.4 | 0.8 | 0.1 | 6.9 | 0.9 | 0 | 6.2 | 0.6 | 0.1 | 9 |
| 21 - 145 - ARLINGTON ST @ SAINT JAMES AV | 0.2 | 0 | 3 | 0.3 | 0 | 4.7 | 0.3 | 0.1 | 7.2 | 0.3 | 0 | 6.4 | 1.1 | 0.1 | 10 |
| 22 - 146 - ARLINGTON ST @ ISABELLA ST | 0.2 | 0 | 3.2 | 0.1 | 0 | 4.8 | 0.3 | 0.1 | 7.4 | 0.1 | 0 | 6.4 | 0.2 | 0 | 10.2 |
| 23 - 147 - HERALD ST @ TREMONT ST | 0.4 | 0.1 | 3.5 | 0.3 | 0.1 | 5 | 0.5 | 0.1 | 7.8 | 0.5 | 0.2 | 6.8 | 0.8 | 0.7 | 10.3 |
| 24 - 148 - HERALD ST @ WASHINGTON ST | 0.6 | 0.4 | 3.6 | 0.5 | 0.3 | 5.2 | 1.2 | 0.4 | 8.6 | 0.8 | 0.6 | 6.9 | 0.5 | 0.8 | 10 |
| 25 - 11481 - HERALD ST @ HARRISON AVE | 0.3 | 0.3 | 3.7 | 0.5 | 0.3 | 5.4 | 0.7 | 0.5 | 8.8 | 0.4 | 0.7 | 6.6 | 0.2 | 1.1 | 9.1 |
| 26 - 151 - W BROADWAY @ BROADWAY STATION | 8.1 | 1.4 | 10.4 | 7.9 | 1.7 | 11.6 | 9.3 | 3.1 | 15.1 | 10 | 3 | 13.6 | 11.3 | 4.3 | 16.1 |
| 27 - 152 - W BROADWAY @ A ST | 0.3 | 0 | 10.7 | 0.1 | 0 | 11.6 | 0.4 | 0.1 | 15.4 | 0.1 | 0 | 13.7 | 0 | 0.1 | 16 |
| 28 - 153 - W BROADWAY @ B ST | 0.2 | 0.2 | 10.6 | 0.2 | 0.1 | 11.7 | 0.2 | 0.2 | 15.3 | 0.2 | 0.2 | 13.8 | 0.6 | 0.1 | 16.5 |
| 29 - 11532 - W BROADWAY @ LINSKY BARRY CT | 0.5 | 3.7 | 7.5 | 0.7 | 3.2 | 9.2 | 1 | 2.6 | 13.7 | 0.8 | 1.9 | 12.6 | 0.6 | 1.1 | 16 |
| 30 - 154 - W BROADWAY @ D ST | 0 | 0.2 | 7.4 | 0 | 0.1 | 9.1 | 0 | 0 | 13.7 | 0 | 0 | 12.6 | 0 | 0 | 16 |
| 31 - 155 - W BROADWAY @ E ST | 0.3 | 1.1 | 6.6 | 0.3 | 0.7 | 8.8 | 0.3 | 1.3 | 12.6 | 0.2 | 1.6 | 11.2 | 0.1 | 2.7 | 13.4 |
| 32 - 156 - W BROADWAY @ F ST | 0.1 | 1.8 | 5 | 0.1 | 2 | 6.9 | 0.2 | 2.6 | 10.3 | 0.2 | 2.8 | 8.7 | 0.3 | 2.6 | 11.1 |
| 33 - 157 - W BROADWAY @ DORCHESTER ST | 0.2 | 1.2 | 4 | 0.2 | 0.9 | 6.1 | 0.1 | 1.7 | 8.7 | 0.4 | 1.8 | 7.3 | 0.2 | 1.6 | 9.7 |
| 34 - 21 - E BROADWAY @ G ST | 0.1 | 0.7 | 3.4 | 0.2 | 0.6 | 5.7 | 0.3 | 1.2 | 7.8 | 0.3 | 1.3 | 6.3 | 0.1 | 1.5 | 8.3 |
| 35 - 22 - E BROADWAY @ H ST | 0 | 0.7 | 2.8 | 0 | 0.5 | 5.3 | 0 | 0.8 | 7 | 0.1 | 0.9 | 5.5 | 0 | 1.2 | 7.1 |
| 36 - 23 - E BROADWAY @ I ST | 0 | 1 | 2 | 0 | 1.1 | 4.2 | 0 | 1.1 | 5.9 | 0 | 0.7 | 4.8 | 0.1 | 1 | 6.2 |
| 37 - 24 - E BROADWAY @ K ST | 0 | 1 | 1.2 | 0 | 1.2 | 3 | 0 | 1.7 | 4.2 | 0 | 1.8 | 3.1 | 0 | 2.2 | 4 |
| 38 - 25 - E BROADWAY @ L ST | | | | | | | | | | | | | | | |
| 39 - 26 - E BROADWAY @ M ST | | | | | | | | | | | | | | | |
| 40 - 27 - E BROADWAY @ N ST | | | | | | | | | | | | | | | |
| 41 - 28 - E BROADWAY @ O ST | | | | | | | | | | | | | | | |
| 42 - 29 - E BROADWAY @ P ST | | | | | | | | | | | | | | | |
| 43 - 30 - E BROADWAY @ FARRAGUT RD | | | | | | | | | | | | | | | |
| 44 - 32 - FARRAGUT RD OPP E 2ND ST | | | | | | | | | | | | | | | |
| 45 - 10031 - E 1ST ST @ P ST | | | | | | | | | | | | | | | |
| 46 - 10032 - E 1ST ST OPP O ST | | | | | | | | | | | | | | | |
| 47 - 886 - L ST @ BROADWAY | 0 | 1.1 | 0.5 | 0 | 1.8 | 1.2 | 0 | 2.7 | 1.5 | 0 | 2.4 | 1.2 | 0 | 2 | 2 |
| 48 - 8851 - EAST 1ST ST @ M ST | 0 | 0 | 0.5 | 0 | 0 | 1.2 | 0 | 0 | 1.5 | 0 | 0 | 1.2 | 0 | 0 | 2 |
| 49 - 33 - CITY POINT BUS TERMINAL | 0 | 1.1 | 0 | 0 | 1.2 | 0.1 | 0 | 1.5 | 0 | 0 | 1.8 | 0 | 0 | 2 | 0 |
| Maximum | | | 10.7 | | | 11.7 | | | 15.4 | | | 13.8 | | | 16.5 |
| Total | 14.4 | 16 | | 15.7 | 15.8 | | 21.5 | 21.9 | | 20.6 | 21.7 | | 25.2 | 25.2 | |
| | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |

E Broadway @ L St

| Seq - StopID - Stop Name | 05:02P On | 05:02P Off | 05:02P Load | 05:11P On | 05:11P Off | 05:11P Load | 05:20P On | 05:20P Off | 05:20P Load | 05:27P On | 05:27P Off | 05:27P Load | 05:33P On | 05:33P Off | 05:33P Load |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 16:35 (9.0)(B072) [58] [FA17] | | | 16:44 (9.0)(B077) [59] [FA17] | | | 16:53 (9.0)(B078) [61] [FA17] | | | 17:00 (9.0)(B079) [62] [FA17] | | | 17:06 (9.0)(B080) [62] [FA17] | | |
| - 34 - | | | | | | | | | | | | | | | |
| 1 - 11780 - AVE LOUIS PASTEUR @ LONGWOOD | | | | | | | | | | | | | | | |
| 2 - 11781 - AVE LOUIS PASTEUR @ THE FENWA | | | | | | | | | | | | | | | |
| 3 - 1784 - RUGGLES ST @ HUNTINGTON AVE | | | | | | | | | | | | | | | |
| 4 - 1785 - RUGGLES ST @ ANNUNCIATION RD | | | | | | | | | | | | | | | |
| 5 - 17861 - RUGGLES UPPER BUSWAY | | | | | | | | | | | | | | | |
| 6 - 1226 - TREMONT ST @ RUGGLES ST | | | | | | | | | | | | | | | |
| 7 - 77777 - MELNEA CASS BLVD @ WASHINGTON | | | | | | | | | | | | | | | |
| 8 - 6 - MELNEA CASS BLVD @ HARRISON A | | | | | | | | | | | | | | | |
| 9 - 5089 - 91 E CONCORD ST | | | | | | | | | | | | | | | |
| 10 - 25089 - ALBANY ST @ BOSTON MEDICAL CT | | | | | | | | | | | | | | | |
| 11 - 855 - MASSACHUSETTS AVE @ ALBANY ST | | | | | | | | | | | | | | | |
| 12 - 8 - MASSACHUSETTS AVE @ ISLAND ST | | | | | | | | | | | | | | | |
| 13 - 10 - THEO GLYNN WAY @ NEWMARKET SQ | | | | | | | | | | | | | | | |
| 14 - 10010 - SOUTHAMPTON ST @ NEWMARKET ST | | | | | | | | | | | | | | | |
| 15 - 13 - ANDREW STATION BUSWAY | | | | | | | | | | | | | | | |
| 16 - 30294 - 250 DORCHESTER AVENUE | | | | | | | | | | | | | | | |
| 17 - 150 - BROADWAY STATION - RED LINE | | | | | | | | | | | | | | | |
| 18 - 175 - BOYLSTON ST @ DARTMOUTH ST | 16.1 | 0 | 20 | 13.3 | 0 | 16 | 15.4 | 0 | 15.4 | 14.5 | 0 | 17.5 | 12.2 | 0 | 12.2 |
| 19 - 143 - BOYLSTON ST @ CLARENDON ST | 5.4 | 0.1 | 25.4 | 3.7 | 0 | 19.3 | 4.5 | 0.1 | 19.8 | 4.9 | 0.1 | 22.2 | 7.9 | 0 | 20.1 |
| 20 - 144 - BOYLSTON ST @ BERKELEY ST | 2.5 | 0.1 | 27.8 | 2.6 | 0.1 | 21.8 | 3.5 | 0.1 | 23.8 | 3.2 | 0.1 | 25.3 | 4.1 | 0.1 | 24.7 |
| 21 - 145 - ARLINGTON ST @ SAINT JAMES AV | 6 | 0.2 | 33.6 | 5.8 | 0.2 | 27.2 | 6.5 | 0.4 | 29.6 | 5.5 | 0.1 | 30.7 | 7.5 | 0.2 | 31.7 |
| 22 - 146 - ARLINGTON ST @ ISABELLA ST | 2.1 | 0.1 | 35.6 | 2 | 0.2 | 29.1 | 2.4 | 0.1 | 31.9 | 2.4 | 0.1 | 33 | 2.7 | 0.1 | 34.4 |
| 23 - 147 - HERALD ST @ TREMONT ST | 1.5 | 0.6 | 36.4 | 0.8 | 0.4 | 29.5 | 1.5 | 0.4 | 33 | 1 | 0.2 | 33.7 | 1.7 | 0.5 | 35.5 |
| 24 - 148 - HERALD ST @ WASHINGTON ST | 2.7 | 1.2 | 37.9 | 2.9 | 1.3 | 31.1 | 4.3 | 1.3 | 36 | 3 | 0.9 | 35.9 | 3.5 | 0.8 | 38.3 |
| 25 - 11481 - HERALD ST @ HARRISON AVE | 1.9 | 0.9 | 38.9 | 1.7 | 0.4 | 32.4 | 2.9 | 1.1 | 37.8 | 2.1 | 1.4 | 36.6 | 2.6 | 0.8 | 40.1 |
| 26 - 151 - W BROADWAY @ BROADWAY STATION | 15.6 | 8.1 | 46.4 | 13.5 | 8.1 | 37.7 | 17 | 8.2 | 46.5 | 14.1 | 7.5 | 43.2 | 16.6 | 7.9 | 48.8 |
| 27 - 152 - W BROADWAY @ A ST | 0.3 | 0.1 | 46.6 | 0.6 | 0.1 | 38.2 | 0.4 | 0.4 | 46.5 | 0.4 | 0.2 | 43.4 | 0.6 | 0.2 | 49.2 |
| 28 - 153 - W BROADWAY @ B ST | 0.8 | 1.9 | 45.4 | 0.4 | 1.1 | 37.5 | 0.7 | 1.3 | 46 | 0.7 | 1.5 | 42.5 | 0.6 | 1 | 48.9 |
| 29 - 11532 - W BROADWAY @ LINSKY BARRY CT | 1.4 | 3.9 | 42.9 | 0.9 | 3.4 | 35 | 1.4 | 3.2 | 44.2 | 1.2 | 2.7 | 41 | 1.2 | 2.6 | 47.5 |
| 30 - 154 - W BROADWAY @ D ST | 0 | 0 | 42.9 | 0 | 0 | 35.1 | 0 | 0 | 44.2 | 0 | 0 | 41 | 0 | 0 | 47.5 |
| 31 - 155 - W BROADWAY @ E ST | 0.8 | 3.2 | 40.5 | 0.5 | 3.5 | 32.1 | 0.8 | 3.8 | 41.2 | 1 | 4.4 | 37.6 | 0.9 | 4.4 | 44 |
| 32 - 156 - W BROADWAY @ F ST | 1.1 | 5.4 | 36.2 | 0.7 | 3.9 | 28.9 | 1.3 | 5.4 | 37.1 | 0.7 | 4.9 | 33.4 | 1 | 5.5 | 39.5 |
| 33 - 157 - W BROADWAY @ DORCHESTER ST | 0.6 | 4.2 | 32.6 | 0.5 | 4.1 | 25.3 | 0.7 | 3.9 | 33.9 | 0.6 | 3.4 | 30.7 | 0.7 | 5.2 | 35 |
| 34 - 21 - E BROADWAY @ G ST | 0.3 | 3.9 | 29.1 | 0.2 | 2.9 | 22.6 | 0.3 | 4 | 30.1 | 0.3 | 4 | 27 | 0.3 | 4.1 | 31.2 |
| 35 - 22 - E BROADWAY @ H ST | 0.1 | 2.8 | 26.4 | 0.1 | 2.7 | 19.9 | 0.2 | 3.8 | 26.6 | 0.2 | 3.8 | 23.5 | 0.2 | 3.6 | 27.8 |
| 36 - 23 - E BROADWAY @ I ST | 0.1 | 4.2 | 22.3 | 0.1 | 3.1 | 16.9 | 0.1 | 4.3 | 22.3 | 0.3 | 4.3 | 19.5 | 0.2 | 5.1 | 22.9 |
| 37 - 24 - E BROADWAY @ K ST | 0.1 | 6.6 | 15.8 | 0 | 4.9 | 12.1 | 0.1 | 7 | 15.4 | 0.1 | 5.8 | 13.7 | 0.1 | 7.1 | 15.9 |
| 38 - 25 - E BROADWAY @ L ST | 0.3 | 3.9 | 12.2 | 0.2 | 2.7 | 9.7 | 0.1 | 3.7 | 11.8 | 0.2 | 3.5 | 10.4 | 0.3 | 4.9 | 11.3 |
| 39 - 26 - E BROADWAY @ M ST | 0 | 3.6 | 8.7 | 0 | 2.3 | 7.4 | 0 | 2.4 | 9.4 | 0 | 2.1 | 8.3 | 0 | 2.4 | 8.9 |
| 40 - 27 - E BROADWAY @ N ST | 0 | 2.6 | 6.1 | 0 | 2.1 | 5.3 | 0 | 2.5 | 7 | 0 | 2.2 | 6.2 | 0 | 2.1 | 6.8 |
| 41 - 28 - E BROADWAY @ O ST | 0 | 2.4 | 3.7 | 0.1 | 2.5 | 2.9 | 0.1 | 2.1 | 4.9 | 0 | 2.2 | 4 | 0 | 1.9 | 4.9 |
| 42 - 29 - E BROADWAY @ P ST | 0 | 1.6 | 2.1 | 0 | 1.4 | 1.5 | 0 | 2.2 | 2.7 | 0 | 2 | 2 | 0 | 2.5 | 2.5 |
| 43 - 30 - E BROADWAY @ FARRAGUT RD | 0 | 0.3 | 1.8 | 0 | 0.3 | 1.2 | 0 | 0.3 | 2.4 | 0 | 0.3 | 1.8 | 0 | 0.2 | 2.3 |
| 44 - 32 - FARRAGUT RD OPP E 2ND ST | 0 | 0.1 | 1.7 | 0 | 0.3 | 1 | 0.1 | 0.3 | 2.3 | 0 | 0.3 | 1.6 | 0.1 | 0.3 | 2 |
| 45 - 10031 - E 1ST ST @ P ST | 0.1 | 0.3 | 1.5 | 0 | 0.2 | 0.9 | 0.1 | 0.4 | 1.9 | 0.2 | 0.3 | 1.5 | 0.1 | 0.2 | 2 |
| 46 - 10032 - E 1ST ST OPP O ST | 0 | 0.4 | 1.1 | 0 | 0.2 | 0.7 | 0 | 0.2 | 1.8 | 0 | 0.2 | 1.3 | 0 | 0.3 | 1.6 |
| 47 - 886 - L ST @ BROADWAY | | | | | | | | | | | | | | | |
| 48 - 8851 - EAST 1ST ST @ M ST | | | | | | | | | | | | | | | |
| 49 - 33 - CITY POINT BUS TERMINAL | 0 | 0.9 | 0.2 | 0 | 0.5 | 0.1 | 0 | 1.5 | 0.3 | 0 | 1.1 | 0.2 | 0 | 1.5 | 0.2 |
| Maximum | | | 46.6 | | | 38.2 | | | 46.5 | | | 43.4 | | | 49.2 |
| Total | 59.8 | 63.6 | | 50.6 | 52.9 | | 64.4 | 64.4 | | 56.6 | 59.6 | | 65.1 | 65.5 | |

| Seq - StopID - Stop Name | 05:39P On | 05:39P Off | 05:39P Load | 05:45P On | 05:45P Off | 05:45P Load | 05:51P On | 05:51P Off | 05:51P Load | 05:57P On | 05:57P Off | 05:57P Load |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 17:12 (9.0)(B081) [51] [FA17] | | | 17:18 (9.0)(B082) [31] [FA17] | | | 17:24 (9.0)(B083) [61] [FA17] | | | 17:30 (9.0)(B084) [40] [FA17] | | |
| - 34 - | | | | | | | | | | | | |
| 1 - 11780 - AVE LOUIS PASTEUR @ LONGWOOD | | | | | | | | | | | | |
| 2 - 11781 - AVE LOUIS PASTEUR @ THE FENWA | | | | | | | | | | | | |
| 3 - 1784 - RUGGLES ST @ HUNTINGTON AVE | | | | | | | | | | | | |
| 4 - 1785 - RUGGLES ST @ ANNUNCIATION RD | | | | | | | | | | | | |
| 5 - 17861 - RUGGLES UPPER BUSWAY | | | | | | | | | | | | |
| 6 - 1226 - TREMONT ST @ RUGGLES ST | | | | | | | | | | | | |
| 7 - 77777 - MELNEA CASS BLVD @ WASHINGTON | | | | | | | | | | | | |
| 8 - 6 - MELNEA CASS BLVD @ HARRISON A | | | | | | | | | | | | |
| 9 - 5089 - 91 E CONCORD ST | | | | | | | | | | | | |
| 10 - 25089 - ALBANY ST @ BOSTON MEDICAL CT | | | | | | | | | | | | |
| 11 - 855 - MASSACHUSETTS AVE @ ALBANY ST | | | | | | | | | | | | |
| 12 - 8 - MASSACHUSETTS AVE @ ISLAND ST | | | | | | | | | | | | |
| 13 - 10 - THEO GLYNN WAY @ NEWMARKET SQ | | | | | | | | | | | | |
| 14 - 10010 - SOUTHAMPTON ST @ NEWMARKET ST | | | | | | | | | | | | |
| 15 - 13 - ANDREW STATION BUSWAY | | | | | | | | | | | | |
| 16 - 30294 - 250 DORCHESTER AVENUE | | | | | | | | | | | | |
| 17 - 150 - BROADWAY STATION - RED LINE | | | | | | | | | | | | |
| 18 - 175 - BOYLSTON ST @ DARTMOUTH ST | 16.4 | 0 | 19.6 | 16.4 | 0 | 16.5 | 27.6 | 0 | 29.3 | 16.2 | 0 | 16.3 |
| 19 - 143 - BOYLSTON ST @ CLARENDON ST | 5.5 | 0.1 | 25.2 | 5.8 | 0.1 | 25.1 | 4.5 | 0 | 33.7 | 5.8 | 0.1 | 22 |
| 20 - 144 - BOYLSTON ST @ BERKELEY ST | 3.8 | 0.1 | 28.6 | 3.7 | 0 | 31.7 | 2.5 | 0.2 | 36 | 3.1 | 0 | 26.8 |
| 21 - 145 - ARLINGTON ST @ SAINT JAMES AV | 5.8 | 0.3 | 34.2 | 5.7 | 0.3 | 34.7 | 3.9 | 0.2 | 39.7 | 6.4 | 0.2 | 31.5 |
| 22 - 146 - ARLINGTON ST @ ISABELLA ST | 1.9 | 0.1 | 35.9 | 1.5 | 0.2 | 31.5 | 1.2 | 0.1 | 40.9 | 1.9 | 0.2 | 33.3 |
| 23 - 147 - HERALD ST @ TREMONT ST | 1 | 0.5 | 36.4 | 1.5 | 0.4 | 32.6 | 1.1 | 0.3 | 41.7 | 1.7 | 0.4 | 34.6 |
| 24 - 148 - HERALD ST @ WASHINGTON ST | 2.1 | 0.8 | 37.7 | 1.7 | 0.5 | 33.8 | 1.8 | 0.7 | 42.8 | 1.9 | 0.5 | 36 |
| 25 - 11481 - HERALD ST @ HARRISON AVE | 2.1 | 1.1 | 38.7 | 2.4 | 1.1 | 35 | 1.7 | 1.1 | 43.4 | 1.9 | 0.7 | 37.2 |
| 26 - 151 - W BROADWAY @ BROADWAY STATION | 13.5 | 7.3 | 44.9 | 16.8 | 7.6 | 44.5 | 11 | 7.8 | 46.6 | 16 | 8.4 | 44.7 |
| 27 - 152 - W BROADWAY @ A ST | 0.4 | 0.2 | 45.1 | 0.2 | 0.1 | 44.6 | 0.4 | 0.2 | 46.8 | 0.3 | 0.1 | 44.9 |
| 28 - 153 - W BROADWAY @ B ST | 0.5 | 1.1 | 44.5 | 0.4 | 0.6 | 44.4 | 0.5 | 1.1 | 46.2 | 0.5 | 1 | 44.4 |
| 29 - 11532 - W BROADWAY @ LINSKY BARRY CT | 1.2 | 3.2 | 42.5 | 2 | 2.5 | 43.9 | 1.1 | 2.9 | 44.3 | 1 | 3 | 42.5 |
| 30 - 154 - W BROADWAY @ D ST | 0 | 0 | 42.5 | 0 | 0 | 43.9 | 0 | 0 | 44.3 | 0 | 0 | 42.5 |
| 31 - 155 - W BROADWAY @ E ST | 1 | 4.3 | 39.2 | 1.3 | 4.4 | 40.9 | 1.4 | 3.9 | 41.8 | 1.3 | 4.2 | 39.6 |
| 32 - 156 - W BROADWAY @ F ST | 0.5 | 3.9 | 35.9 | 1.6 | 5.5 | 37 | 0.7 | 3.3 | 39.1 | 0.8 | 5 | 35.5 |
| 33 - 157 - W BROADWAY @ DORCHESTER ST | 0.7 | 4.5 | 32.1 | 1.4 | 4.6 | 33.7 | 0.7 | 4.5 | 35.3 | 0.7 | 3.7 | 32.5 |
| 34 - 21 - E BROADWAY @ G ST | 0.3 | 3.5 | 28.8 | 0.4 | 2.9 | 31.3 | 0.4 | 3.7 | 32 | 0.5 | 4 | 29 |
| 35 - 22 - E BROADWAY @ H ST | 0.2 | 3.5 | 25.5 | 0.3 | 3.9 | 27.6 | 0.4 | 3.9 | 28.4 | 0.1 | 3.7 | 25.5 |
| 36 - 23 - E BROADWAY @ I ST | 0.3 | 4.9 | 20.9 | 0.3 | 4.3 | 23.6 | 0.1 | 4.9 | 23.7 | 0.2 | 4.8 | 20.9 |
| 37 - 24 - E BROADWAY @ K ST | 0.1 | 6.2 | 14.7 | 0.1 | 7.7 | 16.1 | 0.1 | 7 | 16.8 | 0.1 | 7.2 | 13.8 |
| 38 - 25 - E BROADWAY @ L ST | 0.1 | 3.6 | 11.3 | 0.2 | 3.8 | 12.4 | 0.4 | 4.6 | 12.5 | 0.2 | 4 | 10 |
| 39 - 26 - E BROADWAY @ M ST | 0 | 2.1 | 9.1 | 0.1 | 2.2 | 10.4 | 0.1 | 2.6 | 10 | 0 | 1.7 | 8.3 |
| 40 - 27 - E BROADWAY @ N ST | 0 | 2.7 | 6.5 | 0 | 3.3 | 7.1 | 0 | 2.8 | 7.2 | 0 | 2.8 | 5.6 |
| 41 - 28 - E BROADWAY @ O ST | 0.2 | 2.5 | 4.1 | 0 | 1.8 | 5.4 | 0 | 2.4 | 4.8 | 0 | 2.1 | 3.5 |
| 42 - 29 - E BROADWAY @ P ST | 0.1 | 1.9 | 2.2 | 0 | 2.5 | 2.9 | 0 | 2.3 | 2.6 | 0 | 1.5 | 2.1 |
| 43 - 30 - E BROADWAY @ FARRAGUT RD | 0 | 0.5 | 1.8 | 0 | 0.4 | 2.5 | 0 | 0.4 | 2.1 | 0 | 0.2 | 1.9 |
| 44 - 32 - FARRAGUT RD OPP E 2ND ST | 0.1 | 0.4 | 1.4 | 0 | 0.4 | 2.1 | 0 | 0.3 | 1.8 | 0 | 0.3 | 1.6 |
| 45 - 10031 - E 1ST ST @ P ST | 0 | 0.2 | 1.3 | 0.2 | 0.2 | 2.2 | 0.1 | 0.1 | 1.8 | 0.1 | 0.1 | 1.6 |
| 46 - 10032 - E 1ST ST OPP O ST | 0 | 0.2 | 1.1 | 0 | 0.5 | 1.6 | 0 | 0.3 | 1.6 | 0 | 0.3 | 1.4 |
| 47 - 886 - L ST @ BROADWAY | | | | | | | | | | | | |
| 48 - 8851 - EAST 1ST ST @ M ST | | | | | | | | | | | | |
| 49 - 33 - CITY POINT BUS TERMINAL | 0 | 0.9 | 0.3 | 0 | 0.6 | 1.1 | 0 | 1.5 | 0.1 | 0 | 1.1 | 0.2 |
| Maximum | | | 45.1 | | | 44.6 | | | 46.8 | | | 44.9 |
| Total | 57.8 | 60.6 | | 64 | 62.4 | | 61.7 | 63.1 | | 60.7 | 61.3 | |

08:03A 08:08A 08:14A 08:20A 08:26A 08:27A 08:32A 08:41A 08:49A 08:59A

05:02P 05:11P 05:20P 05:27P 05:33P 05:39P 05:45P 05:51P 05:57P

Massachusetts Bay Transportation Authority
Route 10
Weekday - Inbound

(Urban Transportation Associates)

| | 8:09AM | | | 8:30AM | | | 8:49AM | | | 5:18PM | | | 5:43PM | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 08:05 (10.0)(B100) [64] {FA17} | | | 08:25 (10.0)(B098) [60] {FA17} | | | 08:45 (10.9)(B096) [55] {FA17} | | | 17:15 (10.9)(B102) [68] {FA17} | | | 17:40 (10.9)(B103) [60] {FA17} | | |
| Seq - StopID - Stop Name | On | Off | Load | On | Off | Load | On | Off | Load | On | Off | Load | On | Off | Load |
| 1 - 33 - CITY POINT BUS TERMINAL | 0.4 | 0 | 0.4 | 0.2 | 0 | 0.5 | 0.9 | 0 | 0.9 | 1.1 | 0 | 1.2 | 1.2 | 0 | 1.3 |
| 2 - 10033 - E 1ST ST @ O ST | 0.2 | 0 | 0.6 | 0.2 | 0 | 0.3 | 0.2 | 0 | 1.2 | 0 | 0 | 1.2 | 0.1 | 0 | 1.3 |
| 3 - 34 - P ST @ E 2ND ST | 0.2 | 0 | 0.8 | 0.1 | 0 | 0.4 | 0 | 0 | 1.3 | 0 | 0 | 1.2 | 0 | 0 | 1.3 |
| 4 - 35 - P ST @ E BROADWAY | 1 | 0 | 1.7 | 1.1 | 0 | 1.4 | 0.5 | 0 | 1.7 | 0.3 | 0 | 1.5 | 0.4 | 0 | 1.7 |
| 5 - 895 - E BROADWAY @ N ST | 0.6 | 0 | 2.3 | 1.3 | 0 | 2.7 | 0.9 | 0 | 2.6 | 0.3 | 0 | 1.8 | 0.2 | 0 | 1.9 |
| 6 - 896 - E BROADWAY @ M ST | 0.3 | 0 | 2.6 | 0.1 | 0 | 2.6 | 0.2 | 0 | 2.5 | 0.1 | 0 | 1.9 | 0 | 0 | 1.9 |
| 7 - 41 - E BROADWAY @ L ST | 1.1 | 0 | 3.7 | 0.6 | 0 | 3.1 | 0.9 | 0 | 3.4 | 1.1 | 0 | 3 | 0.8 | 0 | 2.7 |
| 8 - 42 - E BROADWAY @ K ST | 0.8 | 0 | 4.4 | 1.3 | 0 | 4.6 | 1 | 0 | 4.3 | 1.6 | 0 | 4.6 | 1.2 | 0 | 3.9 |
| 9 - 43 - E BROADWAY @ I ST | 1.7 | 0 | 6.1 | 2.3 | 0 | 6.9 | 1.6 | 0 | 5.9 | 0.9 | 0 | 5.5 | 0.5 | 0.1 | 4.3 |
| 10 - 44 - E BROADWAY @ H ST | 0.9 | 0 | 7 | 1 | 0 | 7.8 | 0.2 | 0 | 6.1 | 0.3 | 0.1 | 5.7 | 0.2 | 0.1 | 4.5 |
| 11 - 45 - E BROADWAY @ G ST | 0.8 | 0 | 7.7 | 0.6 | 0 | 8.4 | 0.3 | 0.1 | 6.3 | 0.6 | 0.1 | 6.2 | 0.3 | 0 | 4.8 |
| 12 - 46 - DORCHESTER ST @ BROADWAY | 1.5 | 0.1 | 9.2 | 0.7 | 0.3 | 8.8 | 1.2 | 0.1 | 7.4 | 1.9 | 0.3 | 7.8 | 2.6 | 0.3 | 7.1 |
| 13 - 47 - DORCHESTER ST @ W 5TH ST | 1.1 | 0 | 10.3 | 0.6 | 0 | 9.4 | 0.4 | 0 | 7.8 | 0.2 | 0.2 | 7.8 | 0.3 | 0.1 | 7.4 |
| 14 - 48 - DORCHESTER ST @ W 6TH ST | 0.8 | 0 | 11.1 | 0.6 | 0.1 | 9.9 | 0.4 | 0.1 | 8.2 | 0.6 | 0.3 | 8.1 | 0.6 | 0.3 | 7.7 |
| 15 - 49 - DORCHESTER ST @ W 8TH ST | 1.6 | 0.1 | 12.6 | 1.6 | 0.1 | 11.5 | 1.5 | 0.2 | 9.4 | 0.6 | 0.6 | 8 | 0.6 | 0.7 | 7.6 |
| 16 - 50 - DORCHESTER ST @ OLD COLONY AV | 1 | 0.2 | 13.4 | 1.9 | 0.2 | 13.3 | 1.2 | 0.1 | 10.5 | 0.6 | 0.6 | 8.1 | 0.5 | 0.5 | 7.7 |
| 17 - 51 - DORCHESTER ST @ MIDDLE ST | 0.6 | 0.1 | 13.9 | 0 | 0 | 13.3 | 0.5 | 0.3 | 10.7 | 0 | 0.1 | 8 | 0.1 | 0.3 | 7.5 |
| 18 - 52 - DORCHESTER ST @ DORCHESTER AV | 1 | 4.4 | 10.5 | 0.2 | 3.5 | 9.9 | 0.1 | 2.3 | 8.4 | 0.1 | 1.8 | 6.3 | 0.1 | 1.5 | 6.1 |
| 19 - 13 - ANDREW STATION BUSWAY | 15.2 | 1.6 | 24 | 15.5 | 2.6 | 22.8 | 14.7 | 1.8 | 21.3 | 7 | 2.6 | 10.8 | 7.1 | 1.9 | 11.3 |
| 20 - 11241 - SOUTH BAY MALL @ TARGET | . | . | . | . | . | . | 0.1 | 0.8 | 20.6 | 0.3 | 1.7 | 9.4 | 0.2 | 1.9 | 9.6 |
| 21 - 11242 - SOUTH BAY MALL @ OFFICE MAX | . | . | . | . | . | . | 0.2 | 0.7 | 20.2 | 0.5 | 0.8 | 9.1 | 0.8 | 1.1 | 9.3 |
| 22 - 11243 - SOUTH BAY MALL @ STOP AND SHO | . | . | . | . | . | . | 1.8 | 1.4 | 20.6 | 2.1 | 1.7 | 9.5 | 2.8 | 2.2 | 9.9 |
| 23 - 9955 - 240 SOUTHAMPTON ST | 0.1 | 0.7 | 23.4 | 0 | 1 | 21.9 | . | . | . | . | . | . | . | . | . |
| 24 - 128 - 1010 MASSACHUSETTS AVE OPP MA | 2.6 | 3.5 | 22.4 | 1.8 | 4.9 | 18.8 | 3.2 | 4.3 | 19.5 | 1.6 | 0.7 | 10.3 | 1 | 0.6 | 10.3 |
| 25 - 9960 - MASSACHUSETTS AVE @ THEO GLYN | 0.4 | 1.4 | 21.4 | 0.3 | 0.3 | 18.8 | 0.7 | 0.3 | 19.8 | 0.3 | 0.3 | 10.3 | 0.4 | 0.3 | 10.5 |
| 26 - 10 - THEO GLYNN WAY @ NEWMARKET SQ | 0 | 0 | 21.4 | 0 | 0 | 18.8 | 0 | 0 | 19.8 | 0 | 0 | 10.3 | 0 | 0 | 10.5 |
| 27 - 56 - SOUTHAMPTON ST @ ATKINSON ST | 2.1 | 3.3 | 20.3 | 1.3 | 3.2 | 16.8 | 1.5 | 2.4 | 18.9 | 0.9 | 0.8 | 10.3 | 0.3 | 0.9 | 9.9 |
| 28 - 10014 - ALBANY ST OPP BOSTON MEDICAL | 0.3 | 3.5 | 17.1 | 0.3 | 5.1 | 12.1 | 0.8 | 3.8 | 15.9 | 0.4 | 1.4 | 9.2 | 0.2 | 1.3 | 8.8 |
| 29 - 10005 - ALBANY ST OPP E CONCORD ST | 0.8 | 2.7 | 15.1 | 0.9 | 2.7 | 10.3 | 0.6 | 2.9 | 13.5 | 1.9 | 0.4 | 10.7 | 1.6 | 0.2 | 10.2 |
| 30 - 5090 - 88 E NEWTON ST | 1 | 2.7 | 13.3 | 1.1 | 1.8 | 9.5 | 1 | 1.8 | 12.7 | 4.3 | 0.3 | 14.7 | 3.7 | 0.5 | 13.4 |
| 31 - 5091 - E NEWTON ST @ HARRISON AVE | 0.8 | 0.2 | 14 | 0.4 | 0.1 | 9.7 | 0.2 | 0.3 | 12.6 | 0.7 | 0.4 | 15.1 | 0.4 | 0.6 | 13.3 |
| 32 - 9421 - E NEWTON ST @ WASHINGTON ST | 0.8 | 0.6 | 14.2 | 0.5 | 0.9 | 9.3 | 0.4 | 2 | 11 | 0.7 | 1.5 | 14.3 | 0.4 | 1.6 | 12.1 |
| 33 - 1381 - W DEDHAM ST @ WASHINGTON ST | 1.3 | 0.6 | 14.9 | 1 | 0.5 | 9.8 | 1.3 | 0.9 | 11.5 | 1.7 | 0.6 | 15.4 | 1.8 | 0.9 | 12.9 |
| 34 - 1382 - 43 W DEDHAM ST | 0.4 | 0.1 | 15.2 | 0.4 | 0.4 | 9.8 | 0.3 | 0.5 | 11.2 | 0.1 | 0.2 | 15.3 | 0.6 | 0.5 | 13 |
| 35 - 1383 - DARTMOUTH ST @ TREMONT ST | 1.1 | 0.5 | 15.8 | 1 | 0.3 | 10.5 | 0.4 | 0.8 | 10.9 | 0.4 | 0.3 | 15.4 | 0.2 | 0.4 | 12.8 |
| 36 - 1384 - DARTMOUTH ST @ APPLETON ST | 0.2 | 0.4 | 15.5 | 0.1 | 0.1 | 10.4 | 0 | 0.3 | 10.6 | 0 | 0.6 | 14.8 | 0.2 | 0.4 | 12.5 |
| 37 - 11384 - DARTMOUTH ST @ BACK BAY STA | 0.1 | 8.5 | 7.1 | 0.1 | 6 | 4.5 | 0.1 | 5 | 5.6 | 0.1 | 8.6 | 6.3 | 0.2 | 7.6 | 5.1 |
| 38 - 178 - SAINT JAMES AVE @ DARTMOUTH S | 0 | 7 | 0 | 0 | 4.4 | 0 | 0 | 5.5 | 0.1 | 0 | 6.2 | 0.1 | 0 | 5.1 | 0.1 |
| 39 - 10101 - MELNEA CASS BLVD @ HARRISON A | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 40 - 62 - WASHINGTON ST @ WILLIAMS ST | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 41 - 63 - WASHINGTON ST @ RUGGLES ST | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 42 - 64 - DUDLEY STATION | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| Maximum | | | 24 | | | 22.8 | | | 21.3 | | | 15.4 | | | 13.4 |
| Total | 42.8 | 42.2 | | 39.1 | 38.5 | | 39.3 | 38.7 | | 33.3 | 33.2 | | 31.6 | 31.9 | |
| | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | | | | | | |

Massachusetts Bay Transportation Authority
Route 10
Weekday - Outbound

(Urban Transportation Associates)

| | 8:14AM | | | 8:34AM | | | 8:57AM | | | 5:15PM | | | 5:39PM | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Trip (RouteVar)(Block) [Observations] | | | | | | | | | | | | | | | | | |
| | 07:40 (10.0)(B098) [60] {FA17} | | | 07:40 (10.4)(B067) [28] {FA17} | | | 07:50 (10.3)(B172) [60] {FA17} | | | 16:34 (10.9)(B126) [58] {FA17} | | | 16:58 (10.9)(B104) [62] {FA17} | | | Total | | |
| Seq - StopID - Stop Name | On | Off | Load | On | Off | Load | On | Off | Load | On | Off | Load | On | Off | Load | On | Off | Load |
| 1 - 13321 - TOWNSEND ST @ WARREN ST | | | | | | | | | | | | | | | | 43.1 | 0 | 43.1 |
| 2 - 392 - WARREN ST @ MAYWOOD ST | | | | | | | | | | | | | | | | 0 | 0 | 43.6 |
| 3 - 393 - WARREN ST @ WOODBINE ST | | | | | | | | | | | | | | | | 0.2 | 0 | 43.8 |
| 4 - 394 - WARREN ST @ WAVERLY ST | | | | | | | | | | | | | | | | 0 | 0.1 | 43.3 |
| 5 - 395 - WARREN ST @ WHITING ST | | | | | | | | | | | | | | | | 0 | 0 | 43.3 |
| 6 - 396 - WARREN ST @ MORELAND ST | | | | | | | | | | | | | | | | 0 | 0 | 43.2 |
| 7 - 21151 - WARREN ST @ KEARSARGE AVE | | | | | | | | | | | | | | | | 0 | 0 | 43.1 |
| 8 - 64 - DUDLEY STATION | | | | | | | | | | | | | | | | 0.1 | 0.1 | 43.1 |
| 9 - 1 - WASHINGTON ST OPP RUGGLES ST | | | | | | | | | | | | | | | | 0.3 | 0.1 | 43.2 |
| 10 - 2 - WASHINGTON ST @ MELNEA CASS B | | | | | | | | | | | | | | | | 0.8 | 0.2 | 44.1 |
| 11 - 4 - WASHINGTON ST @ LENOX ST | | | | | | | | | | | | | | | | 0 | 0 | 46.5 |
| 12 - 5 - WASHINGTON ST @ MASSACHUSETTS | | | | | | | | | | | | | | | | 0.1 | 0.3 | 27.9 |
| 13 - 1787 - WASHINGTON ST @ WORCESTER ST | | | | | | | | | | | | | | | | 1 | 0 | 3.7 |
| 14 - 1788 - WASHINGTON ST @ E NEWTON ST | | | | | | | | | | | | | | | | 0 | 0 | 4 |
| 15 - 1789 - WASHINGTON ST @ MYSTIC ST | | | | | | | | | | | | | | | | 0 | 0 | 4 |
| 16 - 175 - BOYLSTON ST @ DARTMOUTH ST | | | | | | | | | | | | | | | | 1.8 | 0 | 2 |
| 17 - 143 - BOYLSTON ST @ CLARENDON ST | | | | | | | | | | | | | | | | 0 | 0 | 2 |
| 18 - 178 - SAINT JAMES AVE @ DARTMOUTH S | 4.1 | 0 | 4.1 | | | | 2.8 | 0 | 2.8 | 8 | 0 | 8.1 | 7.2 | 0 | 7.4 | 217.8 | 0 | 223.9 |
| 19 - 176 - DARTMOUTH ST OPP BACK BAY STA | 11.4 | 0.1 | 15.4 | | | | 7.8 | 0.2 | 10.5 | 5.6 | 0.1 | 13.4 | 6.6 | 0.2 | 13.7 | 287.4 | 4.6 | 506.6 |
| 20 - 1395 - DARTMOUTH ST @ APPLETON ST | 1.2 | 0 | 16.9 | | | | 0.7 | 0.1 | 11.3 | 0.1 | 0 | 13.5 | 0.2 | 0 | 13.9 | 11.8 | 1.1 | 517.8 |
| 21 - 1396 - DARTMOUTH ST @ TREMONT ST | 0.6 | 0.2 | 17.3 | | | | 0.5 | 0.1 | 11.7 | 0.4 | 0.6 | 13.3 | 0.4 | 0.6 | 13.7 | 16.2 | 14.3 | 520.5 |
| 22 - 1397 - OPP 43 W DEDHAM ST | 0.5 | 0.4 | 17.5 | | | | 0.2 | 0.3 | 11.5 | 0.4 | 1 | 12.7 | 0.6 | 0.8 | 13.5 | 14.2 | 20.3 | 514.6 |
| 23 - 1398 - W DEDHAM ST @ WASHINGTON ST | 1.2 | 0.3 | 18.3 | | | | 1 | 0.5 | 12 | 1 | 1.8 | 11.8 | 0.9 | 1.6 | 12.8 | 33.3 | 39.7 | 508.1 |
| 24 - 21158 - HARRISON AVE. OPP PLYMPTON ST | 0.4 | 1.8 | 16.9 | | | | 0.6 | 1.4 | 11.1 | 0.3 | 0.3 | 11.8 | 0.6 | 0.5 | 12.9 | 15.3 | 32.2 | 495.3 |
| 25 - 11158 - HARRISON AVE @ E BROOKLINE ST | 0.3 | 1.7 | 15.4 | | | | 0.3 | 1.2 | 10.1 | 1.2 | 0.5 | 12.5 | 1 | 0.4 | 13.5 | 17.5 | 39.6 | 473.5 |
| 26 - 10015 - HARRISON AVE @ E NEWTON ST | 0.2 | 2.5 | 13.1 | | | | 0.1 | 2 | 8.3 | 2 | 0.8 | 13.7 | 0.5 | 0.5 | 13.5 | 14.2 | 47.1 | 435.1 |
| 27 - 5089 - 91 E CONCORD ST | 0.7 | 6.4 | 7.4 | | | | 0.7 | 2.8 | 6.2 | 7.5 | 1.1 | 20.1 | 6.3 | 1.1 | 18.6 | 122.4 | 91 | 471.2 |
| 28 - 855 - MASSACHUSETTS AVE @ ALBANY ST | 1.8 | 0.9 | 8.3 | | | | 1.1 | 0.4 | 6.9 | 3.3 | 0.8 | 22.7 | 5.1 | 0.7 | 23 | 95.2 | 35.1 | 569.5 |
| 29 - 8 - MASSACHUSETTS AVE @ ISLAND ST | 0.4 | 0.4 | 8.3 | | | | 0.2 | 0.8 | 6.3 | 0.2 | 0.6 | 22.2 | 0.5 | 0.8 | 22.8 | 14.7 | 29.6 | 555.1 |
| 30 - 20009 - MASSACHUSETTS AVE @ PEIRSON S | 0.2 | 0.4 | 8.1 | | | | 0.2 | 0.5 | 6 | 0.4 | 0.5 | 22.1 | 0.6 | 0.4 | 23 | 11.4 | 18.2 | 548.4 |
| 31 - 30009 - MASSACHUSETTS AVE @ MAGAZINE | 1.4 | 2.7 | 6.9 | | | | 1.2 | 1.8 | 5.4 | 2.8 | 1.5 | 23.4 | 3.5 | 1.1 | 25.4 | 42 | 63.6 | 505.4 |
| 32 - 131 - MASSACHUSETTS AVE @ SHIRLEY S | 0 | 0.1 | 6.7 | | | | 0 | 0 | 6.5 | 0.4 | 2 | 21.8 | 0.2 | 0.7 | 24.9 | 6.6 | 13.9 | 475.9 |
| 33 - 40009 - NEWMARKET ST @ MASSACHUSETTS | 0 | 0 | 6.7 | | | | 0 | 0 | 6.5 | | | | | | | 0 | 0 | 58.9 |
| 34 - 10010 - SOUTHAMPTON ST @ NEWMARKET ST | 0.1 | 0.5 | 6.2 | | | | 0.1 | 0.5 | 5.1 | | | | | | | 1.5 | 2.8 | 102.5 |
| 35 - 29050 - SOUTH BAY MALL @ STOP AND SHO | | | | | | | | | | 2.6 | 4.1 | 20.4 | 3.3 | 3.9 | 24.3 | 60.6 | 80.3 | 397.4 |
| 36 - 29051 - SOUTH BAY MALL @ OFFICE MAX | | | | | | | | | | 1.7 | 1.2 | 20.9 | 2.8 | 1.2 | 25.8 | 43.4 | 27.2 | 413.6 |
| 37 - 29052 - SOUTH BAY MALL @ TARGET | | | | | | | | | | 1.3 | 0.7 | 21.5 | 1.7 | 0.4 | 27.1 | 24.4 | 11.1 | 426.1 |
| 38 - 13 - ANDREW STATION BUSWAY | 4.5 | 3 | 7.8 | 10.8 | 0 | 10.8 | 0 | 4.9 | 0.2 | 2.4 | 9.3 | 14.7 | 4.8 | 12.4 | 19.5 | 165.1 | 232.8 | 466.8 |
| 39 - 14 - DORCHESTER ST @ DORCHESTER AV | 1.7 | 0.4 | 9 | 1.6 | 0.1 | 12.4 | | | | 5.7 | 2.5 | 17.9 | 2.5 | 3.5 | 18.5 | 117.1 | 53.6 | 530.3 |
| 40 - 15 - DORCHESTER ST @ VINTON ST | 0.3 | 0 | 9.4 | 0.1 | 0.1 | 12.5 | | | | 0.2 | 0.4 | 17.7 | 0.1 | 0.3 | 18.4 | 5.9 | 10.1 | 526.8 |
| 41 - 16 - DORCHESTER ST @ OLD COLONY AV | 0.1 | 0.4 | 9 | 0.3 | 0.9 | 11.9 | | | | 0.5 | 2.6 | 15.6 | 0.4 | 3.3 | 15.5 | 15.5 | 56.7 | 485.4 |
| 42 - 17 - DORCHESTER ST @ E 8TH ST | 1.1 | 0.4 | 9.8 | 2 | 1.2 | 12.8 | | | | 0.4 | 2.8 | 13.3 | 0.5 | 2.6 | 13.5 | 24.6 | 78 | 432.3 |
| 43 - 18 - 180 DORCHESTER ST OPP W 7TH S | 0.2 | 0.4 | 9.5 | 0.1 | 0.4 | 12.5 | | | | 0.1 | 0.7 | 12.7 | 0.2 | 0.8 | 12.8 | 2.3 | 15.8 | 419.2 |
| 44 - 19 - DORCHESTER ST @ OLD HARBOR ST | 0.1 | 0.5 | 9.2 | 0.2 | 1 | 11.7 | | | | 0 | 0.5 | 12.2 | 0.1 | 0.9 | 12 | 1.9 | 32.2 | 389.5 |
| 45 - 20 - DORCHESTER ST @ E BROADWAY | 0.1 | 1.8 | 7.5 | 0.3 | 0.6 | 11.4 | | | | 0.2 | 1.8 | 10.6 | 0.2 | 2.5 | 9.8 | 7.5 | 77.8 | 320.1 |
| 46 - 21 - E BROADWAY @ G ST | 0.2 | 3.3 | 4.4 | 0.2 | 5.4 | 6.3 | | | | 0 | 0.5 | 10.1 | 0 | 0.6 | 9.2 | 4.7 | 76.4 | 249.7 |
| 47 - 22 - E BROADWAY @ H ST | 0.3 | 0.5 | 4.2 | 0.3 | 0.3 | 6.3 | | | | 0.1 | 1 | 9.1 | 0 | 0.9 | 8.4 | 1.9 | 20.2 | 231.6 |
| 48 - 23 - E BROADWAY @ I ST | 0.1 | 1 | 3.2 | 0.1 | 1.3 | 5 | | | | 0.1 | 0.6 | 8.7 | 0 | 1 | 7.4 | 3.4 | 25.4 | 209.4 |
| 49 - 24 - E BROADWAY @ K ST | 0.1 | 1 | 2.3 | 0 | 1 | 4.1 | | | | 0.2 | 1.9 | 7 | 0 | 1.8 | 5.6 | 3.1 | 53 | 161.1 |
| 50 - 25 - E BROADWAY @ L ST | 0.2 | 0.9 | 1.5 | 0.1 | 1.7 | 2.5 | | | | 0.2 | 1.1 | 6.2 | 0.1 | 0.9 | 4.9 | 5 | 37.1 | 130.3 |
| 51 - 26 - E BROADWAY @ M ST | 0 | 0.1 | 1.4 | 0 | 0.3 | 2.3 | | | | 0 | 0.4 | 5.9 | 0 | 0.2 | 4.7 | 0.1 | 12.2 | 119.9 |
| 52 - 27 - E BROADWAY @ N ST | 0 | 0.2 | 1.3 | 0 | 0.3 | 2 | | | | 0 | 0.3 | 5.6 | 0 | 0.6 | 4.1 | 5.9 | 21.3 | 107.2 |
| 53 - 28 - E BROADWAY @ O ST | 0 | 0.7 | 0.7 | 0 | 1.2 | 0.8 | | | | 0 | 1 | 4.7 | 0.1 | 1 | 3.3 | 1.9 | 21.7 | 88.5 |
| 54 - 29 - E BROADWAY @ P ST | 0.2 | 0 | 0.9 | 0 | 0.2 | 0.6 | | | | 0 | 0.6 | 4.1 | 0 | 0.6 | 2.8 | 18 | 16 | 90.3 |
| 55 - 30 - E BROADWAY @ FARRAGUT RD | 0 | 0.1 | 0.5 | 0 | 0.1 | 0.4 | | | | 0 | 0.2 | 4 | 0 | 0.1 | 2.6 | 0.1 | 6.6 | 67.4 |
| 56 - 32 - FARRAGUT RD OPP E 2ND ST | 0 | 0.2 | 0.3 | 0 | 0.2 | 0.2 | | | | 0 | 0.1 | 3.9 | 0 | 0.3 | 2.4 | 0.5 | 6.5 | 61.8 |
| 57 - 10031 - E 1ST ST @ P ST | 0 | 0.1 | 0.3 | 0 | 0 | 0.2 | | | | 0 | 0 | 3.9 | 0.1 | 0.2 | 2.3 | 1.6 | 1.6 | 61.2 |
| 58 - 10032 - E 1ST ST OPP O ST | 0 | 0 | 0.2 | 0 | 0.1 | 0.1 | | | | 0 | 0 | 3.9 | 0 | 0.2 | 2.1 | 0 | 4.2 | 57.9 |
| 59 - 33 - CITY POINT BUS TERMINAL | 0 | 0.1 | 0.4 | 0 | 0.1 | 0 | | | | 0 | 4.6 | 0 | 0 | 1.9 | 0.2 | 0 | 44.8 | 33.7 |
| Maximum | | | 18.3 | | | 12.8 | | | 12 | | | 23.4 | | | 27.1 | | | 569.5 |
| Total | 33.7 | 33.5 | | 16.1 | 16.5 | | 17.5 | 17.5 | | 49.3 | 50.5 | | 51.1 | 51.5 | | 1483.4 | 1476.5 | |
| | 40 | 40 | 40 | 40 | 45 | 39 | 40 | 40 | 40 | | | | | | | | | |

Massachusetts Bay Transportation Authority
Route 11
Weekday - Inbound

(Urban Transportation Associates)

Trip (RouteVar)(Block) [Observations]

| Seq - StopID - Stop Name | 08:00 (11.4)(B116) [62] {FA17} | | | 08:06 (11.3)(B117) [64] {FA17} | | | 08:12 (11.4)(B094) [62] {FA17} | | | 08:18 (11.3)(B064) [46] {FA17} | | | 08:24 (11.4)(B123) [73] {FA17} | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | On | Off | Load | On | Off | Load | On | Off | Load | On | Off | Load | On | Off | Load |
| 1 - 33 - CITY POINT BUS TERMINAL | 0.9 | 0 | 0.9 | 1 | 0 | 1 | 0.6 | 0 | 0.6 | 1.3 | 0 | 1.3 | 0.9 | 0 | 0.9 |
| 2 - 10033 - E 1ST ST @ O ST | 0.1 | 0 | 1 | 0.2 | 0 | 1.2 | 0.1 | 0 | 0.6 | 0.1 | 0 | 1.4 | 0.2 | 0 | 1 |
| 3 - 34 - P ST @ E 2ND ST | 0.4 | 0 | 1.4 | 0.1 | 0 | 1.2 | 0.1 | 0 | 0.7 | 0 | 0 | 1.4 | 0.1 | 0 | 1.1 |
| 4 - 35 - P ST @ E BROADWAY | 0.3 | 0.1 | 1.6 | 1 | 0 | 2.3 | 0.3 | 0.1 | 0.9 | 0.2 | 0 | 1.6 | 0.2 | 0 | 1.3 |
| 5 - 295 - P ST @ E 5TH ST | 0.1 | 0 | 1.8 | 0.1 | 0 | 1.5 | 0.1 | 0 | 1 | 0.1 | 0 | 1.7 | 0.3 | 0 | 1.6 |
| 6 - 296 - P ST @ COLUMBIA RD | 0.8 | 0 | 2.5 | 0.9 | 0 | 2.4 | 1.1 | 0 | 2.1 | 0.3 | 0 | 2 | 0.2 | 0 | 1.8 |
| 7 - 275 - E 8TH @ COLUMBIA RD | 0.8 | 0 | 3.3 | 0.8 | 0 | 3.2 | 0.7 | 0 | 2.8 | 0.6 | 0 | 2.7 | 1 | 0 | 2.8 |
| 8 - 277 - E 8TH ST @ M ST | 1.1 | 0 | 4.4 | 1.4 | 0 | 4.6 | 1.6 | 0 | 4.4 | 1.8 | 0 | 4.5 | 2 | 0 | 4.8 |
| 9 - 278 - E 8TH ST @ L ST | 1.5 | 0 | 5.8 | 2.5 | 0 | 7.1 | 2.6 | 0 | 6.9 | 2 | 0 | 6.5 | 3.2 | 0 | 8.1 |
| 10 - 279 - E 8TH ST @ K ST | 3.4 | 0 | 9.2 | 3.4 | 0 | 10.5 | 3 | 0 | 9.9 | 1.5 | 0 | 8 | 3.3 | 0 | 11.4 |
| 11 - 280 - E 8TH ST @ I ST | 5.1 | 0 | 14.2 | 5.2 | 0.1 | 15.5 | 4.1 | 0 | 14 | 2.8 | 0 | 10.8 | 3.7 | 0 | 15 |
| 12 - 281 - E 8TH ST @ H ST | 7.1 | 0.1 | 21.3 | 8.4 | 0.1 | 23.8 | 6.2 | 0.1 | 19.9 | 3.5 | 0 | 14.3 | 5 | 0.2 | 19.8 |
| 13 - 282 - E 8TH ST @ G ST | 4.2 | 0.1 | 25.4 | 5.4 | 0.1 | 29.1 | 4.8 | 0.1 | 24.7 | 3.2 | 0 | 17.5 | 3.9 | 0 | 23.7 |
| 14 - 283 - E 8TH ST @ COVINGTON ST | 1.5 | 0 | 26.8 | 1.6 | 0 | 30.7 | 1.3 | 0 | 26.4 | 0.8 | 0 | 18.2 | 1.5 | 0 | 25.1 |
| 15 - 284 - E 8TH ST @ OLD HARBOR ST | 3.3 | 0 | 30.1 | 2.7 | 0.2 | 33.2 | 2.5 | 0 | 28.8 | 1.3 | 0 | 19.5 | 1.9 | 0 | 27 |
| 16 - 285 - E 8TH ST @ MERCER ST | 3.2 | 0.1 | 33.2 | 3.1 | 0.1 | 36.2 | 2.8 | 0.2 | 31.5 | 2.4 | 0 | 21.8 | 3.9 | 0.2 | 30.8 |
| 17 - 286 - E 8TH ST @ DORCHESTER ST | 3.1 | 0.2 | 36.1 | 2.4 | 0.3 | 38.2 | 2.5 | 0.3 | 33.7 | 2.3 | 0.1 | 24 | 2.4 | 0.3 | 33 |
| 18 - 18 - 180 DORCHESTER ST OPP W 7TH S | 1.2 | 0.1 | 37.3 | 0.9 | 0 | 39.1 | 1.6 | 0 | 35.3 | 1.2 | 0.1 | 25.2 | 1.3 | 0.1 | 34.2 |
| 19 - 30287 - W 6TH S @ DORCHESTER ST | 2.6 | 0.1 | 39.7 | 1.5 | 0 | 40.6 | 2 | 0 | 37.2 | 1.7 | 0 | 26.8 | 1.4 | 0.1 | 35.6 |
| 20 - 288 - W 6TH ST @ F ST | 2.7 | 0.1 | 42.4 | 1.9 | 0.1 | 42.4 | 1.7 | 0.1 | 38.2 | 1.7 | 0.2 | 28.4 | 2.1 | 0.2 | 37.5 |
| 21 - 289 - W 6TH ST @ E ST | 3.1 | 0.8 | 44.7 | 1.9 | 0 | 44.8 | 1.9 | 0 | 40.1 | 2.4 | 0.2 | 30.6 | 2.1 | 0.1 | 39.5 |
| 22 - 290 - W 6TH ST @ D ST | 1.9 | 0.9 | 45.6 | 2.1 | 1.7 | 44.8 | 2 | 1.3 | 40.8 | 1.5 | 0.8 | 31.4 | 1.3 | 0.9 | 39.9 |
| 23 - 291 - W 7TH ST @ D ST | 2.4 | 0.2 | 47.8 | 2.1 | 0.2 | 46.7 | 1.7 | 0.2 | 43 | 2.4 | 0.1 | 33.7 | 1.8 | 0.2 | 41.5 |
| 24 - 292 - W 7TH ST @ C ST | 0.6 | 0 | 48.3 | 0.4 | 0.1 | 47 | 0.5 | 0 | 43.5 | 0.7 | 0.1 | 34.3 | 0.6 | 0 | 42.1 |
| 25 - 293 - W 7TH @ B STREET | 0.8 | 0.1 | 49 | 0.6 | 0.1 | 47.5 | 0.5 | 0.1 | 43.8 | 0.4 | 0 | 34.7 | 0.4 | 0.1 | 42.4 |
| 26 - 30294 - 250 DORCHESTER AVENUE | 0 | 0 | 49 | 0 | 0.1 | 47.4 | 0 | 0.1 | 43.7 | 0 | 0 | 34.6 | 0.1 | 0.1 | 42.5 |
| 27 - 150 - BROADWAY STATION - RED LINE | 5.7 | 25.7 | 29.1 | 5.8 | 24.1 | 29.1 | 5.5 | 24 | 24.6 | 3.3 | 17.6 | 20.3 | 5.8 | 24 | 24.3 |
| 28 - 36538 - E BERKELEY ST @ HARRISON AVE | 0.3 | 1.6 | 27.8 | 0.5 | 1.5 | 28.1 | 0.1 | 1.9 | 22.9 | 0.3 | 1.5 | 19.1 | 0.2 | 1.7 | 22.8 |
| 29 - 36541 - E BERKELEY ST @ WASHINGTON ST | 1.3 | 3 | 26.4 | 2 | 3.1 | 26.9 | 1.7 | 2.8 | 21.8 | 1.5 | 1.9 | 19 | 1.3 | 2.5 | 21.6 |
| 30 - 15095 - WASHINGTON ST @ HERALD ST | 0.4 | 0.9 | 25.5 | 0.2 | 1 | 26.2 | 0.2 | 0.9 | 21.1 | 0.3 | 0.4 | 18.6 | 0.2 | 0.8 | 21 |
| 31 - 6565 - WASHINGTON ST @ TUFTS MED CTR | 0.3 | 7.3 | 18.5 | 0.7 | 6.3 | 20.5 | 0.3 | 7.1 | 14.3 | 0.5 | 5.7 | 13.4 | 0.4 | 8.2 | 13.1 |
| 32 - 6537 - WASHINGTON ST @ ESSEX ST | 0.1 | 6.3 | 12.4 | 0.4 | 4.9 | 16 | 0.2 | 4.8 | 9.7 | 0.3 | 3.9 | 9.8 | 0.2 | 4.1 | 9.2 |
| 33 - 16538 - BEDFORD ST @ CHAUNCY ST | 0 | 12.1 | 0.3 | 0 | 9.8 | 6.8 | 0 | 9.5 | 0.2 | 0 | 7.3 | 2.9 | 0 | 9.1 | 0.1 |
| Maximum | | | 49 | | | 47.5 | | | 43.8 | | | 34.7 | | | 42.5 |
| Total | 60.3 | 59.8 | | 61.2 | 53.9 | | 54.3 | 53.6 | | 42.4 | 39.9 | | 52.9 | 52.9 | |

| Seq - StopID - Stop Name | 08:30 (11.3)(B122) [60] {FA17} | | | 08:36 (11.4)(B027) [67] {FA17} | | | 08:42 (11.3)(B124) [64] {FA17} | | | 08:52 (11.3)(B028) [68] {FA17} | | | 17:10 (11.3)(B101) [56] {FA17} | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | On | Off | Load | On | Off | Load | On | Off | Load | On | Off | Load | On | Off | Load |
| 1 - 33 - CITY POINT BUS TERMINAL | 0.8 | 0 | 0.8 | 0.3 | 0 | 0.3 | 0.9 | 0 | 0.9 | 0.7 | 0 | 0.7 | 0.9 | 0 | 0.9 |
| 2 - 10033 - E 1ST ST @ O ST | 0.1 | 0 | 0.9 | 0.1 | 0 | 0.4 | 0 | 0 | 0.9 | 0 | 0 | 0.8 | 0 | 0 | 1 |
| 3 - 34 - P ST @ E 2ND ST | 0 | 0 | 0.9 | 0.1 | 0 | 0.5 | 0 | 0 | 0.9 | 0.3 | 0 | 1.1 | 0.1 | 0 | 1.1 |
| 4 - 35 - P ST @ E BROADWAY | 0.1 | 0 | 1 | 0 | 0 | 0.6 | 0.1 | 0 | 1.1 | 0.2 | 0 | 1.3 | 0.3 | 0 | 1.4 |
| 5 - 295 - P ST @ E 5TH ST | 0.3 | 0 | 1.3 | 0.1 | 0 | 0.7 | 0 | 0 | 1.1 | 0.1 | 0 | 1.3 | 0.1 | 0 | 1.6 |
| 6 - 296 - P ST @ COLUMBIA RD | 0.1 | 0 | 1.4 | 0.1 | 0 | 0.8 | 0.1 | 0 | 1.2 | 0.2 | 0 | 1.5 | 0.2 | 0 | 1.8 |
| 7 - 275 - E 8TH @ COLUMBIA RD | 0.5 | 0 | 1.9 | 0.6 | 0 | 1.4 | 0.4 | 0 | 1.6 | 0.8 | 0 | 2.3 | 0.2 | 0 | 1.9 |
| 8 - 277 - E 8TH ST @ M ST | 1.2 | 0 | 3.1 | 1.5 | 0 | 2.9 | 0.9 | 0 | 2.4 | 1.4 | 0 | 3.7 | 0.3 | 0 | 2.3 |
| 9 - 278 - E 8TH ST @ L ST | 1.5 | 0 | 4.6 | 1.5 | 0 | 4.4 | 0.8 | 0 | 3.2 | 1.5 | 0 | 5.2 | 0.6 | 0 | 2.9 |
| 10 - 279 - E 8TH ST @ K ST | 1.5 | 0 | 6 | 1 | 0 | 5.4 | 1 | 0 | 4.2 | 1.3 | 0 | 6.5 | 0.5 | 0 | 3.3 |
| 11 - 280 - E 8TH ST @ I ST | 1.7 | 0 | 7.7 | 2 | 0 | 7.4 | 1.1 | 0 | 5.3 | 1.5 | 0 | 8 | 0.8 | 0.1 | 4.1 |
| 12 - 281 - E 8TH ST @ H ST | 2.6 | 0.1 | 10.2 | 2.8 | 0 | 10.2 | 2.4 | 0 | 7.7 | 2.3 | 0.2 | 10.1 | 0.7 | 0.1 | 4.7 |
| 13 - 282 - E 8TH ST @ G ST | 2 | 0 | 12.2 | 2.1 | 0 | 12.3 | 1.5 | 0 | 9.2 | 2.2 | 0 | 12.3 | 0.3 | 0 | 5 |
| 14 - 283 - E 8TH ST @ COVINGTON ST | 0.5 | 0 | 12.7 | 0.6 | 0 | 12.9 | 0.4 | 0 | 9.5 | 1 | 0 | 13.3 | 0 | 0 | 5.1 |
| 15 - 284 - E 8TH ST @ OLD HARBOR ST | 1 | 0 | 13.7 | 1 | 0 | 13.9 | 0.5 | 0 | 10 | 1.1 | 0.1 | 14.3 | 0.3 | 0.1 | 5.3 |
| 16 - 285 - E 8TH ST @ MERCER ST | 1.8 | 0.1 | 15.4 | 2.2 | 0.1 | 16 | 1.5 | 0.1 | 11.3 | 2.2 | 0 | 16.5 | 0.7 | 0.1 | 6 |
| 17 - 286 - E 8TH ST @ DORCHESTER ST | 2.6 | 0.2 | 17.8 | 1.6 | 0.1 | 17.4 | 1.6 | 0.1 | 12.8 | 3.4 | 0.4 | 19.5 | 0.5 | 0.2 | 6.3 |
| 18 - 18 - 180 DORCHESTER ST OPP W 7TH S | 0.7 | 0 | 18.5 | 0.9 | 0 | 18.2 | 0.4 | 0 | 13.3 | 0.7 | 0 | 20.2 | 0.1 | 0 | 6.4 |
| 19 - 30287 - W 6TH S @ DORCHESTER ST | 1.5 | 0.2 | 19.9 | 1.1 | 0.1 | 19.3 | 0.9 | 0 | 14 | 2.1 | 0.2 | 22.2 | 0.3 | 0.2 | 6.4 |
| 20 - 288 - W 6TH ST @ F ST | 1.8 | 0 | 21.6 | 1.4 | 0.1 | 20.6 | 0.7 | 0 | 14.7 | 1.5 | 0.3 | 23.4 | 1 | 0.2 | 7.2 |
| 21 - 289 - W 6TH ST @ E ST | 1.8 | 0 | 23.4 | 1.6 | 0 | 22.2 | 1.2 | 0.1 | 15.8 | 2.5 | 0.1 | 25.9 | 0.1 | 0 | 7.3 |
| 22 - 290 - W 6TH ST @ D ST | 1.3 | 0.5 | 24.2 | 1.4 | 0.3 | 23.3 | 0.9 | 0.3 | 16.4 | 1.6 | 0.3 | 27.2 | 0.3 | 0.3 | 7.2 |
| 23 - 291 - W 7TH ST @ D ST | 2.1 | 0.1 | 26.2 | 2.3 | 0 | 25.4 | 2 | 0 | 18.4 | 2.2 | 0.1 | 29.3 | 0.2 | 0.1 | 7.5 |
| 24 - 292 - W 7TH ST @ C ST | 0.5 | 0 | 26.8 | 0.3 | 0 | 25.7 | 0.3 | 0 | 18.7 | 0.9 | 0.1 | 30.1 | 0.2 | 0.1 | 7.6 |
| 25 - 293 - W 7TH @ B STREET | 0.4 | 0.1 | 27.1 | 0.3 | 0 | 26 | 0.3 | 0 | 19 | 0.5 | 0.1 | 30.2 | 0.3 | 0.2 | 7.7 |
| 26 - 30294 - 250 DORCHESTER AVENUE | 0 | 0 | 27.1 | 0 | 0 | 26 | 0 | 0 | 18.9 | 0 | 0 | 30.5 | 0 | 0.1 | 7.6 |
| 27 - 150 - BROADWAY STATION - RED LINE | 4.5 | 14.2 | 17.4 | 4.2 | 14.7 | 15.6 | 3.6 | 9.8 | 12.8 | 4.2 | 15.4 | 19.3 | 1.1 | 3.1 | 5.4 |
| 28 - 36538 - E BERKELEY ST @ HARRISON AVE | 0.2 | 1.5 | 16.1 | 0.1 | 1.1 | 14.6 | 0.2 | 1.8 | 11.1 | 0.1 | 1.6 | 17.8 | 0.2 | 0.3 | 5.3 |
| 29 - 36541 - E BERKELEY ST @ WASHINGTON ST | 1.5 | 2 | 15.6 | 1.2 | 2.5 | 13.3 | 1 | 2 | 10.2 | 1.5 | 2 | 17.1 | 1.4 | 0.7 | 5.9 |
| 30 - 15095 - WASHINGTON ST @ HERALD ST | 0.3 | 0.8 | 15.1 | 0.4 | 0.7 | 12.9 | 0.1 | 0.7 | 9.6 | 0.5 | 0.4 | 17.1 | 1.1 | 0.3 | 6.7 |
| 31 - 6565 - WASHINGTON ST @ TUFTS MED CTR | 0.6 | 5.3 | 10.4 | 0.2 | 4.8 | 8.3 | 0.7 | 3.3 | 7 | 0.8 | 8.2 | 9.7 | 1.8 | 2.4 | 6.1 |
| 32 - 6537 - WASHINGTON ST @ ESSEX ST | 0.1 | 2.8 | 7.7 | 0 | 3.2 | 5.2 | 0.2 | 2.2 | 5.1 | 0.2 | 4 | 5.9 | 0.8 | 2 | 4.9 |
| 33 - 16538 - BEDFORD ST @ CHAUNCY ST | 0 | 4.4 | 3.6 | 0 | 5.1 | 0.1 | 0 | 2.8 | 2.4 | 0 | 5.8 | 0 | 0 | 1.4 | 3.6 |
| Maximum | | | 27.1 | | | 26 | | | 19 | | | 30.5 | | | 7.7 |
| Total | 35.6 | 32.3 | | 33 | 32.8 | | 25.7 | 23.2 | | 39.5 | 39.3 | | 15.4 | 12 | |

| Seq - StopID - Stop Name | 17:22 (11.3)(B125) [42] {FA17} | | | 17:35 (11.3)(B126) [57] {FA17} | | | 17:48 (11.3)(B127) [22] {FA17} | | | 17:59 (11.3)(B318) [20] {FA17} | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | On | Off | Load | On | Off | Load | On | Off | Load | On | Off | Load |
| 1 - 33 - CITY POINT BUS TERMINAL | 0.6 | 0 | 0.6 | 1.8 | 0 | 1.8 | 0.5 | 0 | 0.5 | 0.6 | 0 | 0.6 |
| 2 - 10033 - E 1ST ST @ O ST | 0.1 | 0 | 0.7 | 0.1 | 0 | 1.9 | 0 | 0 | 0.6 | 0.2 | 0 | 0.8 |
| 3 - 34 - P ST @ E 2ND ST | 0.1 | 0 | 0.7 | 0.1 | 0 | 2 | 0 | 0 | 0.6 | 0 | 0 | 0.8 |
| 4 - 35 - P ST @ E BROADWAY | 0.3 | 0 | 1 | 0.2 | 0 | 2.1 | 0.2 | 0 | 0.8 | 0.3 | 0 | 1.1 |
| 5 - 295 - P ST @ E 5TH ST | 0 | 0 | 1 | 0.2 | 0 | 2.4 | 0.1 | 0 | 1 | 0.1 | 0 | 1.1 |
| 6 - 296 - P ST @ COLUMBIA RD | 0.1 | 0 | 1.2 | 0.3 | 0 | 2.7 | 0 | 0 | 1 | 0.3 | 0 | 1.4 |
| 7 - 275 - E 8TH @ COLUMBIA RD | 0.1 | 0 | 1.3 | 0.3 | 0 | 3 | 0.4 | 0 | 1.4 | 0.5 | 0.1 | 1.8 |
| 8 - 277 - E 8TH ST @ M ST | 0.3 | 0 | 1.6 | 0.5 | 0 | 3.5 | 0.2 | 0 | 1.7 | 0.5 | 0 | 2.3 |
| 9 - 278 - E 8TH ST @ L ST | 0.5 | 0 | 2.1 | 0.5 | 0 | 4 | 0.5 | 0.1 | 2.1 | 0.7 | 0.1 | 2.9 |
| 10 - 279 - E 8TH ST @ K ST | 0.4 | 0 | 2.4 | 0.5 | 0 | 4.5 | 0.7 | 0 | 2.7 | 0.9 | 0.3 | 3.4 |
| 11 - 280 - E 8TH ST @ I ST | 0.5 | 0 | 3 | 0.5 | 0 | 5 | 0.8 | 0 | 3.4 | 0.4 | 0 | 3.8 |
| 12 - 281 - E 8TH ST @ H ST | 0.5 | 0 | 3.5 | 0.7 | 0.1 | 5.6 | 0.5 | 0 | 3.9 | 0.6 | 0 | 4.4 |
| 13 - 282 - E 8TH ST @ G ST | 0.2 | 0 | 3.7 | 0.2 | 0 | 5.8 | 0.2 | 0 | 4.1 | 0.2 | 0 | 4.6 |
| 14 - 283 - E 8TH ST @ COVINGTON ST | 0.1 | 0 | 3.8 | 0 | 0.1 | 5.9 | 0 | 0 | 4.4 | 0.1 | 0 | 4.7 |
| 15 - 284 - E 8TH ST @ OLD HARBOR ST | 0.2 | 0 | 3.9 | 0.2 | 0 | 6.1 | 0.2 | 0 | 4.6 | 0.4 | 0.2 | 4.9 |
| 16 - 285 - E 8TH ST @ MERCER ST | 0.3 | 0.1 | 4.1 | 0.9 | 0.1 | 6.8 | 0.3 | 0.1 | 4.9 | 0.6 | 0.1 | 5.4 |
| 17 - 286 - E 8TH ST @ DORCHESTER ST | 0.8 | 0.1 | 4.8 | 0.6 | 0.4 | 7.1 | 0.6 | 0 | 5.4 | 1 | 0.2 | 6.2 |
| 18 - 18 - 180 DORCHESTER ST OPP W 7TH S | 0 | 0 | 4.8 | 0 | 0.1 | 7 | 0 | 0 | 5.4 | 0.1 | 0 | 6.3 |
| 19 - 30287 - W 6TH S @ DORCHESTER ST | 0.2 | 0 | 5 | 0.2 | 0 | 7.1 | 0.3 | 0.1 | 5.1 | 0.3 | 0 | 6.5 |
| 20 - 288 - W 6TH ST @ F ST | 1.5 | 0.2 | 6.3 | 1.2 | 0.2 | 8.2 | 1.5 | 0.4 | 6.5 | 1.1 | 0.2 | 7.5 |
| 21 - 289 - W 6TH ST @ E ST | 0.3 | 0 | 6.5 | 0.4 | 0 | 8.5 | 0.3 | 0.1 | 6.4 | 0.3 | 0.1 | 7.7 |
| 22 - 290 - W 6TH ST @ D ST | 0.3 | 0.4 | 6.5 | 0.2 | 0.4 | 8.3 | 0.1 | 0.3 | 6.2 | 0.2 | 0.3 | 7.6 |
| 23 - 291 - W 7TH ST @ D ST | 0.5 | 0.1 | 6.9 | 0.4 | 0.1 | 8.7 | 0.4 | 0.1 | 7.1 | 0.4 | 0 | 8 |
| 24 - 292 - W 7TH ST @ C ST | 0.2 | 0.1 | 7 | 0 | 0.1 | 8.7 | 0.1 | 0 | 7.3 | 0.1 | 0.2 | 7.8 |
| 25 - 293 - W 7TH @ B STREET | 0.3 | 0.2 | 7.1 | 0.3 | 0.2 | 8.8 | 0.2 | 0.3 | 7.2 | 1.2 | 0.4 | 8.6 |
| 26 - 30294 - 250 DORCHESTER AVENUE | 0 | 0 | 7.1 | 0 | 0 | 8.8 | 0 | 0 | 7.2 | 0 | 0.1 | 8.5 |
| 27 - 150 - BROADWAY STATION - RED LINE | 1.1 | 3.1 | 5.2 | 1.3 | 3.5 | 6.5 | 0.9 | 3.2 | 4.3 | 1.4 | 2.7 | 7.2 |
| 28 - 36538 - E BERKELEY ST @ HARRISON AVE | 0 | 0.3 | 4.9 | 0.2 | 0.4 | 6.3 | 0.1 | 0.4 | 4 | 0 | 1 | 6.3 |
| 29 - 36541 - E BERKELEY ST @ WASHINGTON ST | 0.5 | 0.6 | 4.8 | 0.4 | 1.1 | 5.7 | 0.6 | 0.3 | 4.3 | 0.7 | 0.7 | 6.2 |
| 30 - 15095 - WASHINGTON ST @ HERALD ST | 0.7 | 0.3 | 5.2 | 0.3 | 0.2 | 5.8 | 0.4 | 0.3 | 4.4 | 0.4 | 0.1 | 6.6 |
| 31 - 6565 - WASHINGTON ST @ TUFTS MED CTR | 1.3 | 2.4 | 4.2 | 0.9 | 2.1 | 4.7 | 0.8 | 1.9 | 3.3 | 1.2 | 3 | 5 |
| 32 - 6537 - WASHINGTON ST @ ESSEX ST | 0.7 | 1.2 | 3.6 | 1 | 1.1 | 4.6 | 1.3 | 1.2 | 3.5 | 0.9 | 1.8 | 4.2 |
| 33 - 16538 - BEDFORD ST @ CHAUNCY ST | 0 | 1.1 | 2.6 | 0 | 0.9 | 3.8 | 0 | 1.3 | 2.7 | 0 | 1.3 | 3.1 |
| Maximum | | | 7.1 | | | 8.8 | | | 7.3 | | | 8.6 |
| Total | 12.7 | 10.2 | | 14.4 | 11.1 | | 12.2 | 10.1 | | 15.7 | 12.9 | |

Massachusetts Bay Transportation Authority
Route 11
Weekday - Outbound

(Urban Transportation Associates)

| | 8:11AM | | | | | | | | | | | 8:51AM | | | 5:04PM | | | | | | | | | | 5:58PM | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 07:44 (11.3)(B120) [72] {FA17} | | | 07:57 (11.3)(B122) [59] {FA17} | | | 08:10 (11.3)(B096) [53] {FA17} | | | 08:24 (11.3)(B113) [63] {FA17} | | | 16:30 (11.3)(B101) [58] {FA17} | | | 16:42 (11.3)(B096) [56] {FA17} | | | 16:54 (11.3)(B103) [60] {FA17} | | | 17:06 (11.3)(B130) [58] {FA17} | | | 17:18 (11.3)(B131) [62] {FA17} | | |
| Seq - StopID - Stop Name | On | Off | Load | On | Off | Load | On | Off | Load | On | Off | Load | On | Off | Load | On | Off | Load | On | Off | Load | On | Off | Load | On | Off | Load |
| 1 - 16538 - BEDFORD ST @ CHAUNCY ST | 1.2 | 0 | 10.1 | 0.6 | 0 | 4.7 | 0.6 | 0 | 10.7 | 1.3 | 0 | 13.8 | 4.8 | 0 | 10.4 | 4.6 | 0 | 10.9 | 5.3 | 0 | 7.7 | 6.9 | 0 | 12.3 | 8.9 | 0 | 12.5 |
| 2 - 6564 - SUMMER ST @ SOUTH STATION - R | 3 | 0.7 | 12.4 | 1.2 | 0.3 | 5.6 | 1.5 | 0.8 | 11.4 | 2.8 | 0.8 | 15.9 | 5.5 | 0.4 | 15.5 | 6.3 | 0.4 | 16.8 | 7.4 | 0.5 | 14.6 | 8.6 | 0.5 | 20.4 | 9.8 | 1 | 21.3 |
| 3 - 11219 - A ST @ NECCO ST | 0.1 | 1.3 | 11.3 | 0.1 | 0.3 | 5.4 | 0 | 0.5 | 10.9 | 0 | 1.2 | 14.6 | 1.1 | 0.4 | 16.2 | 0.8 | 0.5 | 17.1 | 0.9 | 0.2 | 15.4 | 1.6 | 0.3 | 21.7 | 1.3 | 0.4 | 22.3 |
| 4 - 11419 - A ST @ MT WASHINGTON AVE | 0 | 2.4 | 8.9 | 0.1 | 0.5 | 5 | 0.1 | 0.7 | 10.3 | 0 | 2.7 | 11.9 | 0.2 | 0.4 | 15.9 | 0.6 | 0.5 | 17.2 | 0.5 | 0.2 | 15.9 | 0.3 | 0.4 | 21.6 | 0.4 | 0.5 | 22.2 |
| 5 - 11319 - W SECOND ST OPP W THIRD ST | 0 | 0 | 8.9 | 0 | 0 | 5 | 0 | 0 | 10.3 | 0 | 0 | 11.9 | 0.1 | 0.3 | 15.8 | 0.2 | 0.4 | 17 | 0.5 | 0.3 | 16.2 | 0.3 | 0.3 | 21.5 | 0.2 | 0.4 | 21.9 |
| 7 - 151 - W BROADWAY @ BROADWAY STATION | 7.6 | 0.5 | 16.1 | 4.9 | 0.1 | 9.7 | 3 | 0.5 | 12.8 | 2.8 | 0.4 | 14.4 | 10.1 | 0.7 | 25.3 | 13.1 | 1.6 | 28.5 | 13.6 | 1 | 28.8 | 19.1 | 1.7 | 38.8 | 18.1 | 1.6 | 38.4 |
| 8 - 152 - W BROADWAY @ A ST | 0.1 | 0.3 | 15.8 | 0.4 | 0 | 10 | 0.3 | 0 | 13 | 0 | 0.1 | 14.3 | 0.1 | 0.1 | 25.3 | 0.1 | 0.1 | 28.5 | 0.2 | 0.1 | 28.9 | 0.3 | 0.1 | 39 | 0.4 | 0.2 | 38.7 |
| 9 - 249 - B ST @ SILVER ST | 0.2 | 1 | 15 | 0.2 | 0.5 | 9.7 | 0.2 | 0.6 | 12.6 | 0.1 | 0.4 | 14 | 0.3 | 1.2 | 24.4 | 0.7 | 0.8 | 28.5 | 0.3 | 0.8 | 28.4 | 0.2 | 0.6 | 38.6 | 0.5 | 1 | 38.2 |
| 10 - 250 - B ST @ W 5TH ST | 0 | 0.1 | 15 | 0.1 | 0 | 9.8 | 0.1 | 0 | 12.7 | 0.2 | 0.1 | 14.1 | 0 | 0.2 | 24.3 | 0 | 0.4 | 28.1 | 0.1 | 0.4 | 28 | 0.1 | 0.6 | 38.1 | 0 | 0.3 | 38 |
| 11 - 251 - B ST @ W 6TH ST | 0 | 0 | 15 | 0 | 0 | 9.8 | 0 | 0 | 12.7 | 0 | 0 | 14 | 0 | 0.2 | 24.1 | 0 | 0 | 28.1 | 0 | 0 | 28 | 0 | 0 | 38.1 | 0 | 0 | 38 |
| 12 - 269 - W 7TH ST @ B ST | 0.2 | 0.2 | 14.9 | 0 | 0.2 | 9.6 | 0 | 0.1 | 12.6 | 0 | 0 | 14 | 0.1 | 0.5 | 23.7 | 0.1 | 0.8 | 27.5 | 0.1 | 0.5 | 27.6 | 0.3 | 0.6 | 37.7 | 0.3 | 0.6 | 37.7 |
| 13 - 252 - W 7TH ST @ C ST | 0 | 0.3 | 14.7 | 0.1 | 0.2 | 9.5 | 0.2 | 0.1 | 12.7 | 0 | 0.3 | 13.7 | 0.1 | 1.1 | 22.7 | 0.3 | 0.9 | 26.9 | 0.3 | 1 | 26.9 | 0.4 | 1.4 | 36.7 | 0.3 | 0.9 | 37.1 |
| 14 - 253 - W 7TH ST @ D ST | 0.4 | 1.2 | 13.9 | 0.5 | 0.9 | 9.1 | 0.7 | 2.1 | 11.3 | 1.1 | 1.2 | 13.6 | 0.2 | 1.9 | 21.1 | 0.2 | 2 | 25 | 0.3 | 2.1 | 25.1 | 0.4 | 3.1 | 34.1 | 0.5 | 2.4 | 35.2 |
| 15 - 254 - W 7TH ST @ E ST | 0.1 | 0.3 | 13.8 | 0 | 0.2 | 8.9 | 0 | 0.3 | 11.1 | 0 | 0.2 | 13.5 | 0.1 | 1 | 20.2 | 0.1 | 1.4 | 23.7 | 0.3 | 1.7 | 23.7 | 0.3 | 2 | 32.4 | 0.5 | 2.4 | 33.3 |
| 16 - 255 - W 7TH ST @ F ST | 0 | 0.3 | 13.4 | 0 | 0.1 | 8.9 | 0 | 0.3 | 10.8 | 0 | 0.2 | 13.3 | 0.2 | 2.1 | 18.3 | 0.3 | 2.1 | 22 | 0.3 | 1.6 | 22.4 | 0.4 | 2.2 | 30.6 | 0.6 | 2.9 | 31.1 |
| 17 - 256 - W 7TH ST @ DORCHESTER ST | 0 | 0.7 | 12.7 | 0 | 0.3 | 8.6 | 0.1 | 0.3 | 10.6 | 0.1 | 0.3 | 13.1 | 0.1 | 1.1 | 17.3 | 0 | 1.2 | 20.8 | 0.2 | 1.4 | 21.2 | 0.3 | 1.6 | 29.3 | 0.3 | 2.4 | 29 |
| 18 - 258 - E 8TH ST @ DORCHESTER ST | 0.3 | 1 | 11.9 | 0.3 | 0.6 | 7.9 | 0.3 | 1 | 9.9 | 0.3 | 1.8 | 11.7 | 0.6 | 1.5 | 16.4 | 0.2 | 1.5 | 19.5 | 0.3 | 1.9 | 19.6 | 0.4 | 1.6 | 28.1 | 0.4 | 2 | 27.4 |
| 19 - 25800 - E 8TH ST @ MERCER ST | 0.1 | 0.9 | 11.1 | 0.3 | 0.5 | 7.7 | 0.8 | 1.1 | 9.7 | 1.5 | 0.9 | 12.3 | 0.1 | 1.5 | 15 | 0.2 | 2 | 17.7 | 0.1 | 1.7 | 18 | 0.3 | 3.8 | 24.6 | 0.3 | 3.3 | 24.3 |
| 20 - 259 - E 8TH ST @ OLD HARBOR ST | 0.1 | 0.5 | 10.8 | 0.1 | 0.1 | 7.6 | 0.2 | 0.1 | 9.8 | 0.4 | 0.1 | 12.6 | 0.1 | 0.9 | 14.2 | 0.1 | 1 | 16.7 | 0.1 | 1 | 17.2 | 0.2 | 2.1 | 22.7 | 0.3 | 2.5 | 22.1 |
| 21 - 260 - E 8TH ST @ COVINGTON ST | 0.7 | 0.1 | 11.5 | 0.1 | 0.1 | 7.6 | 0 | 0.2 | 9.6 | 0 | 0.1 | 12.5 | 0.1 | 0.4 | 13.8 | 0 | 0.3 | 16.4 | 0 | 0.5 | 16.8 | 0.1 | 1 | 21.7 | 0 | 1.1 | 21.1 |
| 22 - 261 - E 8TH ST @ G ST | 0 | 2.1 | 9.4 | 0.1 | 0.4 | 7.7 | 0.1 | 0.6 | 9.1 | 0 | 0.2 | 12.3 | 0.1 | 1.6 | 12.3 | 0 | 2.4 | 14 | 0 | 3 | 13.8 | 0.1 | 4.7 | 17.1 | 0.1 | 4 | 17.2 |
| 23 - 262 - E 8TH ST @ H ST | 0 | 1 | 8.4 | 0.1 | 0.5 | 7.3 | 0.1 | 0.7 | 8.4 | 0.1 | 0.9 | 11.5 | 0.1 | 1.9 | 10.4 | 0.2 | 2.4 | 11.9 | 0.1 | 2.5 | 11.3 | 0.1 | 4.5 | 12.7 | 0.1 | 5.3 | 12 |
| 24 - 263 - E 8TH ST @ I ST | 0 | 0.8 | 7.6 | 0 | 0.2 | 7.1 | 0 | 0.1 | 8.3 | 0 | 0.6 | 10.9 | 0 | 1 | 9.5 | 0 | 1.4 | 10.5 | 0 | 1.8 | 9.5 | 0.1 | 3.2 | 9.6 | 0.1 | 3.2 | 8.9 |
| 25 - 264 - E 8TH ST @ K ST | 0 | 1.7 | 5.9 | 0 | 0.3 | 6.9 | 0 | 0.8 | 7.5 | 0 | 0.7 | 10.2 | 0.1 | 1.3 | 8.2 | 0 | 2.3 | 8.2 | 0.1 | 2.7 | 6.8 | 0.1 | 3.2 | 6.5 | 0 | 2.8 | 6.2 |
| 26 - 265 - E 8TH ST @ L ST | 0.2 | 0.7 | 5.4 | 0.1 | 0.5 | 6.4 | 0 | 0.6 | 6.8 | 0 | 0.6 | 9.6 | 0 | 1.2 | 7.1 | 0 | 1.8 | 6.5 | 0 | 1.8 | 5 | 0.1 | 2 | 4.6 | 0 | 2 | 4.3 |
| 27 - 266 - E 8TH ST @ M ST | 0 | 0.3 | 5.1 | 0 | 0.2 | 6.3 | 0 | 0.1 | 6.7 | 0 | 0.1 | 9.5 | 0 | 0.7 | 6.4 | 0 | 1.4 | 5 | 0 | 1.1 | 3.9 | 0 | 1.2 | 3.3 | 0 | 1.3 | 3 |
| 28 - 267 - E 8TH ST @ N ST | 0 | 2.6 | 2.6 | 0 | 1.8 | 4.5 | 0 | 3.5 | 3.2 | 0 | 4.2 | 5.3 | 0 | 0.6 | 5.8 | 0 | 0.6 | 4.4 | 0 | 0.8 | 3.2 | 0 | 1.3 | 2.1 | 0 | 1 | 2 |
| 29 - 268 - COLUMBIA RD @ O ST | 0 | 0.6 | 2 | 0 | 0.2 | 4.3 | 0 | 0.5 | 2.7 | 0 | 1.5 | 3.8 | 0 | 0.3 | 5.5 | 0 | 0.4 | 4 | 0 | 0.4 | 2.7 | 0 | 0.3 | 1.8 | 0 | 0.5 | 1.5 |
| 30 - 270 - COLUMBIA RD @ P ST | 0 | 0.6 | 1.4 | 0 | 0.2 | 4.1 | 0 | 0.2 | 2.5 | 0 | 0.4 | 3.4 | 0 | 0.6 | 5 | 0 | 0.7 | 3.3 | 0 | 0.7 | 2.1 | 0 | 0.7 | 1.1 | 0 | 0.6 | 0.9 |
| 31 - 30270 - COLUMBIA RD @ FARRAGUT RD | 0 | 0.1 | 1.3 | 0 | 0 | 4.1 | 0 | 0 | 2.5 | 0 | 0.1 | 3.3 | 0 | 0 | 5 | 0 | 0.1 | 3.2 | 0 | 0 | 2.1 | 0 | 0.1 | 1 | 0 | 0.1 | 0.8 |
| 32 - 30271 - FARRAGUT RD OPP E FIFTH ST | 0 | 0 | 1.3 | 0 | 0 | 4.1 | 0 | 0 | 2.5 | 0 | 0 | 3.3 | 0 | 0.1 | 4.9 | 0 | 0.2 | 3.1 | 0 | 0.1 | 2 | 0 | 0.1 | 0.9 | 0 | 0.1 | 0.7 |
| 33 - 30272 - FARRAGUT RD @ BROADWAY | 0 | 0.1 | 1.1 | 0 | 0 | 4.1 | 0 | 0 | 2.5 | 0 | 0.1 | 3.3 | 0 | 0.1 | 4.8 | 0 | 0.1 | 2.9 | 0 | 0.2 | 1.8 | 0 | 0.4 | 0.6 | 0 | 0.3 | 0.4 |
| 34 - 32 - FARRAGUT RD OPP E 2ND ST | 0 | 0.2 | 0.9 | 0 | 0.1 | 4 | 0 | 0.3 | 2.2 | 0 | 0.1 | 3.1 | 0 | 0.1 | 4.8 | 0 | 0.2 | 2.7 | 0 | 0.1 | 1.7 | 0 | 0.2 | 0.4 | 0 | 0.1 | 0.4 |
| 35 - 10031 - E 1ST ST @ P ST | 0.2 | 0.1 | 1 | 0 | 0 | 4 | 0 | 0.1 | 2.2 | 0.2 | 0.2 | 3.1 | 0 | 0 | 4.8 | 0.1 | 0.1 | 2.7 | 0.1 | 0.1 | 1.7 | 0 | 0 | 0.4 | 0 | 0 | 0.3 |
| 36 - 10032 - E 1ST ST OPP O ST | 0 | 0.6 | 0.4 | 0 | 0.1 | 3.9 | 0 | 0.1 | 2.1 | 0 | 0.1 | 3 | 0 | 0.1 | 4.6 | 0.1 | 0.2 | 2.5 | 0 | 0.2 | 1.5 | 0 | 0.1 | 0.4 | 0 | 0.2 | 0.2 |
| 37 - 33 - CITY POINT BUS TERMINAL | 0 | 0.2 | 0.2 | 0 | 4.1 | 0 | 0 | 2 | 0 | 0 | 2.7 | 0.2 | 0 | 4.8 | 0 | 0 | 2.4 | 0.1 | 0 | 1.3 | 0.1 | 0 | 0.3 | 0.1 | 0 | 0.1 | 0 |
| Maximum | | | 16.1 | | | 10 | | | 13 | | | 15.9 | | | 25.3 | | | 28.5 | | | 28.9 | | | 39 | | | 38.7 |
| Total | 14.5 | 23.5 | | 9.3 | 13.5 | | 8.3 | 18.3 | | 10.9 | 23.3 | | 24.2 | 30.3 | | 28.3 | 34.6 | | 31.1 | 33.7 | | 41 | 46.2 | | 43.4 | 47.5 | |

9.4

0 9

9.2

0 8.9











# Long-Range Transportation Plan of the Boston Region Metropolitan Planning Organization

July 2015





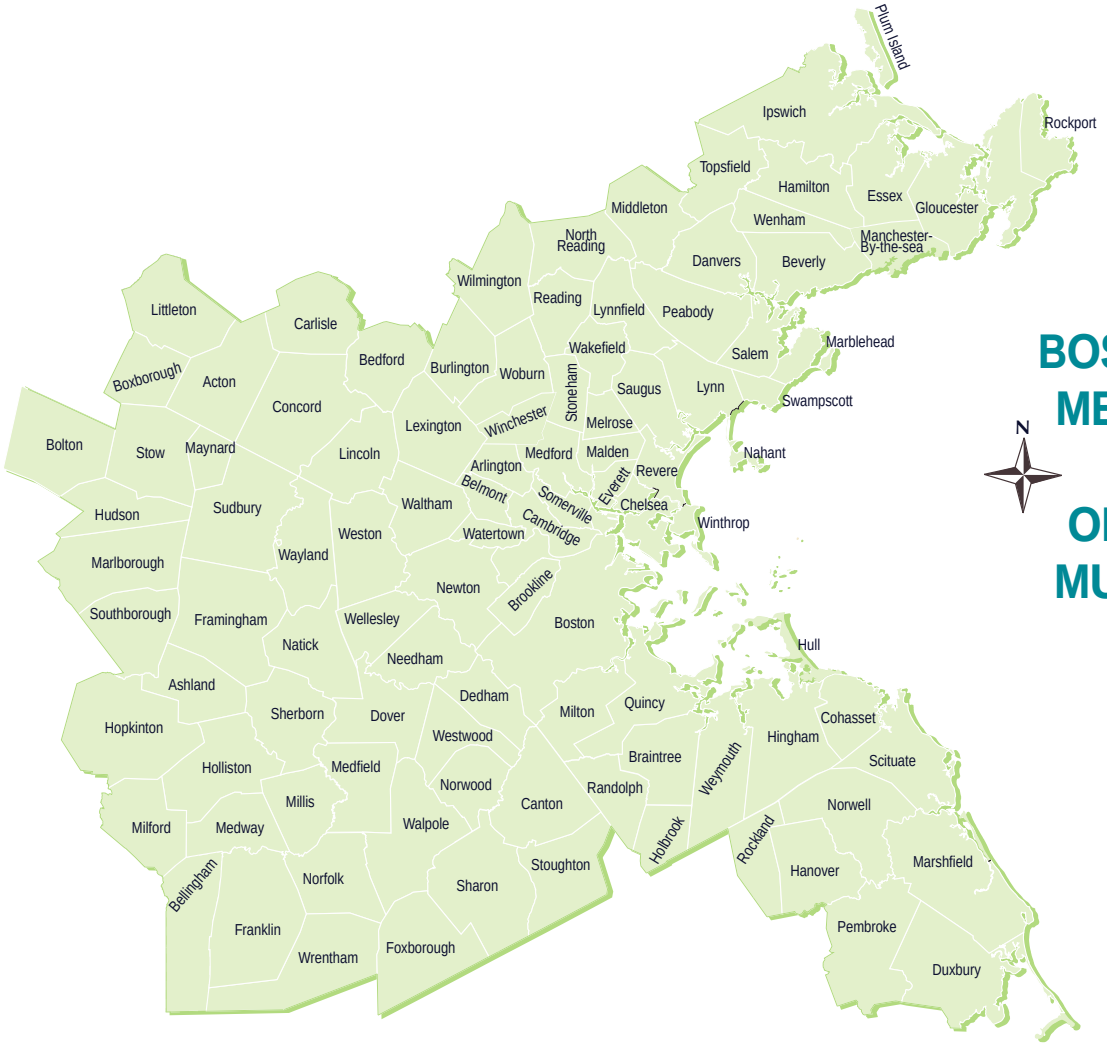

# LONG-RANGE TRANSPORTATION PLAN OF THE BOSTON REGION METROPOLITAN PLANNING ORGANIZATION

JULY 2015

The Boston Region Metropolitan Planning Organization (MPO) is composed of:

- Massachusetts Department of Transportation
- Metropolitan Area Planning Council
- Massachusetts Bay Transportation Authority
- Massachusetts Bay Transportation Authority Advisory Board
- Massachusetts Port Authority
- Regional Transportation Advisory Council
- Federal Highway Administration (nonvoting)
- Federal Transit Administration (nonvoting)
- City of Beverly
- City of Boston
- Town of Braintree
- City of Everett
- City of Newton
- City of Somerville
- City of Woburn
- Town of Arlington
- Town of Bedford
- Town of Framingham
- Town of Lexington
- Town of Medway
- Town of Norwood

Prepared by the MPO's Central Transportation Planning Staff
This document was funded in part through grants from the Federal Highway Administration and Federal Transit Administration of the U.S. Department of Transportation. Its contents do not necessarily reflect the official views or policies of the U.S. DOT.




# BOSTON REGION METROPOLITAN PLANNING ORGANIZATION MUNICIPALITIES

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www.bostonmpo.org

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## Certification of the Boston Region MPO Transportation Planning Process

The Boston Region Metropolitan Planning Organization certifies that its conduct of the metropolitan transportation planning process complies with all applicable requirements, which are listed below, and that this process includes activities to support the development and implementation of the Regional Long-Range Transportation Plan and Air Quality Conformity Determination, the Transportation Improvement Program and Air Quality Conformity Determination, and the Unified Planning Work Program.

1. 23 USC 134, 49 USC 5303, and this subpart.
2. Sections 174 and 176 (c) and (d) of the Clean Air Act, as amended (42 USC 7504, 7506 (c) and (d) and 40 CFR Part 93.
3. Title VI of the Civil Rights Act of 1964, as amended (42 USC 2000d-1) and 49 CFR Part 21.
4. 49 USC 5332, prohibiting discrimination on the basis of race, color, creed, national origin, sex, or age in employment or business opportunity.
5. Section 1101(b) of the SAFETEA-LU (Pub. L. 109-59) and 49 CFR Part 26 regarding the involvement of disadvantaged business enterprises in U.S. DOT-funded projects.
6. The provisions of the Americans with Disabilities Act of 1990 (42 USC 12101 et seq.) and 49 CFR Parts 27, 37, and 38.
7. The Older Americans Act, as amended (42 USC 6101), prohibiting discrimination on the basis of age in programs or activities receiving federal financial assistance.
8. Section 324 of Title 23 USC regarding the prohibition of discrimination based on gender.
9. Section 504 of the Rehabilitation Act of 1973 (29 USC 794) and 49 CFR Part 27 regarding discrimination against individuals with disabilities.
10. Anti-lobbying restrictions found in 49 USC Part 20. No appropriated funds may be expended by a recipient to influence or attempt to influence an officer or employee of any agency, or a member of Congress, in connection with the awarding of any federal contract.

July 30, 2015

Stephanie Pollack, Secretary and Chief Executive Officer
Massachusetts Department of Transportation
Chair, Boston Region MPO

*The signatures of the other MPO members may be found on page 2.*

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Massachusetts Department of Transportation
Highway Division

Massachusetts Department of Transportation

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Massachusetts Bay Transportation Authority

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At-Large – City of Newton

Laura Wiener, for Kevin Greeley, Chair
At-Large – Town of Arlington of Selectmen

At-Large – Town of Lexington

Inner Core – City of Somerville

MetroWest Regional Collaborative –
Town of Framingham

Minuteman Advisory Group on Interlocal
Coordination – Town of Bedford

Dennis A. Deschamps
North Shore Task Force – Town of Beverly
City

North Suburban Planning Council – City of
Woburn

South Shore Coalition – Town of Braintree

South West Advisory Planning Committee –
Town of Medway

Three Rivers Interlocal Council – Town of
Norwood

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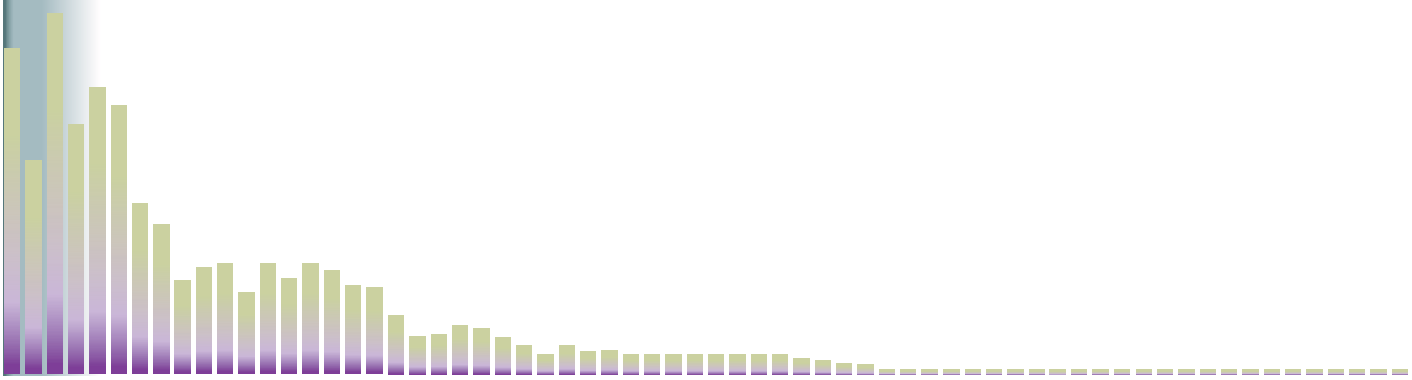
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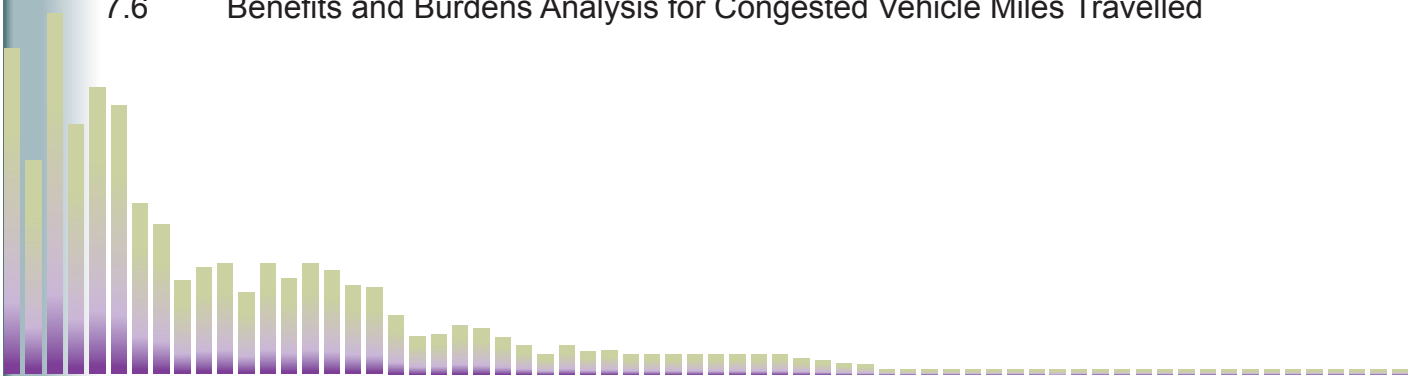
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# ES EXECUTIVE SUMMARY

## INTRODUCTION

This document, *Charting Progress to 2040*, is the Boston Region Metropolitan Planning Organization's (MPO) Long-Range Transportation Plan (LRTP) that will be used to move the region's transportation network from its present state towards the MPO's vision for the system's future:

> *The Boston Region Metropolitan Planning Organization envisions a modern transportation system that is safe, uses new technologies, provides equitable access, excellent mobility, and varied transportation options—in support of a sustainable, healthy, livable, and economically vibrant region.*

To help achieve the MPO's vision, this LRTP identifies goals, evaluates needs, and sets priorities, which will be supported with federal funding that the MPO receives for planning and programming investments in capital projects. However, given the region's aging transportation infrastructure and limited resources, the MPO addresses the following challenge through this LRTP:

> How can we maintain the transportation network to meet existing needs, adapt and modernize it for future demand, and simultaneously work within the reality of constrained fiscal resources?

In answering this challenge, the MPO has re-evaluated its past practices and set a new course by moving away from programming expensive capital-expansion projects to ease congestion, and instead, setting aside more funding for small operations-and-management (O&M)-type projects that support bicycle, pedestrian, and transit, along with major roadway improvements.

The MPO developed *Charting Progress to 2040* in compliance with current federal highway legislation, Moving Ahead for Progress in the 21st Century (MAP-21), which governs MPO activities. In keeping with MAP-21, planning for this LRTP incorporated a number of new elements that brought more information to the decision-making process, for both the MPO and the public. One new element is an interactive web-based needs-assessment application that all interested parties may access. In addition, MPO staff enhanced its performance-based planning practice for this LRTP and expanded its use of contemporary planning tools, such as scenario planning, to inform policy and other types of decisions.

Public participation provided on-going critical input to the MPO's decision-making process. Throughout development of this LRTP, the MPO engaged in extensive outreach with an eye toward making public participation convenient, inviting, and engaging for everyone. In particular, the MPO sought to break down barriers to participation for people who traditionally have been only minimally involved in the continuous, comprehensive, cooperative (3C) planning process; for example, minority and low-income populations, and those with limited English proficiency or disabilities. These outreach efforts reflected the MPO's recently revitalized public participation program that includes using more electronic forms of communication and interactive engagement techniques.

## VISION, GOALS, AND OBJECTIVES

Early in the process of developing *Charting Progress to 2040*, the MPO revised its vision statement to focus more sharply on the transportation issues of greatest concern to the MPO and the public for the envisioned future transportation system, including:

- Safety
- System Preservation
- Capacity Management/Mobility
- Clean Air/Clean Communities
- Transportation Equity
- Economic Vitality

For each of these issues, the MPO identified problems and their associated requirements for the transportation network. This allowed the MPO to set goals that, if accomplished, would result in concrete solutions for the identified problems, and help the region achieve its vision by 2040. The MPO established objectives for each goal. (See Figure ES.1.)

# FIGURE ES.1
# MPO Vision, Goals, and Objectives

**CENTRAL VISION STATEMENT**

**The Boston Region Metropolitan Planning Organization envisions a modern transportation system that is safe, uses new technologies, provides equitable access, excellent mobility, and varied transportation options—in support of a sustainable, healthy, livable, and economically vibrant region.**

| GOALS | OBJECTIVES |
|---|---|
| **SAFETY** | |
| Transportation by all modes will be safe | • Reduce number and severity of crashes, all modes<br>• Reduce serious injuries and fatalities from transportation<br>• Protect transportation customers and employees from safety and security threats (Note: The MPO action will be to incorporate security investments into capital planning.) |
| **SYSTEM PRESERVATION** | |
| Maintain the transportation system | • Improve condition of on- and off-system bridges<br>• Improve pavement conditions on MassDOT-monitored roadway system<br>• Maintain and modernize capital assets, including transit assets, throughout the system<br>• Prioritize projects that support planned response capability to existing or future extreme conditions (sea level rise, flooding, and other natural and security-related man-made hazards)<br>• Protect freight network elements, such as port facilities, that are vulnerable to climate-change impacts |
| **CAPACITY MANAGEMENT/MOBILITY** | |
| Use existing facility capacity more efficiently and increase healthy transportation capacity | • Improve reliability of transit<br>• Implement roadway management and operations strategies, constructing improvements to the bicycle and pedestrian network, and supporting community-based transportation<br>• Create connected network of bicycle and accessible sidewalk facilities (at both regional and neighborhood scale) by expanding existing facilities and closing gaps<br>• Increase automobile and bicycle parking capacity and usage at transit stations<br>• Increase percentage of population and places of employment within one-quarter mile of transit stations and stops<br>• Increase percentage of population and places of employment with access to bicycle facilities<br>• Improve access to and accessibility of transit and active modes<br>• Support community-based and private-initiative services and programs to meet last mile, reverse commute and other non-traditional transit/transportation needs, including those of the elderly and persons with disabilities<br>• Eliminate bottlenecks on the freight network<br>• Enhance intermodal connections<br>• Emphasize capacity management through low-cost investments; give priority to projects that focus on lower-cost O&M-type improvements such as intersection improvements and Complete Streets solutions |
| **CLEAN AIR/CLEAN COMMUNITIES** | |
| Create an environmentally friendly transportation system | • Reduce greenhouse gases generated in the Boston region by all transportation modes as outlined in the Global Warming Solutions Act<br>• Reduce other transportation-related pollutants<br>• Minimize negative environmental impacts of the transportation system<br>• Support land use policies consistent with smart and healthy growth |
| **TRANSPORTATION EQUITY** | |
| Provide comparable transportation access and service quality among communities, regardless of income level or minority population | • Target investments to areas that benefit a high percentage of low-income and minority populations<br>• Minimize any burdens associated with MPO-funded projects in low-income and minority areas<br>• Break down barriers to participation in MPO-decision making |
| **ECONOMIC VITALITY** | |
| Ensure our transportation network provides a strong foundation for economic vitality | • Minimize the burden of housing and transportation costs for residents in the region<br>• Prioritize transportation investments that serve targeted development sites<br>• Prioritize transportation investments consistent with the compact-growth strategies of MetroFuture |

Source: Central Transportation Planning Staff.

Together, the vision, goals, and objectives lay the groundwork for the MPO's performance-based planning practice, which in turn informs all of the work conducted by the MPO, including evaluating and selecting projects and programs for the LRTP, selecting projects for the Transportation Improvement Program (TIP), and selecting planning studies for the Unified Planning Work Program (UPWP).

## TRANSPORTATION NEEDS

The MPO assessed the region's transportation needs to help decide which projects to fund in the LRTP. This Needs Assessment includes information about how the region's surface transportation system is used, both now and in future projections; how it interacts with land-use conditions and the environment; and how well it serves low-income, minority, and other historically underserved populations. The Needs Assessment also establishes the baseline for charting progress through performance-based planning.

The MPO has made the Needs Assessment data available via the internet to help educate the public and make the planning process more transparent. A Needs Assessment document, also found on the MPO's website, summarizes these data and identifies the region's most critical needs relative to each of the MPO's goals. The Needs Assessment makes clear that the region faces extensive maintenance and modernization needs, and must address safety and mobility for all modes.

Using the Needs Assessment, the MPO compiled a comprehensive universe of projects that could be programmed to solve the identified problems; the projects that became the recommended list selected for evaluation and inclusion in this LRTP, were taken directly from this universe.

## FINANCE

During the 25 years of this plan, the Boston Region MPO has the discretion to program $2.85 billion in federal funds for highway transportation projects. This amount is significantly less than was available four years ago when the MPO programmed approximately $3.8 billion in its prior LRTP, *Paths to a Sustainable Region*.

Because, as of this writing, Congress had not yet passed new federal legislation that would solidify long-term revenue projections, the federal agencies advised the MPO to assume that revenues would increase by 1.5 percent each year for federal fiscal years (FFYs) 2021 through 2040. For the same period, the MPO was told to assume that project costs would inflate by 4 percent each year. If these assumptions hold true, project costs will outpace available revenues, resulting in diminished buying power in future years. A new authorization by Congress, following publication of this LRTP, could change the outlook for financing transportation projects in the Boston region.

## TABLE ES.1
## Comparison of Available Capital Highway Funds in *Charting Progress to 2040* to the Previous LRTP, *Paths to a Sustainable Region*

| | FFYs 2013-15 | FFYs 2016-20 | FFYs 2021-25 | FFYs 2026-30 | FFYs 2031-35 | FFYs 2036-40 | Total |
|---|---|---|---|---|---|---|---|
| *Paths to a Sustainable Region* Revenue* | $229.83 | $557.47 | $815.61 | $1018.44 | $1180.65 | -- | $3802.00 |
| *Charting Progress to 2040* Revenue | -- | 441.65 | 464.87 | 580.90 | 657.78 | $708.60 | $2853.80 |
| Difference | | ($115.82) | ($350.74) | ($437.54) | ($522.87) | | ($948.20) |
| Percentage Change | | -21% | -43% | -43% | -44% | -- | -25% |

FFYS = Federal fiscal years.
Note: Dollars in millions.
* *Paths to a Sustainable Region* is a 23 year LRTP compared to *Charting Progress to 2040* which is a 25 year LRTP.
Source: Central Transportation Planning Staff.

The financial plan for *Charting Progress to 2040* reflects the way in which the MPO plans to balance the diversity of identified needs with the fiscal constraint of projected revenues. The financial plan includes estimated costs for the specific regionally significant transportation projects that the MPO will fund, as well as defined amounts of money set aside throughout the life of the plan for programs that will fund smaller projects. Because these smaller projects are not regionally significant, they are not accounted for individually in the LRTP, but will be selected through the TIP programming process.

In addition to reporting on the MPO's discretionary spending decisions, this financial plan also provides information on the nearly $6 billion that the state plans to spend on highway projects. It also will cite the $10.3 billion that the Massachusetts Bay Transportation Authority (MBTA) is expected to spend, and the capital resources available to the other two Regional Transit Authorities operating in the MPO region.

## RECOMMENDED PLAN

MPO staff used a variety of analytic methods, including a number of new and/or enhanced planning tools and techniques, to shed light on the potential outcomes of various investment strategies (and inform the MPO's general discussions and decision making). Staff also increased its use of scenario planning to allow the MPO and other stakeholders to compare the relative effects of different possible transportation solutions.

Scenario planning helped illuminate the relative merits of two different approaches to one of the objectives related to the MPO's capacity management goal:

Should the MPO continue to use a *congestion-reduction* approach by investing in major arterials and express highways? Or, should the MPO adopt a *capacity-management* approach by investing in smaller-scale, but more diverse and geographically dispersed, O&M-type projects?

The results of this exercise led the MPO to adopt the O&M approach to programming in the LRTP, signaling a pivotal change in the MPO's funding philosophy, and committing a significant portion of MPO funds to the following investment programs:

- **Intersection Improvements:** Modernizes existing signals or adds new signals to improve safety and mobility. Improvements also could consist of turning lanes, shortened crossing distances for pedestrians, and striping and lighting for bicyclists. Improvements to sidewalks and curb cuts will enhance accessibility for pedestrians. Updated signal operations will reduce delay and improve transit reliability.
- **Complete Streets:** Modernizes roadways to improve safety and mobility for all users. Improvements could consist of continuous sidewalks and bicycle lanes, cycle tracks, and other bicycle facilities, as well as updated signals at intersections along a corridor. Improvements will reduce delay and improve transit reliability. Expanded transportation options and better access to transit will improve mobility for all and encourage mode shift.
- **Bicycle Network and Pedestrian Connections:** Expands the bicycle and pedestrian networks to improve safe access to transit, school, employment centers, and shopping destinations. Could include constructing new, off-road bicycle or multi-use paths, improving bicycle and pedestrian crossings, or building new sidewalks.
- **Community Transportation/Parking/Clean Air and Mobility:** Includes a combination of the following types of projects:
    - Funds transit services developed at a local level that support first-mile/last-mile connections to existing transit services and other destinations by purchasing shuttle buses and/or funding operating costs
    - Targets funding to construct additional parking at transit stations that now are at capacity, or at identified new parking locations
    - Provides funding to projects (such as bike share projects or shuttle bus services) to improve mobility and air quality and promote mode shift
- **Major Infrastructure:** Includes large-scale projects that modernize and/ or expand major highways and arterials to reduce congestion and improve safety. Projects could include major interchange improvements and major bottleneck reconstruction. This category also includes spending on major transit or bridge projects.

In addition to prioritizing the programs discussed above, the MPO also tried to honor its past policy and practice of maintaining its previous LRTP and TIP-programming commitments when selecting the recommended list of projects for inclusion in the plan. MPO staff used the recommended list to model two alternatives:

- The first alternative programmed all of the currently unfunded major infrastructure projects from the previous LRTP, *Paths to a Sustainable Region*.
- The second alternative targeted funding to lower-cost O&M-type programs, using the following assumptions:
    - No more than 50 percent of available funding in each five-year time band would be allocated to major infrastructure projects.
    - If one major infrastructure project required more than 50 percent of funding in a particular time band, it would not be programmed.
    - Funding for the O&M investment programs used funds that were left after the major infrastructure program was determined, based on the following allocations:
        - Complete Streets Program – 58 percent
        - Intersection Improvements Program – 28 percent
        - Bicycle and Pedestrian Program – 10 percent
        - Community Transportation, parking, and Clean Air and Mobility Program – 4 percent

Ultimately, the MPO chose the O&M alternative for the final selection of projects and programs. The final selection was based on the informed judgment of the MPO and knowledge gained through the LRTP development process, including the needs assessment; scenario-planning; project information from feasibility studies, project-specific modeling work, and environmental impact reports; adherence to the MPO's goals and objectives; and feedback from the general public and other interested parties.

Table ES.2, below, presents the MPO's final list of the projects and programs included in *Charting Progress to 2040's* 25-year horizon.

## TABLE ES.2
## Major Infrastructure Projects in the Recommended Plan

| Project Name | Current Cost |
|---|---|
| Middlesex Turnpike Improvements, From Crosby Drive North to Manning Road, Phase III (Bedford and Billerica) | $26,935,000 |
| Reconstruction of Rutherford Avenue, from City Square to Sullivan Square (Boston) | $109,967,000 |
| Intersection Improvements at Route 126 and Route 135/MBTA and CSX Railroad (Framingham) | $115,000,000 |
| Route 4/225 (Bedford Street) and Hartwell Avenue (Lexington) | $23,221,000 |
| Bridge Replacement, Route 27 (North Main St.) over Route 9 (Worcester St.) and Interchange Improvements (Natick) | $25,793,000 |
| Reconstruction of Highland Avenue, Needham Street and Charles River Bridge, from Webster Street to Route 9 (Newton and Needham) | $14,298,000 |
| McGrath Boulevard Project (Somerville) | $56,600,000 |
| Green Line Extension Project (Phase 2), College Avenue to Mystic Valley Parkway/Route 16 (Somerville and Medford) | $190,000,000 |
| Reconstruction and Widening on Route 18 (Main Street) From Highland Place to Route 139 (Weymouth and Abington) | $58,822,000 |
| Reconstruction of Montvale Avenue, from I-93 Interchange to Central Street (Woburn) | $4,225,000 |
| Bridge Replacement, New Boston Street over MBTA (Woburn) | $9,707,000 |

Table ES.3, below, presents a list of the amount of funding dedicated to programs included in *Charting Progress to 2040*.

## TABLE ES.3
## Funding Dedicated to Programs in the LRTP

| Program | Dedicated Funding |
|---|---|
| MPO Discretionary Capital Program: Major Infrastructure Projects | $615,363,800 |
| MPO Discretionary Capital Program: Highway Funds Flexed to Transit | $190,000,000 |
| MPO Discretionary Capital Program: Complete Street Program | $936,262,700 |
| MPO Discretionary Capital Program: Intersection Improvement Program | $443,639,500 |
| MPO Discretionary Capital Program: Bicycle/Pedestrian Program | $158,442,700 |
| MPO Discretionary Capital Program: Community Transportation/ Parking/ Clean Air and Mobility Program | $63,377,100 |
| MPO Discretionary Capital Program: Unassigned Funds | $446,707,600 |
| **Total Highway Funding** | **$2,853,793,400** |
| Transit Expansion Projects Funded in the Boston Region MPO by the Commonwealth | $1,555,250,000 |
| **Transit Funding** | **$1,555,250,000** |

# CHARTING PROGRESS

Increasingly, over the past two decades, transportation agencies have been utilizing "performance management"—a strategic approach that uses performance data to guide decisions and track progress over time to help achieve desired outcomes. Another term for this strategy is performance-based planning and programming (PBPP). The goal of PBPP is to ensure that transportation investment decisions—both long-term planning and short-term programming—are based on their ability to meet established goals.

Although the Boston Region MPO has been developing a PBPP practice for several years, it stepped up its efforts for this LRTP—both to improve the process and to meet MAP-21 requirements—through the following actions:

- Established goals and objectives that align with national goals
- Identified performance measures for established goals and objectives
- Analyzed trends over time for some performance measures to identify priorities
- Prioritized investments that advance its goals and objectives

The MPO used PBPP to evaluate the degree to which proposed investments—both major infrastructure projects and O&M-type investment programs—advance each of the MPOs goals over the life of the LRTP. For the regionally significant projects and

those that will be funded through O&M-type programs, MPO staff conducted project-level assessments using sketch-planning and travel-demand modeling techniques.

Performance-based planning is an ongoing process and will evolve as the MPO monitors and evaluates its progress using performance measures. The MPO will continue to use PBPP to monitor system-level trends annually and will propose performance targets for each performance measure. By continuously monitoring and evaluating its progress, the MPO will be able to weigh the trade-offs among competing goals and objectives in a more informed manner.

## TRANSPORTATION EQUITY

The MPO supports a transportation equity (TE) program to ensure that populations protected under various federal and state civil rights statutes, executive orders, and regulations (TE populations) are provided equal opportunity to participate fully in the MPO's transportation-planning and decision-making process. Federal regulations require that TE populations share equitably in the benefits and burdens of past, present, and future transportation projects, programs, and service. The MPO's TE program comprises various activities, including a public-participation program designed specifically to communicate with low-income and minority residents, the elderly, persons with disabilities, and persons with limited English proficiency (LEP).

For this LRTP, MPO staff used the travel-demand model set to perform two types of equity analyses:

- **Accessibility analysis**: Based on both the ability to reach desired destinations (employment opportunities, health care facilities, and higher education facilities), and the ease of doing so. This analysis investigated the number of destinations that could be reached from low-income, non-low-income, minority and nonminority transportation analysis zones (TAZs) as well as the average transit and highway travel times to these destinations for each type of TAZ.
- **Mobility, congestion, and air-quality analysis**: Focused on the average door-to-door travel time and average vehicle-miles traveled (VMT) under congested conditions and carbon monoxide levels.

For the first part of each type of analysis, which looked at the change between the 2040 No-Build and Build alternatives for low-income, non-low-income, minority, and nonminority TAZs, respectively, all projected changes were within the margin of error of the model. The second part of the analysis, which measured the ratio of the change from the 2040 No-Build to the Build alternative for low-income versus non-low-income TAZs and minority versus nonminority TAZs, showed no disproportionate burdens or disparate impacts for all six of the accessibility factors and most of the seven mobility, congestion, and air-quality factors analyzed. However, for one mobility and congestion measure,

both a disproportionate burden and disparate impact was found; and for another, only a disparate impact was found. Because the underlying data for this analysis were within the model's margin of error, these findings likely would not be meaningful; however, the MPO will track them via future TIP equity evaluations to ensure that they are addressed.

## AIR QUALITY

The MPO completed two types of air-quality analyses for *Charting Progress to 2040*. The first is the air-quality conformity determination for projects in the LRTP, as required by federal and state regulations, which specifically addresses carbon monoxide (CO). The requirement to perform a conformity determination ensures that federal approval and funding go to transportation activities that are consistent with air-quality goals. The air-quality conformity analysis shows that CO emissions from projects in *Charting Progress to 2040* are consistent with the emissions budget set forth in the State Implementation Plan.

The second air-quality analysis looked at greenhouse gas (GHG) emissions for projects in the LRTP and TIP as mandated by state legislation, which requires that GHG emissions be reduced below 1990 levels by 25 percent by 2020, and 80 percent by 2050. To do so, state policies require the transportation sector to promote healthy transportation modes and support smart growth development.

The Massachusetts Department of Transportation, using MPO and statewide travel-demand models, will provide the MPO with statewide estimates of carbon dioxide ($CO_2$) emissions (the most prominent GHG). These estimates will be based on the collective list of recommended projects in all the Massachusetts LRTPs combined (and supplemented by $CO_2$ emission-reduction results for smaller, "off-model" projects supplied by the MPO). The results of the GHG modeling will be available in a separate statewide air quality report at the end of August 2015. Although not federally required, an emissions analysis for ozone precursors will also be included in this separate air quality report for informational purposes only, based on comments received during the public comment period for the Draft LRTP.

## CONCLUSION

*Charting Progress to 2040* represents a turning point in the philosophy and practice of the MPO. The Boston region has long embraced transit and supported non-motorized modes of transportation. However, this is the MPO's first LRTP that does not prioritize the funding of regionally significant roadway projects over other types of investments. The MPO hopes that charting this new course will achieve its transportation vision for the future, to improve the quality of life of its residents and enhance the environment in the whole region.

# 1 TRANSPORTATION PLANNING FOR THE BOSTON REGION

## INTRODUCTION

To get from one place to another, it is helpful to have a clear vision of where you want to go and a plan that outlines the steps needed for the journey. The plan should include a road map to guide the way and help you understand the terrain you will need to negotiate and the obstacles in your way. Also important to the plan would be knowledge of the resources you could draw on to stay on track and keep moving forward.

This document, *Charting Progress to 2040*, is such a plan. It is the Boston Region Metropolitan Planning Organization's (MPO) Long-Range Transportation Plan (LRTP) that will be used to move the region's transportation network from its present state towards the MPO's vision for the system's future:

> *The Boston Region Metropolitan Planning Organization envisions a modern transportation system that is safe, uses new technologies, provides equitable access, excellent mobility, and varied transportation options—in support of a sustainable, healthy, livable, and economically vibrant region.*

To help achieve the MPO's vision, this LRTP defines goals and objectives that guide the planning process and establish performance metrics to evaluate progress. The plan also describes the problems the region would face as it moves toward its vision, and the needs that it must address. In addition, the LRTP evaluates various strategies' potential to meet those needs, and identifies financial resources and impediments to implementing solutions.

## METROPOLITAN TRANSPORTATION PLANNING FRAMEWORK

### *History and Function of MPOs*

*Charting Progress to 2040* is a product of the Boston Region MPO, which is the designated metropolitan planning organization for the Boston metropolitan area. States create MPOs for urbanized areas of more than 50,000 people. The Federal-aid Highway Act of 1962 mandated the existence of MPOs to ensure that decisions about federal funding of transportation projects and programs would be based on a

"continuing, cooperative, and comprehensive" (3C) planning process. To implement the prescribed 3C planning process, MPOs are required to:

- Plan for the long-range future of their region by developing and maintaining an LRTP for the metropolitan area
- Develop a short-range capital spending plan to achieve the region's goals—the Transportation Improvement Program (TIP)—which is the implementing arm of the LRTP
- Conduct planning studies to identify and evaluate alternative transportation-improvement options and other information needed for MPO decision making, as described in the Unified Planning Work Program (UPWP)
- Establish and manage a fair and impartial setting for effective regional decision making in the metropolitan area
- Involve the public in the area's decision making

## *Current MPO Requirements*

The current federal legislation governing MPOs is Moving Ahead for Progress in the 21st Century (MAP-21). This law establishes national goals for federal highway programs that relate to safety, system preservation, congestion reduction, system reliability, improved freight movement for economic vitality, environmental sustainability, and reduced project delay and delivery. MAP-21 continues many of the metropolitan planning requirements established through previous iterations of federal highway legislation, such as:

- Considering environmental effects
- Analyzing air quality
- Developing fiscally constrained financial plans, operational, and management strategies to improve performance of existing facilities
- Generating capital investments and strategies for preserving the system, and providing multi-modal capacity increases
- Initiating public-participation activities that include the full spectrum of the public

MAP-21 also introduced some new metropolitan planning responsibilities, such as requiring MPOs to implement performance-based planning practices that include performance measures and targets to track and report on progress toward well-defined goals and objectives.

In addition to MAP-21, a number of other federal and state laws, regulations, executive orders, policy directives, and planning frameworks influence and guide metropolitan transportation planning:

- United States Department of Transportation (USDOT) 23 CFR (Code of Federal Regulation) Parts 450 and 500, and 49 CFR Part 613
- 1990 Clean Air Act Amendments
- United States Environmental Protection Agency (EPA) Conformity Regulation (40 CFR Parts 51 and 93).
- Americans with Disabilities Act (ADA)
- Title VI of the 1964 Civil Rights Act and related Presidential Executive Orders
- Massachusetts Global Warming Solutions Act (GWSA)
- Massachusetts Strategic Highway Safety Plan (SHSP)
- Massachusetts Department of Transportation initiatives
    - GreenDOT Policy
    - Healthy Transportation Compact (HTC)
    - Mode Shift Goal
    - youMove Massachusetts (YMM) planning initiative

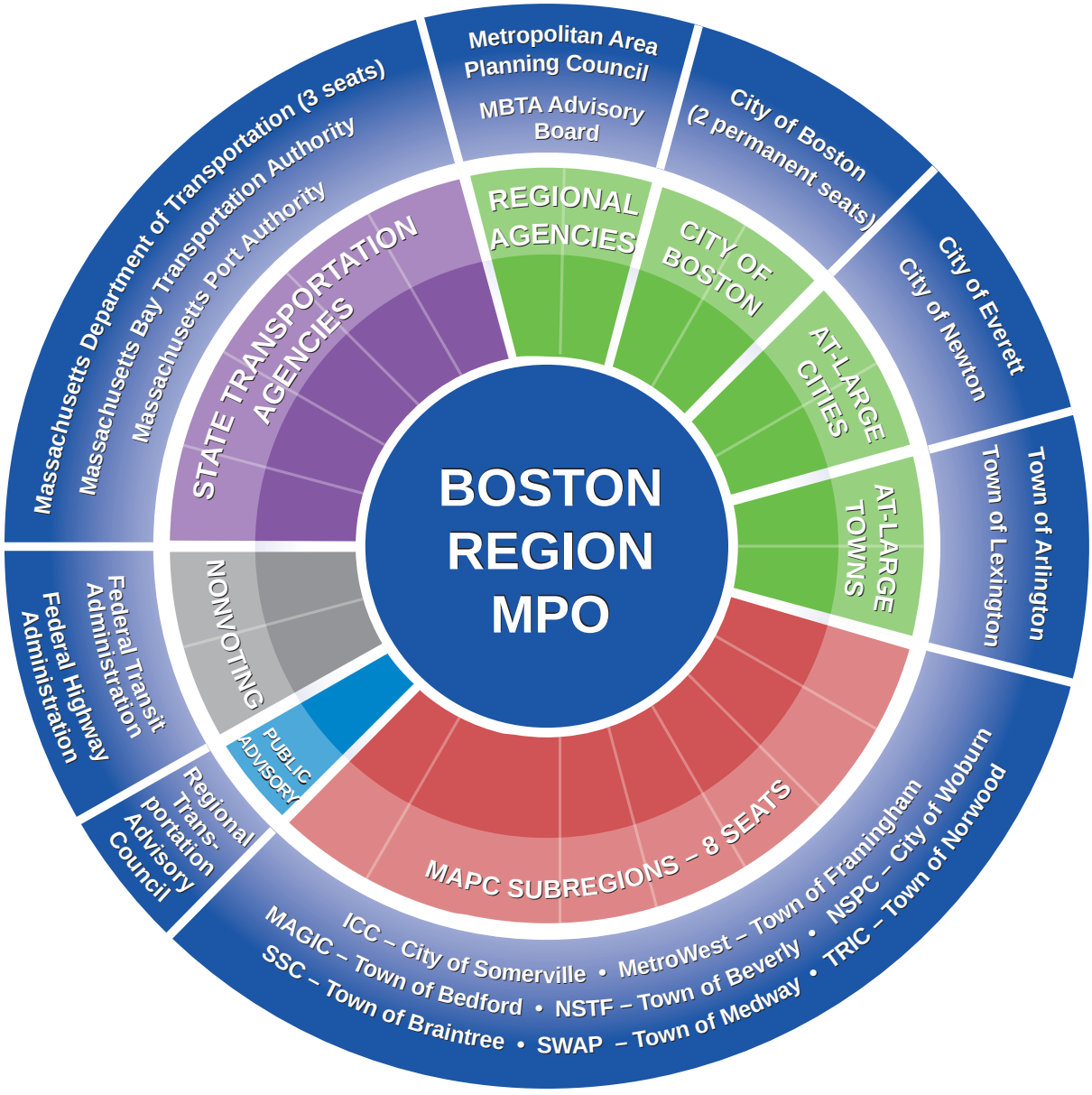
All of the above are discussed in Appendix A of the *Charting Progress to 2040* Needs Assessment document (available online at http://www.bostonmpo.org/Drupal/charting_2040_needs).

# THE BOSTON REGION MPO

## *Composition of the MPO*

The Boston Region MPO is responsible for transportation planning in the metropolitan area. Currently, the MPO has 22 voting members, which include representatives from state transportation agencies, regional entities involved in transportation, and municipalities. The Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) participate in the MPO in a nonvoting capacity. (For more information about Boston Region MPO membership see Figure 1.1.)

## FIGURE 1.1
## Boston Region Metropolitan Planning Organization Member Structure




The Central Transportation Planning Staff (CTPS) is the technical staff to the MPO. CTPS conducts planning studies and technical analyses, and develops and maintains a set of specialized analytical tools that help to inform the MPO's transportation planning and policy decisions.

(For more information about the MPO and its operation, visit the MPO website at www.bostonmpo.org.)

## *Diversity of the Boston Region*

The area for which the Boston Region MPO has transportation planning responsibility encompasses 101 cities and towns from Boston to Ipswich in the north, Duxbury in the south, and Marlborough in the west (see Figure 1.2). This area covers 1,405 square miles and makes up about 18 percent of the state's land area. It includes more than three million residents—48 percent of the state's population.

### FIGURE 1.2
### Boston Region Metropolitan Planning Organization Municipalities



To understand a region's transportation problems and needs, it is important to appreciate the diversity of its land use, population, employment, geography, and travel options that help to shape the transportation system and regional travel patterns.

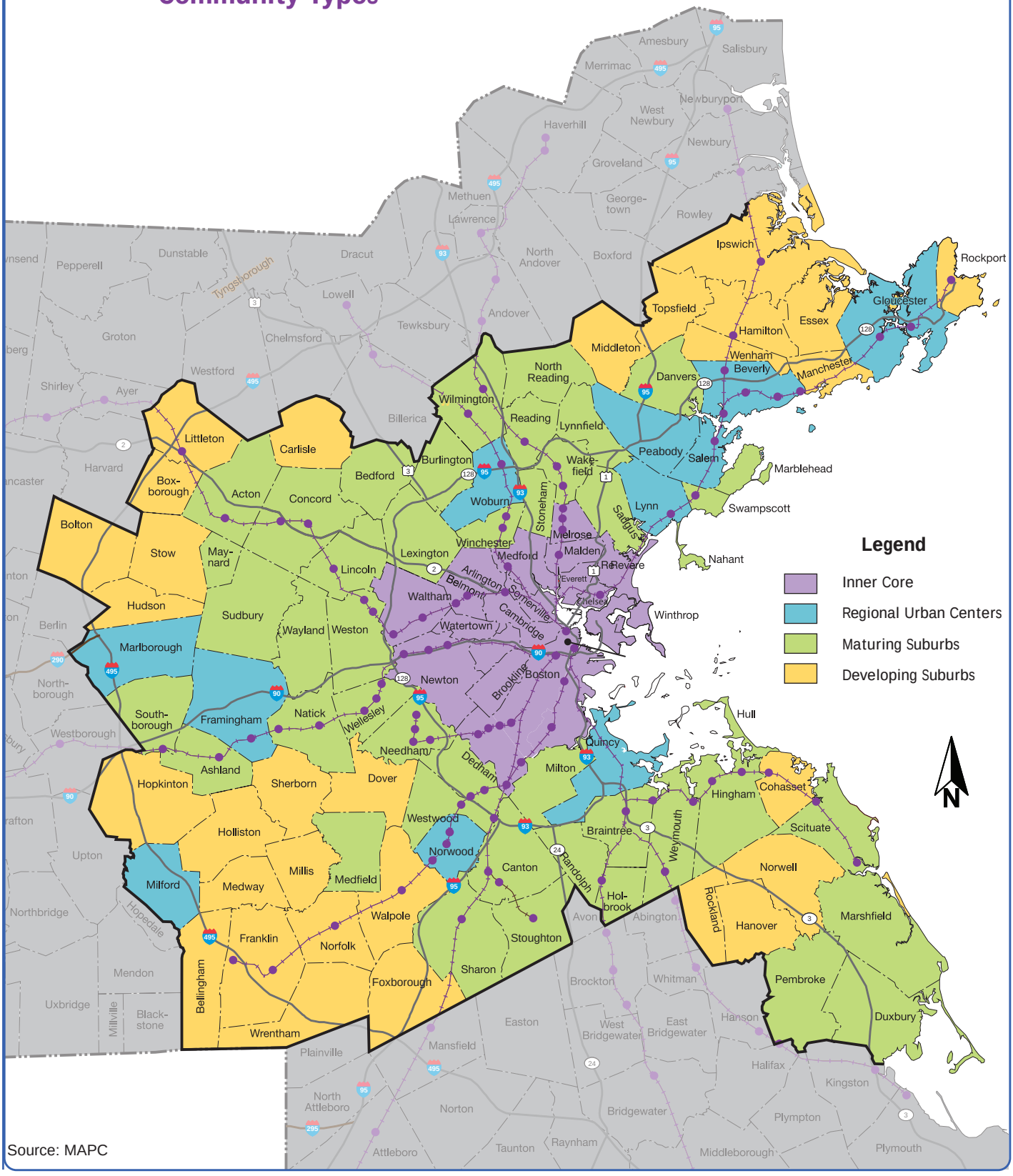
## DIVERSE LAND TYPES

The Boston region is notable for its diverse municipalities, ranging from relatively rural towns, such as Essex, to the densely populated, urban city of Cambridge. At its heart is the city of Boston, which covers 48.4 square miles. Although the city comprises only 3 percent of the region's area, it is home to 20 percent of the region's jobs and 20 percent of its residents.

The region's municipalities can be divided into four different community types, based on existing development patterns and growth potential.

- Inner Core: High-density built-out communities in the center of the region with multi-family homes as a significant portion of housing stock, and employment concentrated in downtown Boston and portions of Cambridge. The Inner Core is essentially "built-out," with little vacant developable land.
- Regional Urban Centers: Communities outside the inner core with urban-scale downtown centers, moderately dense residential neighborhoods, a mixture of built-out areas and developable land on the periphery, as well as growing immigrant populations.
- Maturing Suburbs: Moderately dense communities with less than 20 percent of land vacant and developable. These communities are comprised mainly of owner-occupied single-family homes, and are mainly residential, although some are significant employment centers.
- Developing Suburbs: Communities with large expanses of vacant developable land, ranging from those with strong town centers and moderately dense neighborhoods to ones that are more rural.

# FIGURE 1.3
# Metropolitan Area Planning Council Community Types



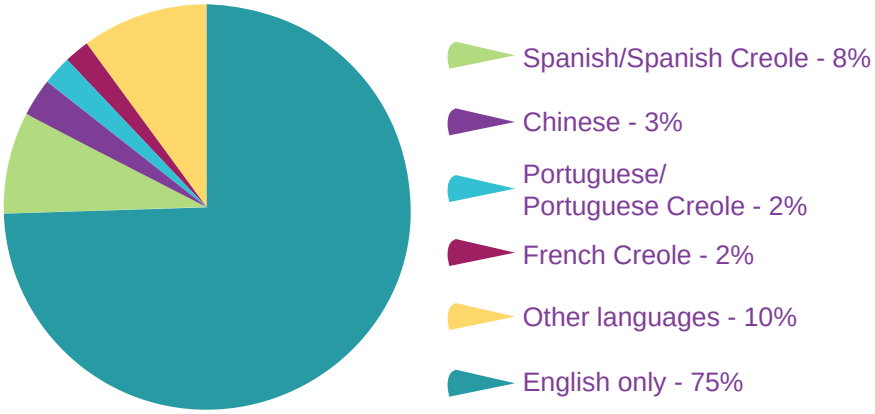

Source: MAPC

## DIVERSE PEOPLE

The Boston region is home to a diverse population in terms of race, language, and age, as well as household size and income.

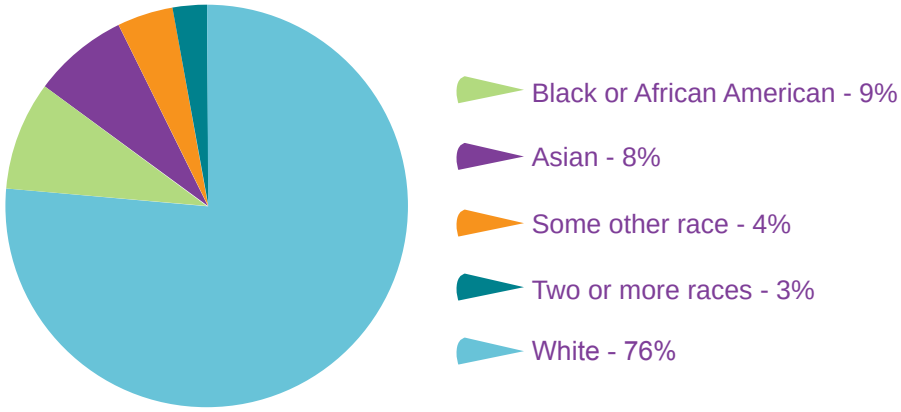
A quarter (25 percent), of the population speaks a language other than English at home (Figure 1.4) and a quarter of the population (24 percent) identifies as nonwhite (Figure 1.5).

### FIGURE 1.4
### Language Spoken at Home for the Population 5 Years and Over




Source: 2013 American Community Survey 5-Year Summary File, Table B16001.

### FIGURE 1.5
### Population by Race

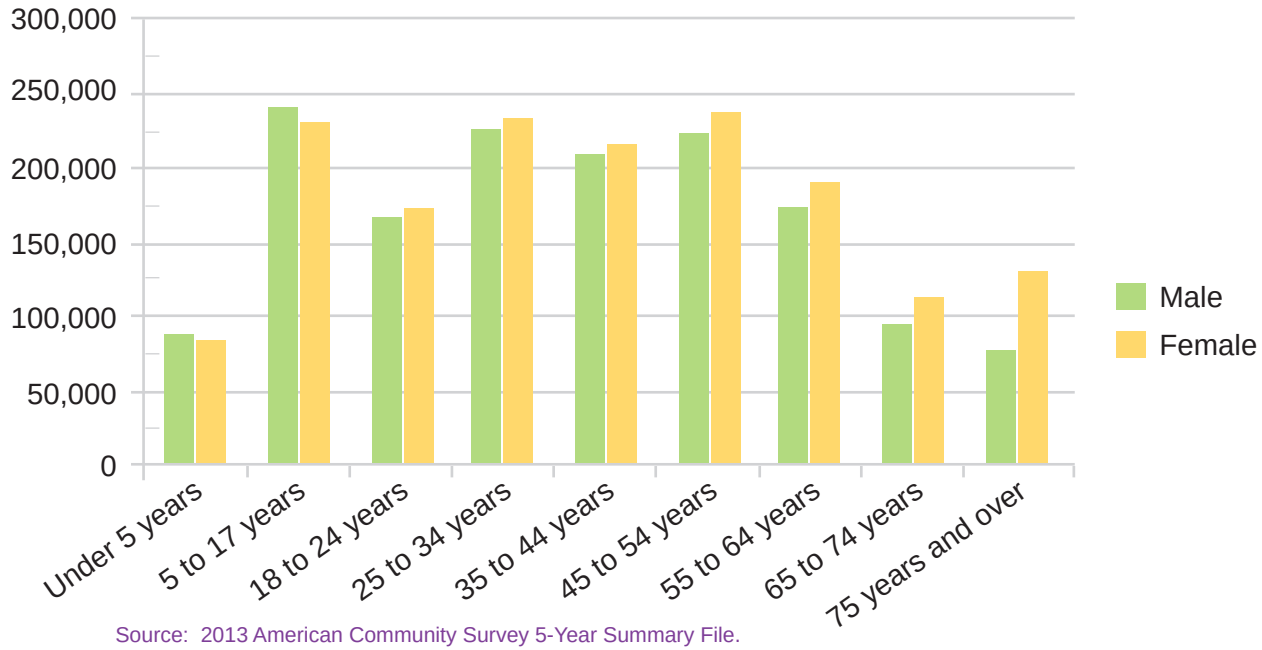



Source: 2013 American Community Survey 5-Year Summary File.

Although the population is representative of all ages, the largest age groups are 5 to 17, 45 to 54, and 25 to 34 years, with a median age of 37.9 years (Figure 1.6). This provides the Boston region with a robust workforce, and the large number of young residents fuels growth of the region's education sector. Household size is shrinking, with one- and two-person households making up 62 percent of all households in the region (Figure 1.7).

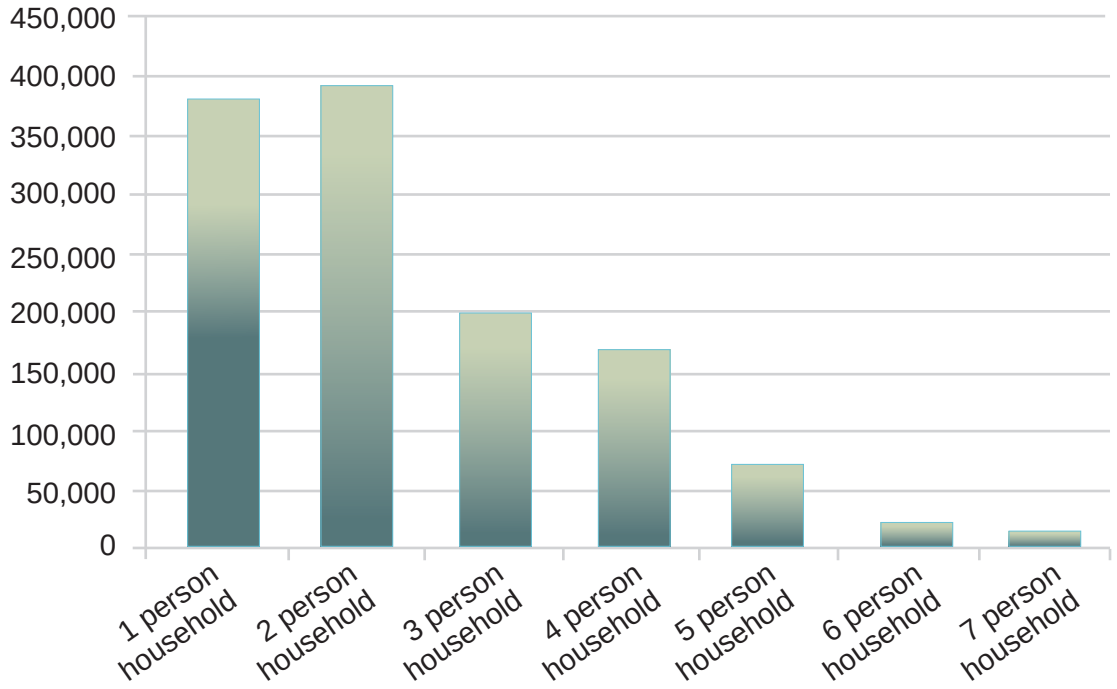
The region's residents also fare well economically, with 50 percent of households earning more than $75,000. Despite this, 22 percent of the region's households earn less than $29,000, highlighting the need to examine regional economic equity (Figure 1.8).

**FIGURE 1.6**
**Population by Sex and Age**



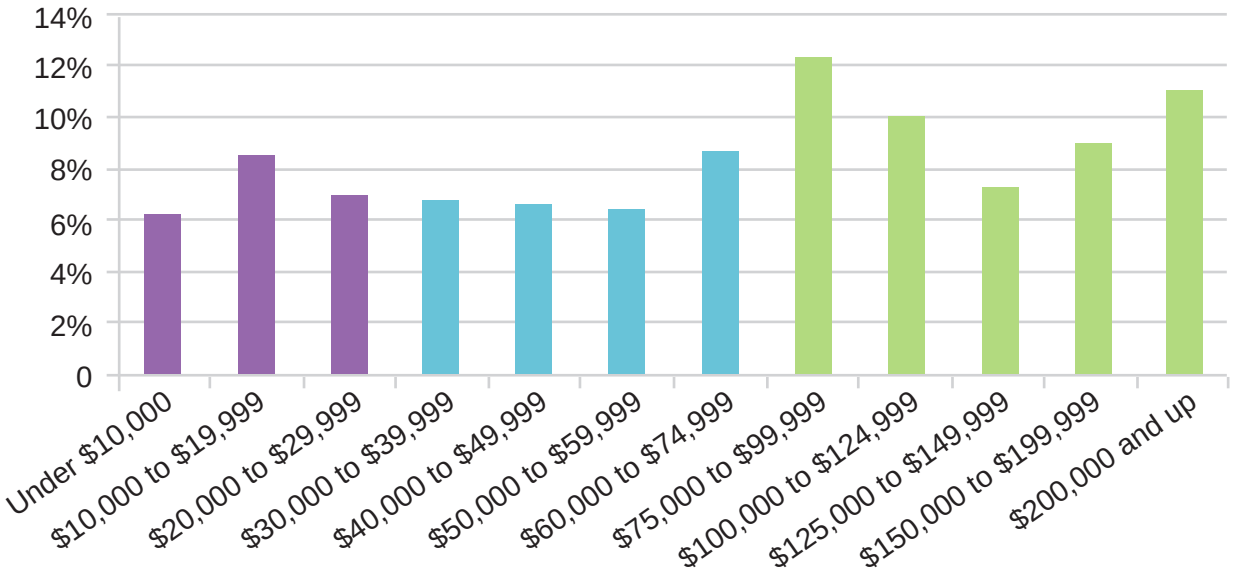

Source: 2013 American Community Survey 5-Year Summary File.

## FIGURE 1.7
## Households by Size




Source: 2013 American Community Survey 5-Year Summary File.

## FIGURE 1.8
## Household Income 2009-2013 (in 2013 dollars)



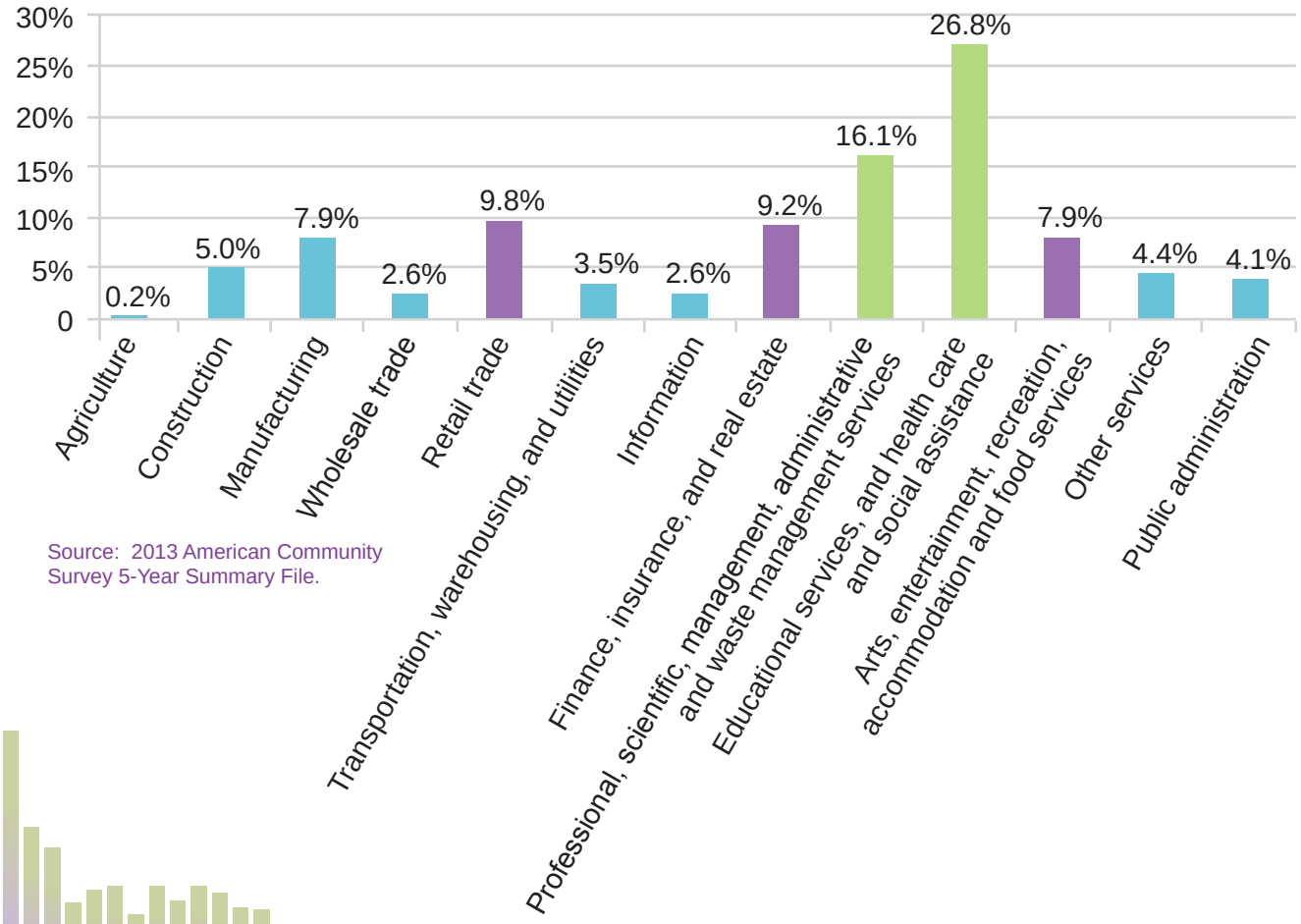

Source: 2013 American Community Survey 5-Year Summary File.

## DIVERSE WORK

The Boston region is home to a broad spectrum of industries and professions. The largest employment sectors include educational services, health care, and social assistance, totaling 26.8 percent of all employment. The second-largest sectors include the professional, scientific, and management fields, as well as administrative and waste-management services, at 16.1 percent of total regional employment. Combined, these sectors comprise almost half of the region's employment, at 42.9 percent (Figure 1.9).

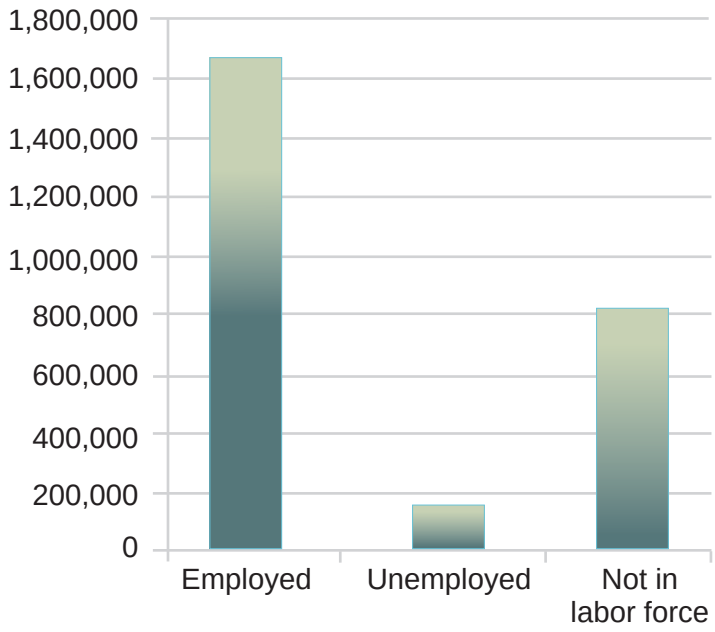
The Boston region is a national leader in education and health care, and the prominence of these industries enables a consistently strong economy, with only 6 percent of the population older than 16 years unemployed (Figure 1.10). The importance of the region's finance and housing markets also is reflected in strong employment in finance, insurance, and real estate. Finally, the region is notably shaped by the arts, entertainment, and recreation, as well as retail, all of which contribute to the region's strong tourism trade and cultural environment.

### FIGURE 1.9
### Employment by Industry as a Percentage of Total Employment




Source: 2013 American Community Survey 5-Year Summary File.

## FIGURE 1.10
## Employment Status




Source: 2013 American Community Survey 5-Year Summary File.

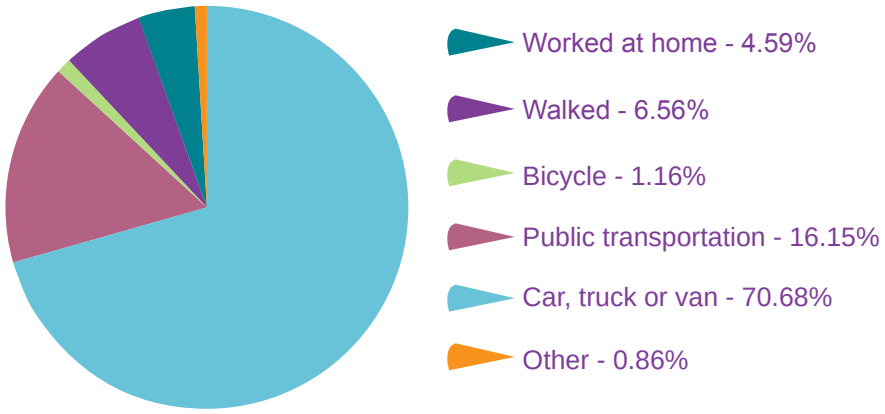
### DIVERSE GEOGRAPHY

Although the City of Boston and the 13 surrounding cities form the heart of the region, it also includes a sizable amount of undeveloped land. The Boston region is home to more than 25 state forests and parks, and forests cover 39 percent of the land area. The region is rich in other types of natural landscapes as well, with water, wetlands, and open space comprising another 11 percent of total land area, and 550 miles of coastline.

### DIVERSE TRAVEL

The Boston region's transportation system provides varied travel options. In addition to the roadway network, which allows residents to commute by car, bike, and foot, an extensive public transportation system provides bus, heavy and light rail, ferry, and commuter rail services. Although the majority of residents drive to work, 16.15 percent take some form of transit, making the Boston metropolitan area one of the highest users of public transportation for commuting compared to other metropolitan areas in the country (Figure 1.11).

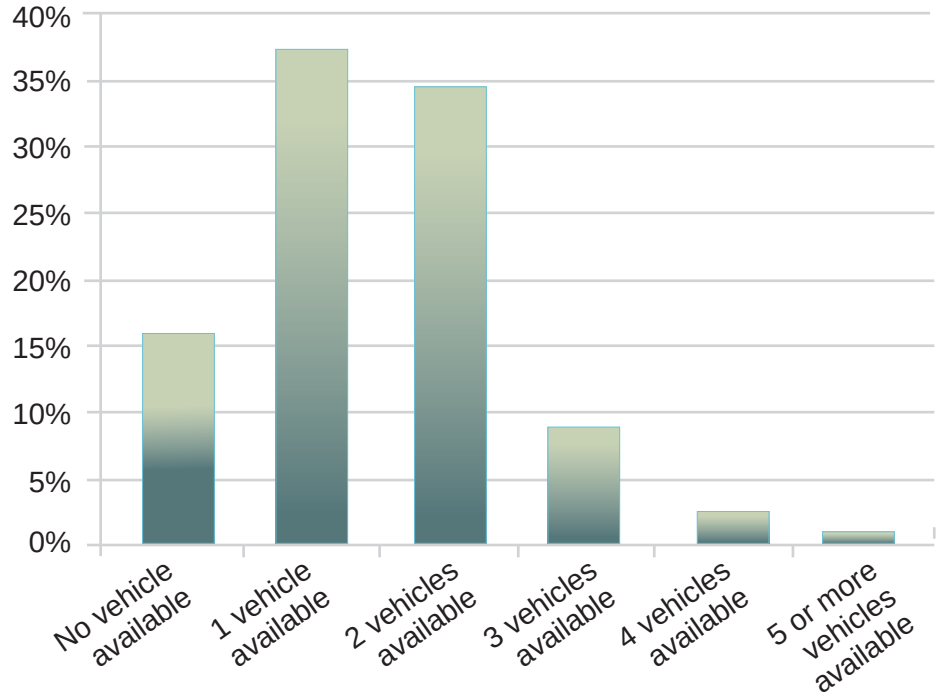
## FIGURE 1.11
## Means of Transportation to Work




Source: 2013 American Community Survey 5-Year Summary File, Table B16001.

The region also has a significant number of zero- and one-vehicle households, totaling more than half of all households at 53 percent (Figure 1.12).

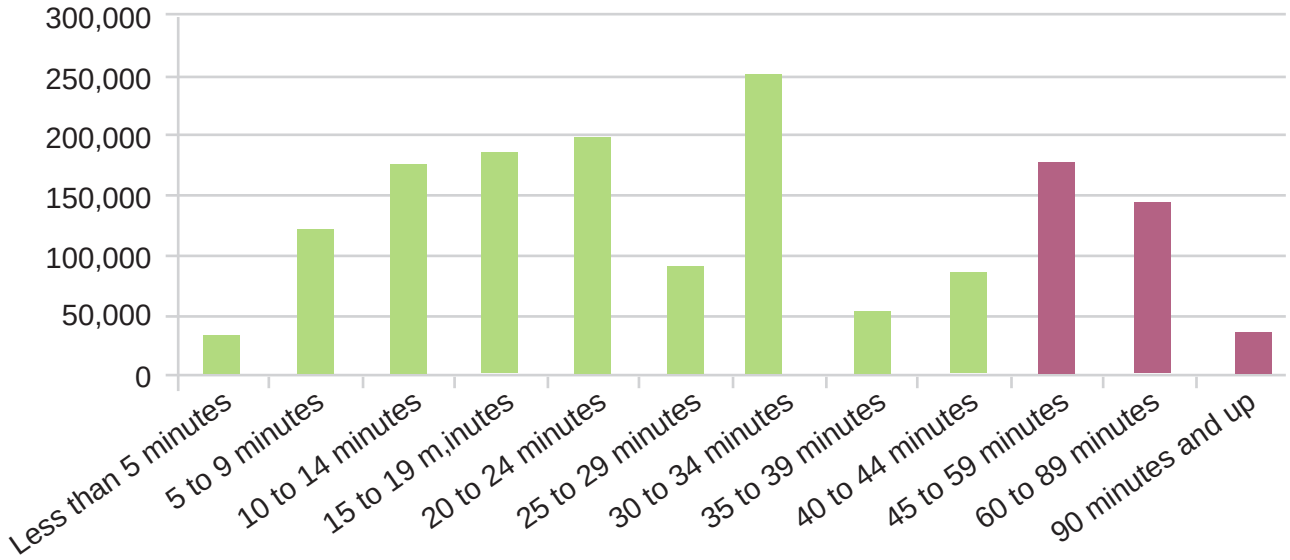
## FIGURE 1.12
## Vehicles Available by Household as Percentage of Total Households




Source: 2013 American Community Survey 5-Year Summary File.

Most of the Boston region's commuting trips take less than 35 minutes; however, almost a quarter (23 percent) are longer than 45 minutes (Figure 1.13). The average travel time to work in the region for all travel modes is 22.9 minutes. Walkers have the shortest average commute time, at 13.3 minutes, followed by those who drive alone or in carpools (20 minutes), taxicab, motorcycle, or bike (24 minutes), and public transportation (39.3 minutes). Although the region has a relatively large share of transit commuters, transit commutes remain significantly longer than other average commute times.

**FIGURE 1.13**
**Commute Time**




Source: 2013 American Community Survey 5-Year Summary File.

## ASSESSING THE REGION'S TRANSPORTATION PROBLEMS

The MPO understands that transportation is not a simple end in itself. People use various transportation modes because they want to move themselves and/or their goods from one place to another in order to accomplish innumerable purposes. These may be for commuting between work and home, or home and school, or between home and other economic, health, administrative, or recreational activities or services. In brief, the function of transportation is to enable social interaction, commerce, and personal development and fulfillment.

However, there are obstacles to serving these functions. Foremost is the combined lack of adequate funding and aging transportation infrastructure. In addition, the socio-demographic and economic patterns of the region are in transition. Because of

the region's aging population over the next 25 years, and forecasted in- versus out-migration, the region's mobility and accessibility needs are evolving. The MPO is forging consensus about which projects are priorities for development and the density of their related economic and residential land uses.

Considering that the ultimate purpose of transportation is to serve human activity, the MPO defines its challenge for this LRTP as:

> How can we maintain the transportation network to meet existing needs, adapt and modernize it for future demand, while simultaneously working within the reality of constrained fiscal resources?

*Charting Progress to 2040* is the roadmap for responding to this conundrum. The subsequent chapters describe ways to work toward achieving the MPO's vision and goals for the region that are both visionary and tangibly realistic.

## CHAPTERS

Chapter 2—Process for Developing *Charting Progress to 2040*—provides an overview of the process used to develop this plan, including updating the MPO's vision and establishing related goals and objectives; assessing the region's transportation needs; developing and analyzing future transportation scenarios; finalizing the plan; and citing the public participation that supported the planning process throughout.

Chapter 3—Transportation Needs in the Boston Region—includes a summary of the regional transportation needs identified in the Needs Assessment.

Chapter 4—Funding the Transportation Network—considers all transportation funding to be spent in the MPO region over the life of the LRTP; explains LRTP fiscal constraint requirements; and identifies the amount of total transportation funding over which the MPO has decision-making power, compared to the cost of selected projects and programs.

Chapter 5—The Recommended Plan—describes and maps the set of projects and programs selected for the LRTP.

Chapter 6—Charting Performance—discusses MAP-21 requirements for performance measurement and describes the MPO's development and implementation of a performance-based planning practice.

Chapter 7—Transportation Equity (TE)—includes a description of the MPO approach to identifying communities of concern and their role in Title VI analysis and in the MPO Transportation Equity Program; describes the Transportation Equity Program, its goals, activities, and some key results; presents Title VI analysis and reporting; explains the TE analysis for the LRTP, both the procedure and results; identifies projects and programs that benefit TE areas.

Chapter 8—Air Quality Conformity Determination and Greenhouse Gas Analysis—includes the air-quality conformity determination showing that the LRTP is consistent with the Commonwealth's plans for attaining and maintaining air-quality standards; a report on the legislation and regulations requiring carbon dioxide ($CO_2$) emission reductions by the MPO and the process for documenting $CO_2$ emissions associated with projects and programs included in the LRTP as required for implementing the Massachusetts Global Warming Solutions Act.

## CONTINUING WORK

Several components of the LRTP were designed to be dynamic and will be continuously updated and developed. These include the Needs Assessment, performance-based planning practice, and the public participation program.

All interested parties, including members of the public, are encouraged to follow the MPO's work and to be engaged in the development and modifications that will be underway during the next four years.

# 2 PROCESS FOR DEVELOPING *CHARTING PROGRESS TO 2040*

## OVERVIEW OF THE PROCESS

The process for developing *Charting Progress to 2040* incorporated a number of new elements that brought more information into the decision-making process, for both the MPO and the public. One new element is an interactive web-based needs-assessment application that can be accessed by all interested parties. In addition, MPO staff enhanced its performance-based planning practice for this LRTP and expanded use of contemporary planning tools, such as scenario planning, to inform policy and other types of decisions. Other new components are incorporating more electronic forms of communication into the MPO's approach to public participation, and heightened collaborative engagement with members of the public, both of which were integral to the LRTP development process and helped guide MPO decision making.

All of these new elements helped shape a fresh approach to programming—setting the MPO on a path that will make it more agile as it responds to performance measurement results, and more adept at charting a course for the transportation network of 2040.

Perhaps the most notable change, however, was moving away from the MPO's past practice of programming expensive capital-expansion projects to ease congestion, and adopting a new approach by funding a larger number of small operations-and-management (O&M)-type projects that support bicycle, pedestrian, and transit in addition to roadway improvements.

This chapter discusses the process and rationale for decision making throughout the LRTP's development. The outcomes of these decisions, in terms of identifying needs, analyzing scenarios, selecting projects and programs, and finalizing the LRTP, are discussed in subsequent chapters.

## IMAGINING THE FUTURE: VISION, GOALS, AND OBJECTIVES

Early in the process of developing this LRTP, the MPO revisited its vision statement to focus more sharply on the transportation issues of greatest concern to the MPO and the public for the envisioned future transportation system:







- Safety
- System Preservation
- Capacity Management/Mobility
- Clean Air/Clean Communities
- Transportation Equity
- Economic Vitality

For each of these issues, the MPO identified problems and their associated needs for the transportation network. This allowed the MPO to set goals that, if accomplished, would result in concrete solutions for the identified problems, and help the region achieve its vision by 2040. The MPO established objectives for each goal (see Figure 2.1).







# FIGURE 2.1
# MPO Vision, Goals, and Objectives

**CENTRAL VISION STATEMENT**

**The Boston Region Metropolitan Planning Organization envisions a modern transportation system that is safe, uses new technologies, provides equitable access, excellent mobility, and varied transportation options—in support of a sustainable, healthy, livable, and economically vibrant region.**

| GOALS | OBJECTIVES |
|---|---|
| **SAFETY** | |
| Transportation by all modes will be safe | • Reduce number and severity of crashes, all modes<br>• Reduce serious injuries and fatalities from transportation<br>• Protect transportation customers and employees from safety and security threats (Note: The MPO action will be to incorporate security investments into capital planning.) |
| **SYSTEM PRESERVATION** | |
| Maintain the transportation system | • Improve condition of on- and off-system bridges<br>• Improve pavement conditions on MassDOT-monitored roadway system<br>• Maintain and modernize capital assets, including transit assets, throughout the system<br>• Prioritize projects that support planned response capability to existing or future extreme conditions (sea level rise, flooding, and other natural and security-related man-made hazards)<br>• Protect freight network elements, such as port facilities, that are vulnerable to climate-change impacts |
| **CAPACITY MANAGEMENT/MOBILITY** | |
| Use existing facility capacity more efficiently and increase healthy transportation capacity | • Improve reliability of transit<br>• Implement roadway management and operations strategies, constructing improvements to the bicycle and pedestrian network, and supporting community-based transportation<br>• Create connected network of bicycle and accessible sidewalk facilities (at both regional and neighborhood scale) by expanding existing facilities and closing gaps<br>• Increase automobile and bicycle parking capacity and usage at transit stations<br>• Increase percentage of population and places of employment within one-quarter mile of transit stations and stops<br>• Increase percentage of population and places of employment with access to bicycle facilities<br>• Improve access to and accessibility of transit and active modes<br>• Support community-based and private-initiative services and programs to meet last mile, reverse commute and other non-traditional transit/transportation needs, including those of the elderly and persons with disabilities<br>• Eliminate bottlenecks on the freight network<br>• Enhance intermodal connections<br>• Emphasize capacity management through low-cost investments; give priority to projects that focus on lower-cost O&M-type improvements such as intersection improvements and Complete Streets solutions |
| **CLEAN AIR/CLEAN COMMUNITIES** | |
| Create an environmentally friendly transportation system | • Reduce greenhouse gases generated in the Boston region by all transportation modes as outlined in the Global Warming Solutions Act<br>• Reduce other transportation-related pollutants<br>• Minimize negative environmental impacts of the transportation system<br>• Support land use policies consistent with smart and healthy growth |
| **TRANSPORTATION EQUITY** | |
| Provide comparable transportation access and service quality among communities, regardless of income level or minority population | • Target investments to areas that benefit a high percentage of low-income and minority populations<br>• Minimize any burdens associated with MPO-funded projects in low-income and minority areas<br>• Break down barriers to participation in MPO-decision making |
| **ECONOMIC VITALITY** | |
| Ensure our transportation network provides a strong foundation for economic vitality | • Minimize the burden of housing and transportation costs for residents in the region<br>• Prioritize transportation investments that serve targeted development sites<br>• Prioritize transportation investments consistent with the compact-growth strategies of MetroFuture |

Source: Central Transportation Planning Staff.




Together, the vision, goals, and objectives lay the groundwork for the MPO's performance-based planning practice, which in turn informs all of the work conducted by the MPO, including evaluating and selecting projects and programs for the LRTP, selecting projects for the TIP, and selecting planning studies for the UPWP. The MPO's performance-measurement work is discussed in detail in Chapter 6.

During development of the vision, goals, and objectives, the MPO reached out to members of the general public in a variety of ways (see the Public Participation section of this chapter) to seek input; then considered this feedback, which is reflected in the final set of goals.

## ASSESSING THE REGION'S TRANSPORTATION NEEDS

The second step in developing this LRTP was assessing the region's transportation needs based on an inventory of its transportation issues. This process allowed the MPO to make decisions about which capital projects, as well as which UPWP planning studies, would best meet the identified needs. The assessment of needs established the baseline against which future projections were compared for this plan. This baseline assessment will also be the foundation for performance-based planning, and will allow the MPO to track trends over time and assess progress toward achieving its goals.

The data for the Needs Assessment were drawn from a variety of sources to document current demographics and existing conditions for the region's transportation network. Sources included the MPO's Congestion Management Process (CMP); various Massachusetts Department of Transportation-managed databases, such as the High-Crash Database; the Massachusetts Household Travel Survey; Metropolitan Area Planning Council (MAPC) socioeconomic data; the Massachusetts Bay Transportation Authority (MBTA) Program for Mass Transportation (long-range capital plan); the MPO's transportation equity program; the MPO's and other transportation studies; and the MPO's regional travel demand model set, which projects future travel demand in the

region. See Chapter 3 for a summary of transportation needs identified via the needs-assessment process. For full documentation of the Needs Assessment, as well as an interactive application that provides access to the data, visit the MPO's website at http://www.ctps.org/map/www/apps/lrtpNeedsAssessmentApp/index.html.

The MPO made the needs assessment data available to all interested parties via the internet not only to help educate the public and make the planning process more transparent, but also to provide an opportunity for other planners, academics, and the general public to interact with, download, and analyze the data for their own purposes. In addition, being able to access all of the data via the website allows MPO staff to easily update and disseminate this information as new data become available.

## ANALYZING FUTURE TRANSPORTATION SCENARIOS

The third step in the LRTP planning process was analyzing and deliberating about the transportation investments that the MPO should make between now and 2040 to help achieve its vision. MPO staff used a variety of analytic tools to shed light on the future outcome of different investment strategies in order to provide information for MPO discussions and decision making. For *Charting Progress to 2040*, staff enlisted a number of new and/or enhanced planning tools and techniques to expand the scope of its traditional analytic methods.

### *New Tools and Data Sources*

The MPO upgraded its regional travel demand model set and inputs to the model with data from the most recent statewide household travel survey, and data from INRIX, a company that obtains real-time traffic data from drivers' mobile devices. For analytic purposes, historical INRIX data provides a level of detail that was previously unavailable. Another new vehicle was TREDIS (Transportation Economic Development Impact System), a suite of tools that provides economic impact forecasts, including the effects of changes in the transportation network on the movement of freight via truck in the region.



The MPO will continue to use these tools as it develops its performance-



based planning practice. They also would be used to explore key policy questions and to help the MPO understand the trade-offs among various capital investments.

## Scenario Planning

This LRTP represents a revitalized foray into scenario planning; a technique that, on an analytical level, allows stakeholders to compare the relative effects of different possible transportation solutions on variables of interest.

The MPO's use of scenario planning helped shed light on the relative merits of two different approaches to one of the objectives related to congestion: Using its target funds, should the MPO continue to use a *congestion reduction* approach by investing in major arterials and express highways? Or, should the MPO adopt a *capacity management* approach by investing in smaller-scale, but more diverse and geographically dispersed, O&M-type projects? To answer these questions, staff compared three scenarios to a base-case scenario using both the regional travel demand model set and off-model analyses, focusing for the most part on highway projects:

1. Current-LRTP Scenario—portrayed the MPO's current capital spending patterns
2. Operations and Management Scenario—took a congestion management approach that focused on lower-cost improvements, such as intersection improvements and Complete Streets
3. High-Capital Investment (High-Cap) Scenario—focused on high-cost capital projects, such as interchange upgrades and major bottleneck reconstruction

Because O&M-type projects generally do not increase capacity and cost less than $20 million per project, the MPO is not required to list them individually in the LRTP. Therefore, MPO staff developed a set of four O&M programs, each of which comprised a representative group of low-cost projects of a specific nature. These projects were drawn from the MPO's Needs Assessment and from the Universe of Projects (described in the Finalizing the LRTP section). For the purposes of this scenario-planning exercise, five investment programs were analyzed, including four programs that include O&M-type projects and one program that includes major capital investment projects:

1. Intersection Improvements
2. Complete Streets
3. Bicycle Network and Pedestrian Connections
4. Community Transportation and Parking
5. Major Infrastructure



Figure 2.2 provides more detail about these programs. Again, the scenario planning process done as part of this LRTP development focused mainly on highway projects to help the MPO to determine how it should program its target funds. Transit expansion and state of good repair projects were not included in these scenarios at this time because transit investments are based on recommendations from the MBTA, the regional transit agencies, and MassDOT's Rail and Transit Division. Low cost transit improvements were included in both scenarios (i.e. park and ride, shuttle services, and community-based transportation). Major transit projects will be addressed as part of MassDOT's Program for Mass Transportation and the MBTA's Capital Investment Program and in future scenario planning activities done as part of the MPO's performance-based planning program.

The results of the scenario analyses (Figure 2.3) show that there are greater benefits associated with the O&M approach than with large-scale infrastructure projects.

Results of the analysis helped the MPO finalize its goals and objectives and move toward the selection of a set of programs and projects to analyze in order to determine which ones to include in the LRTP. The MPO also adopted the O&M approach to programming in the LRTP. This new policy direction signaled a pivotal change in the MPO's approach to programming transportation investments. See Appendix A for detail about the scenario-planning process and its results.

## FIGURE 2.2
## Investment Programs

# PROGRAMS FOR ADDRESSING TRANSPORTATION NEEDS

## INTRODUCTION

The five programs included in the scenarios are described on the right. The descriptions provide information about how MPO staff estimated costs for types of projects that the program would fund.

To gauge the scenarios' performance, staff selected a number of indicators that correspond to the MPO's goals. To measure programs and projects that could have a regional impact, add capacity to the system, or change an attribute of the system—for example, change the amount of delay or capacity, add an alternative travel option, and so forth—staff utilized the MPO's regional travel demand model set. Staff used off-model sketch-planning techniques to generate performance data for other projects, particularly those that are lower in cost and have smaller footprints.

**KEY: MPO GOALS**

- **Safety**
- **System Preservation**
- **Capacity Management/ Congestion Reduction**
- **Clean Air/Clean Communities**
- **Transportation Equity**
- **Economic Vitality**



## INTERSECTION IMPROVEMENTS

**Description:** Modernizes existing signals or adds signals to improve safety and mobility. Improvements could also consist of turning lanes, shortened crossing distances for pedestrians, and striping and lighting for bicyclists. Improvements to sidewalks and curb cuts also will enhance accessibility for pedestrians. Updated signal operations will reduce delay and improve transit reliability.

Sample intersections for this program, which were used to estimate project benefits, were drawn from the TIP Universe of Projects, locations identified in past MPO studies, and the LRTP Needs Assessment. These projects were prioritized—first through determining if they are high-crash locations to address the MPO's safety goal, and then if they are located in high-priority-development, environmental justice, or Title VI areas.

**Estimated cost of intersection improvement projects:** Average of $2.8 million per intersection



## COMPLETE STREETS

**Description:** Modernizes roadways to improve safety and mobility for all users. Improvements could consist of continuous sidewalks and bicycle lanes, cycle tracks, and other bicycle facilities, as well as updated signals at intersections along a corridor. Improvements will reduce delay and improve transit reliability. Expanded transportation options and better access to transit will improve mobility for all and encourage mode shift.

**Estimated cost of Complete Streets projects:** $6 million per mile



## BICYCLE NETWORK AND PEDESTRIAN CONNECTIONS

**Description:** Expands the bicycle and pedestrian networks to improve safe access to transit, school, employment centers, and shopping destinations. Could include constructing new, off-road bicycle or multi-use paths, improving bicycle and pedestrian crossings, or building new sidewalks.

Sample bicycle and pedestrian projects for this program were selected using evaluated TIP projects, the MPO's Bicycle Network Evaluation, and bicycle travel market information from the 2011 Massachusetts Household Survey.

**Estimated cost of bicycle and pedestrian projects:** Varies (analysis uses available preliminary cost, or average of $2 million per mile)




## COMMUNITY TRANSPORTATION AND PARKING

**Description:** Includes a combination of the following types of projects:

- **Community Transportation:** Provides funding to launch locally developed transit services that support first-mile/last-mile connections to existing transit services and other destinations by purchasing shuttle buses and/or funding operating costs.
  **Estimated cost:** Assumed to cost $5 million over the 25-year life of the plan.
- **Park-and-Ride:** Targets funding to construct additional parking at transit stations that now are at capacity.
  **Estimated cost:** The average cost per parking space is $35,000.
- **Clean Air and Mobility Program:** Provides funding to projects (such as bike share projects or shuttle bus services) to improve mobility and air quality and promote mode shift.
  **Estimated cost:** Assumed to cost $50 million over the 25-year life of the plan.



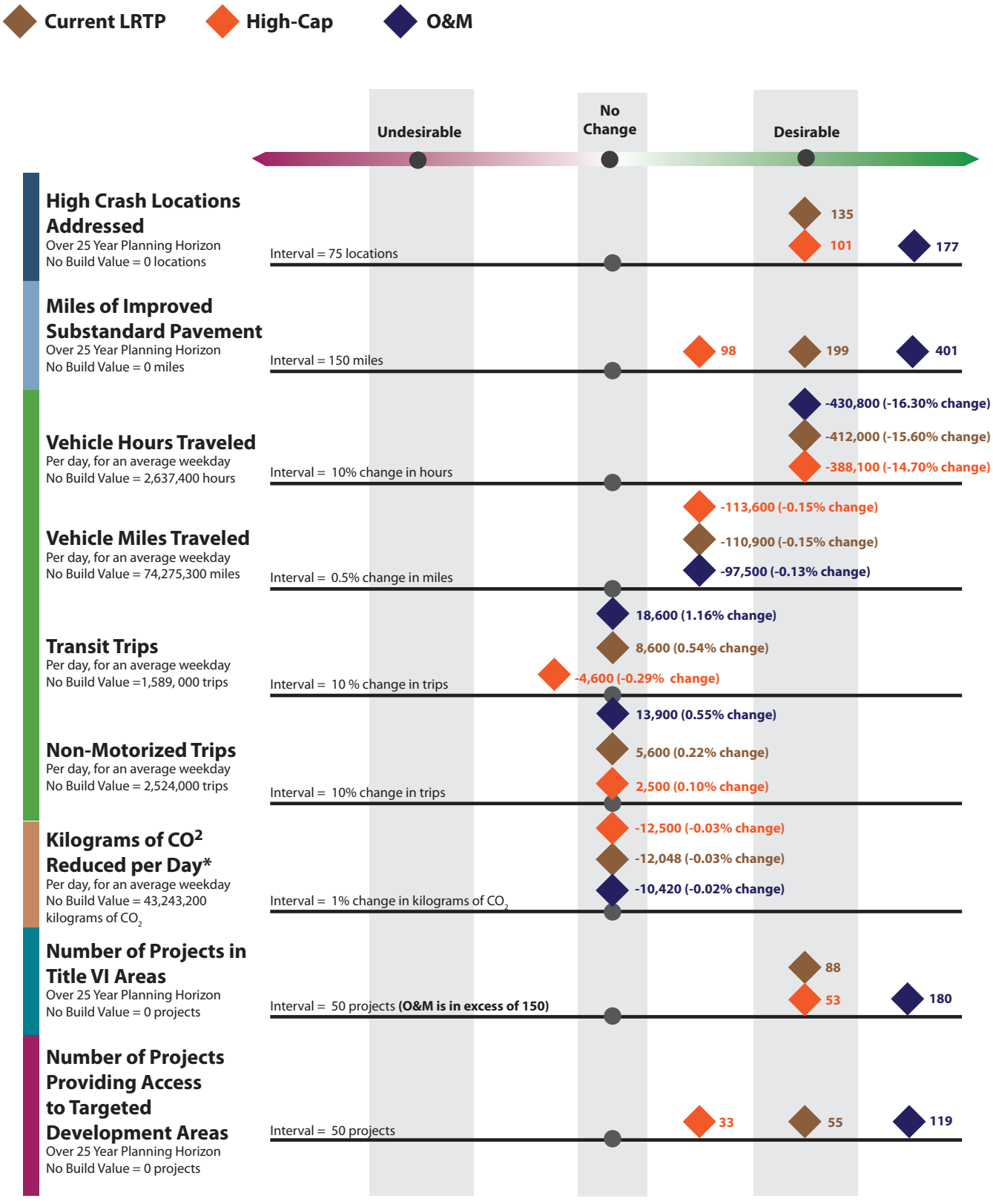
## MAJOR INFRASTRUCTURE

**Description:** Modernizes and/or expands major highways and arterials to reduce congestion and improve safety. Projects could include constructing expressway interchanges to eliminate weaving and reduce the likelihood of rollovers, adding travel lanes on expressways, or adding/removing grade separations on major arterials. The LRTP also considers transit (Green Line Extension from College Avenue to Mystic Valley Parkway/Route 16) using highway funds flexed to transit and bridge projects.

**Estimated cost per project:** Costs were associated with each project based on costs in current or past LRTPs, adjusted to current dollars, or costs from studies that were performed for selected locations, also adjusted to current dollars. Assumes eight interstate bottlenecks and five arterial projects.

Source:
Central Transportation Planning Staff.

# FIGURE 2.3
## Scenario Analyses Results




*Emission generated using MOVES 2010B

Source: Central Transportation Planning Staff.

# FINALIZING THE LRTP

The final phase of LRTP development included selecting and analyzing projects and programs to include in the LRTP. The previous steps in the planning process discussed in this chapter laid the groundwork for finalizing the LRTP. Also of critical importance to selecting projects and programs was the MPO's public participation process (discussed in the Public Participation section).

## *Universe of Projects and Programs*

The projects and programs selected for the LRTP were drawn from the Universe of Projects and Programs: a comprehensive list of regional highway and transit projects compiled by MPO staff. Each project is associated with one of the five programs used in scenario planning (see Figure 2.2) or a sixth program — transit. The MPO used the Universe to develop the draft list of projects and programs for public review and the final list to include in this LRTP. The Universe of Projects and Programs includes the following projects that:

- Already have been programmed in the LRTP and TIP (excluding the first year of the current TIP) for highway and transit modes
- Are identified as important for meeting the region's transportation needs, as described in the MPO Needs Assessment
- Have emerged as recommended from studies conducted by the MPO and other entities in the region
- Are included in the current MBTA Program for Mass Transportation and in the MBTA Capital Investment Program, and others recommended by the MBTA

The projects in the Universe of Projects and Programs list are sorted by program type, and are cited in Appendix B of this document.

## *Project Evaluation*

The MPO applied its goals and objectives as criteria in a qualitative evaluation of the major infrastructure and capacity-adding highway projects in the Universe of Projects and Programs that had been sufficiently well-defined to allow for analysis. The assessment of how well projects would address the MPO's goals and objectives helped the MPO identify priority projects for its major infrastructure program. See Appendix C for project evaluations and documentation on the evaluation process.

Based on its decision to support the programming of more O&M-type projects, the MPO set aside a specific amount of funding for each of its six investment programs:

Intersection Improvements, Complete Streets, Bicycle Network and Pedestrian Connections, Community Transportation and Parking, Flex to Transit, and Major Infrastructure. The MPO then allocated funding in the six programs across the five-year time bands within this LRTP (federal fiscal years 2016–20, 2021–25, 2026–30, 2031–35, and 2036–40).

## Transportation Finances

The finance plan is an important part of the LRTP, which is required to be a financially constrained document. While the financial assumptions for this LRTP include an increase in funding during the first five years of this 25-year LRTP, there is less funding available for the remaining 20 years of the LRTP. The previous LRTP allowed for an increase in revenue of three percent per year; the revenue assumption for this LRTP was reduced to one-and-a-half percent per year. Therefore, the MPO needed to scale back its commitments to projects that were included in the previous LRTP. Project cost increases because of applying inflationary factors (four percent per year) also affected funding availability in the later time bands. The MPO's decision to set aside funding for O&M programs helped the MPO adapt to these funding constraints. See Chapter 4 for detailed information about finances for this LRTP.

## Project Selection

The next step in defining the draft list of recommended projects and programs involved balancing two MPO policies. First, the MPO has a policy of maintaining its previous LRTP and TIP programming commitments, which favored funding major infrastructure. Second, as discussed above, during the LRTP development process the MPO adopted the O&M approach to programming, and a new policy of giving priority to low-cost projects. Overall, it is the MPO's intent to ensure that its goals are advanced through project and program selection.

To understand the balance between these policies, the MPO asked staff to develop two funding alternatives for consideration: one that continues to program all of the projects in *Paths to a Sustainable Region (*the previous LRTP) in *Charting Progress to 2040*; and a second alternative that programs approximately half of the MPO's target funds (those over which the MPO has decision-making power) to major infrastructure projects and reserves the rest for O&M programs. These two alternatives were examined and discussed by the MPO over the course of four meetings. The MPO ultimately adopted the second alternative to program half of its target funds to major infrastructure and the other half for O&M programs.

Chapter 5 presents a detailed description of the project selection process, along with a list of the projects and programs selected for this LRTP.

## *Final Steps*

MPO staff performed the following analyses on the MPO's draft list of recommended projects and programs:

- Air Quality Conformity Analysis—ensures that the LRTP is consistent with the Commonwealth's plans for attaining and maintaining air-quality standards (see Chapter 8 for details)
- Transportation Equity (TE) Analysis—ensures that the recommended set of projects and programs provides equitable benefits to both TE and non-TE populations (see Chapter 7 for details)
- Greenhouse Gas Analysis—documents the process for reporting carbon dioxide emissions associated with the projects and programs being included in the LRTP, as required for implementing the Massachusetts Global Warming Solutions Act. (See Chapter 8 and a separate air quality report to be released at the end of August 2015 for details)

The MPO subsequently adopted the draft list of recommended projects and programs for public review. The MPO received comments from the public and reviewed and responded to them. *Charting Progress to 2040* was endorsed by the MPO on July 30, 2015.

# PUBLIC PARTICIPATION

## *Background*

In several important ways, the public involvement process for this LRTP was more extensive and effective than any other previously conducted by the MPO. Largely, this was because of the recent update of the Public Participation Plan, which details the MPO's outreach via its Public Participation Program. The updated plan and program reinforced the MPO's commitment to, respect for, and enthusiasm about the needs and interests of members of the public. The MPO is working to make public participation convenient, inviting, and engaging for everyone. It has stepped up activities to break down barriers for people who have traditionally participated only minimally in the 3C process, such as those with limited English proficiency or disabilities.

Updating the LRTP was the MPO staff's first opportunity to implement many of the new activities in the Public Participation Program. Public outreach for the LRTP consisted of public meetings, workshops, and forums throughout the year-and-a-half preceding the MPO's endorsement of the LRTP. Electronic media and web-based tools were important avenues for public outreach and information gathering, and were crucial in expanding the conversation to more people and diverse populations. Translating notices of meetings and other events into several languages and collaborating with MAPC opened

doors to new constituencies and set up communication paths that are both comfortable for members of the public and fruitful for generating input to the MPO. In addition, MPO staff continued to use graphics and other visual presentations to communicate information to the public and seek their feedback.

## Public Outreach Methods

### PUBLIC MEETINGS, WORKSHOPS, AND FORUMS

While this LRTP was being developed, staff conducted public outreach through a number of different means for a variety of audiences:

- *Regional Transportation Advisory Council*: The Advisory Council is an independent group charged with providing public input to the MPO, and specifically, input for the MPO's certification documents, such as the LRTP. Monthly Advisory Council meetings provide a forum for broad-based and robust discussions of transportation issues. MPO staff briefed the Advisory Council, or its LRTP Committee, on the LRTP nine times within the year-and-a-half before adopting the draft LRTP; in each briefing, staff provided information, answered questions, and recorded Advisory Council members' comments.

- *Fall Forum:* The MPO hosted a fall forum at the Boston Public Library on September 22, 2014, to gather public feedback on the vision, goals, and objectives of *Charting Progress to 2040*. The forum included a presentation on developing the LRTP, followed by a question-and-answer session.

  Public notification for that and all other MPO-sponsored events followed the MPO's standard practice: the invitation to participate was distributed through all MPO media, including the MPOinfo email distribution list, website news flashes, press releases, and Twitter. Notices were translated into Spanish, Portuguese, Chinese, and Vietnamese. Invited participants included transportation, environmental, land-use planning agencies, interest groups; state, regional, and municipal officials; transportation equity contacts (which include councils on aging, social service organizations, community-action organizations, and neighborhood groups working in, or supporting, low-income or minority communities); professional and advocacy groups involved in transportation and environmental issues; business organizations; entities involved with the movement of freight; and transit service providers.

- *MAPC Subregional*[1] *Outreach Meetings:* During the public outreach period for the MPO's vision, goals, and objectives and the Needs Assessment (fall 2014), MPO staff attended meetings of all eight MAPC subregional groups, which are made

1 The MAPC region is geographically divided into eight subregions.

up of municipal officials, and a meeting of the I-495/MetroWest Partnership.[2] Staff provided information and received a number of comments, which were summarized and presented to the MPO (see Appendix D). Staff also attended five multi-subregional meetings in the spring of 2015 to solicit feedback and additional guidance on the draft LRTP.

- *MAPC Winter Council Meeting:* On February 25, 2015, MAPC devoted its annual winter council meeting to a discussion of the LRTP. Attendees participated in an interactive exercise to experience the challenges of meeting the region's transportation needs with existing resources and to weigh in on transportation priorities for the region. Feedback from the exercise was summarized and presented to the MPO (see Figure 2.5 below and information in Appendix D).
- *Focus-Group-Style Open House:* The MPO held a public Open House specifically designed to facilitate ad hoc focus group participation in accordance with the participants' interests. MPO staff facilitated discussions at topic-related stations to engage interested participants in conversation about transportation issues, needs, and solutions. Topic stations included:
    - Climate Change, the Environment, and Air Quality
    - Active Transportation Modes/Sustainability
    - Transportation Equity
    - Transit and Community Transportation
    - Freight Planning
    - Funding Investment Strategies

    Participants in the Focus-Group-Style Open House had the opportunity to provide recommendations about the MPO's funding allocations among various investment programs.
- *Draft LRTP Input Meetings*: The MPO sponsored two workshops in June 2015, during the public comment period on the draft LRTP, one held in Boston and the other in Everett.

## ELECTRONIC MEDIA AND TOOLS

In keeping with contemporary communication techniques, staff utilized electronic media and other tools to engage the public and solicit their feedback:

2 The I-495/MetroWest Partnership is a public-private collaboration of businesses, municipalities, and other stakeholders that meet to cultivate sustainable growth in the MetroWest region.

- *Charting Progress to 2040 Webpage:* The MPO's website is a vital medium to provide the public with information and collect feedback. This webpage contains background information about how the LRTP was developed and how the public could be involved throughout the process, as well as materials that were used in developing the LRTP.
- *Interactive Online Needs Assessment Application*: This tool allows the public to view, download, and map transportation and socioeconomic data used by the MPO and its staff to evaluate the region's transportation needs. It also allows interested parties to submit comments about the region's transportation needs.
- *Online Surveys:* MPO staff developed online surveys to solicit feedback, first on the draft vision, goals, and objectives, and then, in the spring of 2015, on various issues related to the draft LRTP. Staff analyzed results from the responses received from the first survey, which were analyzed, reported to the MPO, and used by the MPO as it defined its vision, goals, and objectives (see Incorporating Feedback from the Public section below and Appendix D).

  During the public comment period for the draft *Charting Progress to 2040* LRTP, a series of seven mini-surveys, administered during May and June 2015, were circulated to collect feedback on the MPO's list of recommended projects and programs. They captured specific feedback from participants at MPO-sponsored or MAPC-sponsored meetings, and online participants, many of whom may have been unable to attend one of the meetings (see Appendix D).
- *Other Electronic Media:* Staff utilized a number of other electronic tools to distribute information and collect input, including the News Flash feature of the MPO's website, to publicize public participation opportunities and new materials; an email distribution list, MPOinfo, to distribute LRTP-related information and notices; *TransReport*, the MPO's electronic newsletter; Twitter, to quickly communicate LRTP-related news; press releases emailed to news outlets; and the comment section of the website to solicit public input.

## Incorporating Feedback from the Public

### VISION, GOALS, AND OBJECTIVES

Public feedback on the MPO's vision, goals, and objectives was obtained through the fall forum, subregional outreach meetings, and the online surveys described above, as well as from written comments submitted through the website and via email. Several trends identified from the public feedback were reflected in the final vision, goals, and objectives, such as:

1. A more transformative vision that reflects and supports new technologies
2. A more direct link between the goals of congestion reduction and transportation options/healthy modes

3. Promotion of increased transit choices, improved transit reliability, and transit that goes beyond the needs of typical commuters in the transportation options/healthy modes goal

A snapshot of the feedback on the vision, goals, and objectives generated from the first online survey is shown in Figure 2.4. The ranking of the goals makes clear that the public's top priority is transportation options/healthy modes, as well as safety. It also shows that, overall, the MPO's vision aligns well with the public's vision for the future of transportation in the region.

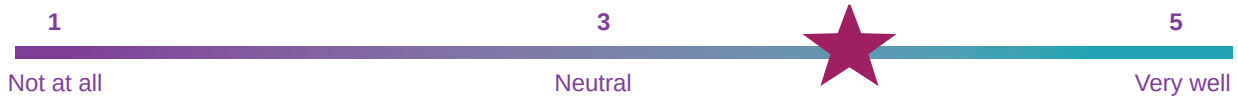
## FIGURE 2.4
## Public Ranking of Goals
## (Raw scores in parentheses; a lower score indicates a higher priority.)

1. **Transportation Options/Healthy Modes (132)**
2. **Safety (175)**
3. **Greenhouse Gas (GHG)/Air Pollution/Environment (253)**
4. **System Preservation (263)**
5. **Transit Equity (265)**
6. **Congestion Reduction (267)**
7. **Economic Vitality and Freight Movement (317)**

When asked the following question:

> How well does the MPO's proposed vision for transportation in the region align with your own vision?

Members of the public on average felt the MPO's vision match their vision as well (3.9 out of 5).




Source: Central Transportation Planning Staff.

## REGIONAL NEEDS

The overwhelming majority of public comments on regional needs were related to transit and non-motorized modes, which is consistent with the public's prioritization of the transportation options/health modes goal. Many respondents:

- Saw areas of need for all modes, including bike/pedestrian infrastructure, increased train and bus transit options, more commuter rail service, expanded ferry service, and better links to existing transit
- Commented on the need for more transit in suburban environments, first-mile-last-mile transit connections, increased parking at transit stations, and transit service that accommodates an aging population
- Expressed concern about pedestrian safety in the region
- Voiced concern about congestion on arterials throughout the region

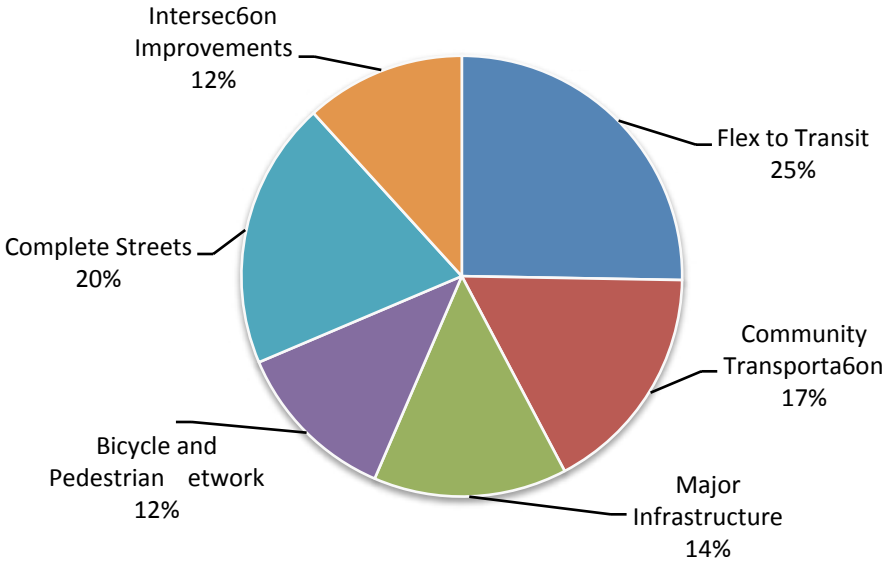
See Appendix D for a full summary of comments on regional needs.

## INVESTMENT STRATEGIES

At the MAPC winter council meeting, participants at 15 tables completed an exercise in which they had to decide how much funding to allocate to each LRTP program. Overall, the average of the allocations of the "tables" suggests a more balanced allocation of funding for transportation investments than the MPO has practiced (see Figure 2.5). Responses from all the tables:

- Demonstrated a preference for increasing the share of resources directed to the Community Transportation and Parking program (17 percent, on average), an increase from the MPO's past two percent investment
- Showed a preference for spending substantially less on Major Infrastructure (14 percent, on average) a decline from the 54 percent that the MPO has allocated in the past
- Indicated a preference for allocating a substantial portion of the MPO's budget to the Flex to Transit program (25 percent, on average), an increase from the MPO's past allocation of three percent to transit (from highway funding) in the past

## FIGURE 2.5
## Average Allocation of Funding for MPO Projects




Source: Central Transportation Planning Staff.

See Appendix D for details on the winter council meeting results and a summary of comments received during the LRTP development process.

In addition, a second online survey, consisting of seven mini-surveys was released between May 15 and July 15, 2015, to collect additional feedback from the public on investment strategies. Respondents were asked their views about transportation needs in the region and where they think funding should be allocated. A summary of the survey results is provided in Appendix D.

# 3 TRANSPORTATION NEEDS IN THE BOSTON REGION

## BACKGROUND

A critical early step in developing the LRTP was to gather, organize, and analyze available sources of data about the existing transportation system. This process resulted in the MPO's Needs Assessment, an interactive online database of transportation, population, and employment conditions. MPO staff used the Needs Assessment application to analyze various components of the transportation system, their capacity, serviceability, and current and projected use. The Needs Assessment also includes a report that summarizes the region's future transportation requirements based on staff's analysis.

Not only did the Needs Assessment analysis guide the MPO when deciding how to address the region's needs through the LRTP, it also will guide future decision making about which projects to fund in the TIP, and which studies to conduct through the UPWP. The Needs Assessment also establishes a baseline for the MPO's performance-measurement process, which will track progress over time to determine whether planned changes to the transportation system are moving the MPO toward its goals and objectives.

This chapter presents a summary of the region's needs (described in full in a separate Needs Assessment document). Both the Needs Assessment document and the interactive Needs Assessment application may be accessed through the MPO's website at http://www.ctps.org/Drupal/charting_2040_needs.

Information in this chapter—and the online Needs Assessment document—has been organized according to the LRTP's goals (Chapter 1), which staff used to evaluate projects for scenario planning and project selection for the recommended LRTP (Chapter 5), and are related to the topics of:

- Safety
- System Preservation
- Capacity Management and Mobility
- Clean Air and Clean Communities
- Transportation Equity
- Economic Vitality

The online Needs Assessment document includes the following chapters, which contain details about the needs, as well as the conditions that create the needs:

- Chapter 1 – Introduction: describes the study area and data resources used to inventory and assess the region's transportation needs
- Chapter 2 – Land Use in the Boston Region MPO: provides an overview of the region's current land use, and that which is projected to occur between now and 2040
- Chapter 3 – Travel Patterns in the Boston Region MPO: describes the region's current travel patterns (under base-case 2012 conditions), and those which are projected to occur between now and 2040 if there are no improvements to the transportation system (no-build conditions)
- Chapter 4 – Regionwide Needs Assessment: reports on the regional high-priority needs for the next 25 years

## DEFINITION OF THE STUDY AREA

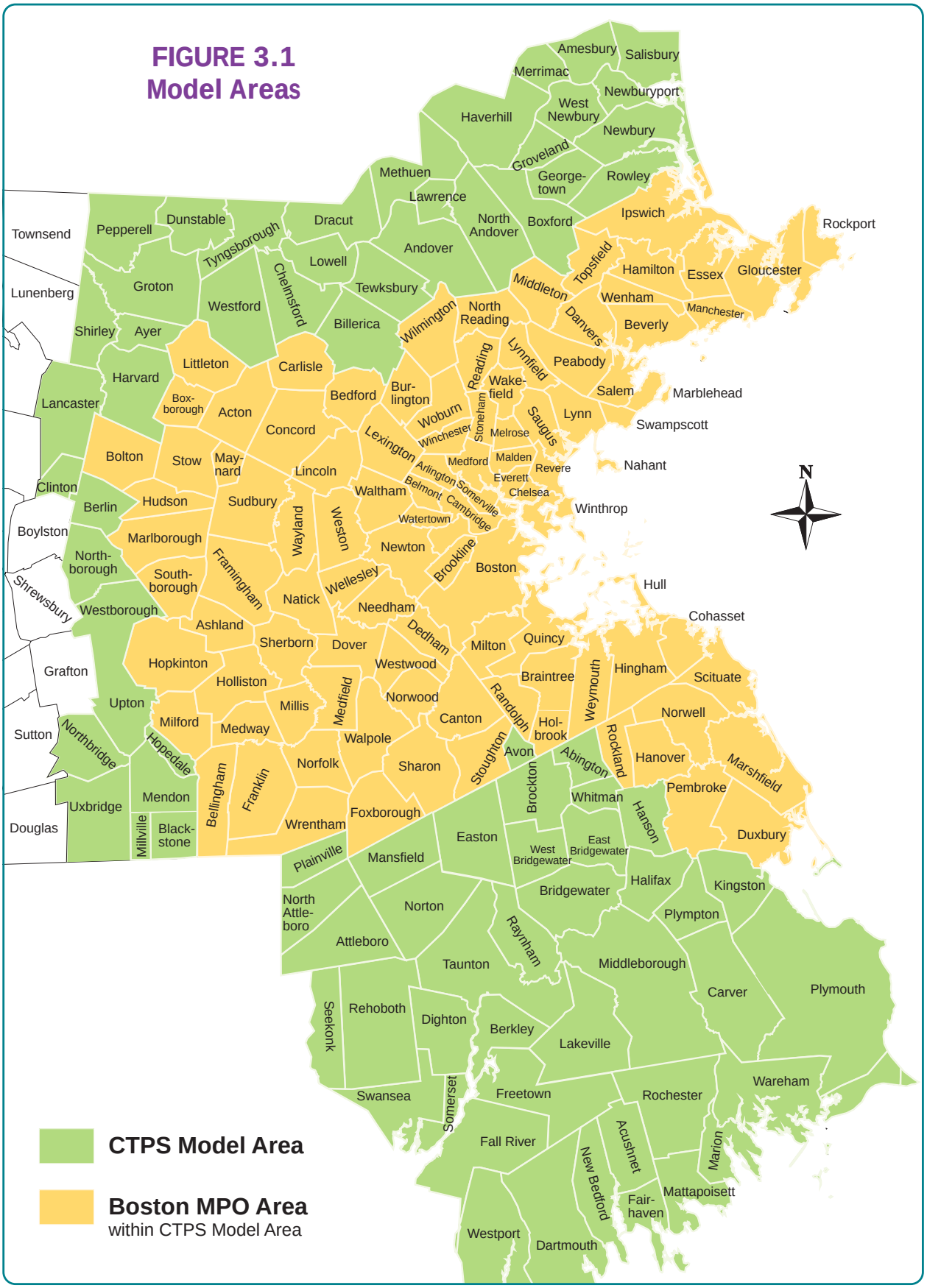
For transportation planning purposes, the MPO maintains a travel demand model, which includes the 101 municipalities in the MPO region plus an additional 63 municipalities adjacent to the MPO area (see Figure 3.1). While the Needs Assessment addresses only the needs of the municipalities in the MPO, it does take into consideration conditions and travel activity in other parts of the larger region that affect the MPO.

## INFORMATION INCLUDED IN THE NEEDS ASSESSMENT

The Needs Assessment incorporates information from previous and ongoing transportation planning work—including the *Paths to a Sustainable Region* LRTP, the MBTA's *Program for Mass Transportation*, the MPO's Congestion Management Process (CMP), transportation equity outreach, MPO studies, and special studies—for data inputs.

Staff also used the MPO's travel demand model and draft demographic projections in the Needs Assessment, as existing and projected socioeconomic information (population, housing, and employment data) and the existing and proposed transportation network were important factors in determining transportation needs. In the modeling process, the adopted LRTP used a base year of 2012 and a future year of 2040 for the transportation network and socioeconomic data.

# FIGURE 3.1
# Model Areas



# PRIORITIZED REGIONAL NEEDS

The following sections offer an overview of transportation system's needs for the next twenty-five years. Detailed information about each goal may be found in Chapter 4 of the Needs Assessment, which also includes:

- The goals and related objectives for each goal
- Background information for each goal
- The policy context that surrounds each goal, including:
  - Related initiatives and directives
  - Relevant studies, reports, and documents.
- Contributing resources
- Public input on transportation needs
- Potential programs that would help address each goal

## *Safety*

### SAFETY PROBLEM STATEMENT

Overall, safety in the region's transportation system has been improving. However, at the same time certain types of crashes and resultant injuries have increased. Reducing the number of transportation-related accidents, injuries, and fatalities—as well as related property damage, pain, and suffering—is the MPO's highest priority.

### SAFETY NEEDS

Despite the overall reduction in the number of crashes, fatalities, and injuries between 2006 and 2012, the number of crashes and injuries involving pedestrians and bicyclists rose: pedestrian crashes increased by 18 percent, and injuries grew by 31 percent; bicycle crashes increased by 36 percent, and injuries jumped by 46 percent. Roughly two-thirds of pedestrian and bicycle crashes resulted in an injury.

Staff identified safety needs by analyzing data for high crash locations, intersections, and lane departures, as well as accidents involving pedestrians, bicyclists, and trucks. Tables 3.1–3.3 display summary information about the region's safety needs.

## TABLE 3.1
## Safety Needs in the Boston Region MPO

| Emphasis Area | Problem | Description of Needs |
|---|---|---|
| High Crash Locations | The number of all crashes should be reduced. Pedestrian and bicycle crashes and injuries are rising; 46% of these result in injury. | Top 25 Crash Locations (*see Table 3.2 for a list of locations)*<br><br>Facilities to improve safety for bicycles and pedestrians are needed. |
| Intersections | More than one in five fatalities occurs at an intersection. | Seventy-nine of the state's Top-200 Crash Locations are in the Boston Region. Roadway corridors with multiple Top-200 Crash Locations are:<br>• Route 9, Natick and Framingham<br>• Route 18, Weymouth<br>• Route 107, Lynn<br>• Route 16, Newton and Wellesley<br>• Route 126, Bellingham<br>• Route 16, Milford |
| Lane Departures | Lane departure crashes cause 55% of roadway fatalities and 24% of incapacitating injuries.<br><br>Interstates make up 5% of lane miles, yet account for 15% of lane departure crashes.<br><br>Arterials account for less than 25% of lane miles but more than 50% of lane departure crashes. | Roadways with significant numbers of lane departure crashes include:<br>• I-93 between I-90 and I-95 Northbound and Southbound<br>• I-495 between I-90 and I-95<br>• Route 3, Weymouth<br>• Route 1, Chelsea and Revere<br>• The Jamaicaway, Boston<br>• Soldiers Field Road, Boston |
| Pedestrians | One of the state's nine strategic areas and an ongoing focus of the Boston Region MPO.<br><br>In the Boston region, pedestrians comprise a growing share of crashes and a disproportionately high share of injuries. | MassDOT Highway Safety Improvement Program (HSIP) Crash Cluster locations:<br>*Downtown areas of*: Boston, Chelsea, Framingham, Lynn, Malden, Natick, Peabody, Salem, Waltham, and Wellesley<br>*Corridors in*:<br>• Cambridge (Massachusetts Avenue)<br>• Quincy (Hancock Street)<br>• Newton (Newton Centre)<br>• Watertown (Watertown Square)<br>• Somerville (Davis Square)<br>*Suburban Areas*: many arterials and local roadways where sidewalk coverage is inadequate |

## TABLE 3.1
## Safety Needs in the Boston Region MPO (cont.)

| Emphasis Area | Problem | Description of Needs |
|---|---|---|
| Bicyclists | In the Boston region, bicyclists comprise a growing share of crashes and a disproportionately high share of injuries. | MassDOT HSIP Bicycle Cluster locations:<br>*Downtown areas of*: Beverly, Chelsea, Framingham, Lexington, Lynn, Natick, and Salem<br>*Corridors in*:<br>• Boston (Commonwealth Avenue)<br>• Brookline (Harvard Street)<br>• Arlington (Massachusetts Avenue)<br>• Cambridge,(Massachusetts Avenue)<br>• Waltham (Main Street)<br>• Somerville (Beacon Street and Somerville Avenue)<br>Regionwide: bicycle infrastructure is limited; bike paths and other infrastructure are needed in all areas of the region. |
| Trucks | One of the state's four proactive emphasis areas; trucks account for a greater proportion of crash severity than other modes—approximately five percent of crashes and nine percent of fatalities between 2006 and 2012 | MPO Compiled High Crash locations are at older interchanges with obsolete designs:<br>• I-95 interchanges at I-93 in Woburn<br>• I-90 in Weston<br>• I-93 in Canton<br>• I-95 interchanges at Route 1 in Dedham<br>• I-95 and Middlesex Turnpike in Burlington<br>• I-95 and Route 138 in Canton |

Source: Central Transportation Planning Staff.

## TABLE 3.2
## Top-25 Highway Crash Locations in the Boston Region MPO

| Location | Municipalities | EPDO | Top 200 | HSIP Crash Cluster | Truck Crash Cluster | Pedestrian Crash Cluster | Bicycle Crash Cluster |
|---|---|---|---|---|---|---|---|
| Interstate 93 at Columbia Rd | Boston | 464 | • | • | • | | • |
| Middlesex Turnpike at Interstate 95 | Burlington | 388 | | • | • | | |
| Rte 3 at Rte 18 (Main St) | Weymouth | 339 | | • | • | | |
| Interstate 93 (Near Ramps for Furnace Brook Parkway) | Quincy | 330 | | • | • | | |
| East St Rotary at Rte 1 and Rte 128 | Westwood | 328 | | • | • | | |
| Interstate 95 at Interstate 93 | Reading | 326 | • | • | • | | |
| I-93 at Granite Ave (Exit 11) | Milton | 325 | | • | • | | |
| Interstate 95 at Route 2 | Lexington | 324 | | • | • | | |
| Rte 9 at Interstate 95 | Wellesley | 320 | | • | • | | |
| I-93 at North Washington St | Boston | 319 | | • | | • | |
| I-93 at Rte 138 (Washington St) | Canton | 316 | | • | • | | |
| I-93 at Rte 3A (Gallivan Blvd/Neponset Ave) | Boston | 271 | | • | • | | |
| Interstate 95 at Rte 4 (Bedford St) | Lexington | 270 | | • | • | | |
| Rte 18 (Main St) at West St | Weymouth | 247 | • | • | • | | |
| Interstate 93 at Rte 37 (Granite St) | Braintree | 245 | • | • | • | | |
| Rte 139 (Lindelof Ave) at Rte 24 | Stoughton | 240 | | • | | | |
| Interstate 93 at Leverett Connector | Boston | 236 | | • | | | |
| Interstate 93 at Route 28 | Medford | 233 | • | • | • | | |
| Rte 128 at Rte 114 (Andover St) | Peabody | 219 | | • | • | | |
| I-93 at Rte 28 and Mystic Ave | Somerville | 214 | • | • | • | | |
| Storrow Dr at David G. Mugar Way | Boston | 212 | | • | | | |
| Rte 28 (Randolph Ave) at Chickatawbut Rd | Milton | 203 | • | • | | | |
| Rte 2 – Crosby's Corner | Concord/Lincoln | 200 | • | • | | | |
| Rte 1 at Route 129 | Lynnfield | 194 | | • | • | | |
| Rte 1 at Route 129 (Walnut St) | Saugus | 193 | | • | | | |

EPDO = Equivalent Property Damage Only. HSIP = Highway Safety Improvement Program.
Source: MassDOT Registry of Motor Vehicles.

## TABLE 3.3
## Locations with Multiple Safety Needs

| Location | Municipalities | Top 200 | HSIP Crash Cluster | Truck Crash Cluster | Pedestrian Crash Cluster | Bicycle Crash Cluster |
|---|---|---|---|---|---|---|
| Downtown Framingham | Framingham | • | • | • | • | • |
| Rte 20 (Main St) and Moody St | Waltham | • | • | • | • | • |
| Watertown Square | Watertown | • | • | • | • | • |
| Washington St | Salem | • | • | • | • | • |
| Everett Ave | Chelsea | • | • | • | • | • |
| Essex St | Lynn | • | • | | • | • |
| Rte 107 (Western Ave) | Lynn | • | • | • | • | |
| Massachusetts Ave | Arlington | • | • | • | • | |
| Rte 16 (Alewife Brook Parkway) | Arlington, Somerville, Cambridge | • | • | • | | • |
| Broadway | Chelsea | | • | • | • | • |
| Newtonville | Newton | | • | • | • | • |
| Rte 16 (East Main Street) | Milford | • | • | • | | |
| I-495 at Rte 126 (Hartford Ave) | Bellingham | • | • | • | | |
| Downtown Quincy | Quincy | • | • | | • | |
| I-95 at Rte 16 (Washington St) | Newton | • | • | • | | |
| Rte 16 (Revere Beach Parkway) | Revere, Everett, Medford | • | • | • | | |
| I-495 at Route 1A (South Street) | Wrentham | • | • | • | | |
| Rte 20 (East Main Street) | Marlborough | • | • | • | | |
| Rte 9 | Framingham, Natick | • | • | • | | |
| Downtown Natick | Natick | | • | | • | • |
| Downtown Lynn | Lynn | | • | | • | • |
| Rte 1A | Lynn | | • | • | • | |
| Rte 28 (McGrath Hwy) at Washington St | Somerville | | • | | • | • |
| Newton Center | Newton | | • | | • | • |
| Cambridge Street | Cambridge | | • | | • | • |
| Rte 16 (Mystic Valley Parkway) | Medford | | • | • | • | |

HSIP = Highway Safety Improvement Program.
Source: MassDOT Registry of Motor Vehicles.

# System Preservation

## SYSTEM PRESERVATION PROBLEM STATEMENT

The region's transportation infrastructure is aging and heavily used, and demands on roadway and transit facilities have stressed them to the point that routine maintenance is insufficient to keep up with necessary repairs. The result is a significant backlog of maintenance and SGR projects on all parts of the transportation system, including bridges, roadway pavement, transit rolling stock, and traffic and transit control equipment. In addition, parts of the transportation system may be compromised if climate-change trends continue as projected.

## SYSTEM PRESERVATION NEEDS

The system needs to be brought into an SGR, maintained at that level, and enhanced to ensure personal mobility, efficient movement of goods, and protection from potential sea-level rising and storm-induced flooding.

The region's financial constraints require the MPO to set priorities, considering the most crucial maintenance needs and the most effective ways to deploy funding. At the same time, the MPO must improve the resiliency of infrastructure that could be affected by climate change.

The MPO's uses its TIP evaluation criteria to determine whether a project improves substandard pavement, signal operations, intermodal accommodations and connections to transit; it implements intelligent operations system strategies to assess and prioritize the system's preservation and maintenance needs for projects it considers for funding (see Table 3.4).

## TABLE 3.4
## System Preservation Needs in the Boston MPO Region

| Emphasis Area | Problem | Description of Needs |
|---|---|---|
| Bridges | Of the 2,866 bridges in the region:<br>• 559 (19%) are functionally obsolete<br>• 154 (5%) are structurally deficient<br>Bridge Health Index:<br>• 33% are in good condition (a score of 85 or higher)<br>• 36% are in less-than-good condition (1.5% are in the worst condition – 0)<br>• 31% do not have recorded core element data to calculate a rating | Meet the MassDOT performance measure to prevent the number of structurally deficient bridges from exceeding 463 statewide<br><br>Meet the MassDOT performance measure to maintain a systemwide bridge health index of at least 81.98 |
| Pavement Management | MassDOT-maintained roadways:<br>• 70% in good condition<br>• 25% in fair condition<br>• 5% in poor condition | MassDOT-maintained arterial roadways make up 62% of monitored roadways, however 90% of the arterial roadways are in poor condition; larger expanses of arterials in poor condition are located in: Boston, Cambridge, Chelsea, Everett, Lynn, Malden, Medford, Newton, Revere, and Somerville |
| Transit Infrastructure and Rolling Stock | Transit system needs to be brought into SGR<br><br>Maintaining existing capital assets must be the highest priority | SGR and Maintenance Needs:<br>• Green Line signals<br>• Commuter rail bridges (44 structurally deficient)<br>• Commuter rail coaches and locomotives<br>• Rapid transit cars (Red and Orange Lines)<br>• Presidential Conference Cars (PCC) for Mattapan High Speed Line<br>• Station Accessibility (33 commuter rail and 38 rapid transit) |
| Freight Network | Many express highways are built to outdated design standards for trucks | Needs include:<br>• Maintaining and modernizing the roadway network<br>• Improved connections between intermodal facilities and regional road network<br>• Maintaining truck access on complete streets-designed roadways |
| Climate Change Adaptation | Some transportation infrastructure, including tunnels, is in hazard areas and locations that are vulnerable to inundation, among other hazards. | The Central Artery and other infrastructure may need retrofitting or other adaptations to protect them from the impacts of hazards and climate change |

Source: Central Transportation Planning Staff.

# Capacity Management and Mobility

## CAPACITY MANAGEMENT AND MOBILITY PROBLEM STATEMENT

Reducing congestion and managing the capacity of all transportation infrastructure and services is essential to increase mobility, decrease vehicle emissions, promote healthy travel options, and ease disruption and economic losses caused by travel delay.

## CAPACITY MANAGEMENT AND MOBILITY NEEDS

Although increasing capacity has long been a strategy to reduce congestion, its effects have not proved long lasting. The MPO now is adopting capacity and mobility strategies that enhance the system through O&M type projects, such as improving access and connectivity to transit services, closing gaps and reducing bottlenecks for all modes, completing the bicycle and pedestrian networks, and providing for first- and last-mile connections.

The MPO identified capacity and mobility needs by analyzing the reliability and capacity of roadway and transit infrastructure and services, and the connectivity of transit, pedestrian, and bicycle infrastructure (see Table 3.5).

**TABLE 3.5**
**Capacity Management and Mobility Needs in the Boston Region MPO**

| Emphasis Area | Problem | Description of Needs |
|---|---|---|
| Roadway Reliability Needs | The Needs Assessment identified a priority set of expressway and arterial congested locations using speed- and travel-time indices, volume-to-capacity ratios, and crashes as factors. Addressing these locations will also address truck freight concerns. | Priority congested locations – Expressways:<br>• I-93 between I-95 in Woburn and the Leverett Connector<br>• I-93 between the Braintree Split and the Massachusetts Ave Interchange<br>• US 1 between Route 60 in Revere and Route 99 in Saugus<br>• Route 128 at Lowell Street, Exit 26, in Peabody<br>• I-90 between Interchanges 16 and 17 in Newton<br>• I-95 between I-93 in Woburn and US 1 in Lynnfield<br>Priority congested locations – Arterial Corridors 24 locations (see Figure 3.2):<br>• Northeast (3)<br>• Northeast/Central (1)<br>• North (1)<br>• North/Central (2)<br>• Northwest (4)<br>• Northwest/Central (2)<br>• West (5)<br>• Southwest (2)<br>• Southeast (4) |

## TABLE 3.5
## Capacity Management and Mobility Needs in the Boston Region MPO (cont.)

| Emphasis Area | Problem | Description of Needs |
|---|---|---|
| Transit Reliability Needs | Maintain the MBTA performance measures for transit reliability | Needs include service standards adherence:<br>• Only 7.6 percent of all bus routes passed the MBTA service-adherence standard<br>• On-time performance goals (95%) were not met by the Orange Line or the commuter rail system<br>• The commuter rail system did not meet the locomotive mean miles between failures goal |
| Transit Capacity Needs | A number of major infrastructure constraints on the MBTA system limit capacity and hinder expansion | Infrastructure constraints include:<br>• South Station – additional tracks, terminal expansion, and related layover capacity (for current and future high-speed, intercity, and commuter rail service)<br>• Single track sections of the Haverhill, Fitchburg, Franklin, Stoughton, Needham, and Old Colony Lines<br>• The Green Line's central subway tunnel (currently operating at capacity)<br>• Orange Line peak hours capacity between Downtown Crossing and North Station<br>• Park-and-Ride lots at transit stations; 20 percent are utilized at 85 percent of their capacity, or greater |
| | Future demand for transit will increase needs for transit investments | Future Needs Include:<br>• More service to:<br>○ Peabody, Beverly, Salem<br>○ Acton, Concord, and Westford<br>○ Framingham, Marlborough, and Natick (communities served by MetroWest Regional Transit Authority (MWRTA)<br>○ Needham and Wellesley (MWRTA provides some service to Wellesley)<br>○ Stoughton, Canton, Norwood, Walpole<br>○ Lynn<br>○ Malden<br>○ Weymouth<br>• More service on MBTA bus routes to address overcrowding; potential operations improvements (bus prioritization and bus lanes)<br>• Suburban transit<br>• Faster crosstown service to better access locations along radial corridors<br>• Service to Everett |

## TABLE 3.5
## Capacity Management and Mobility Needs in the Boston Region MPO (cont.)

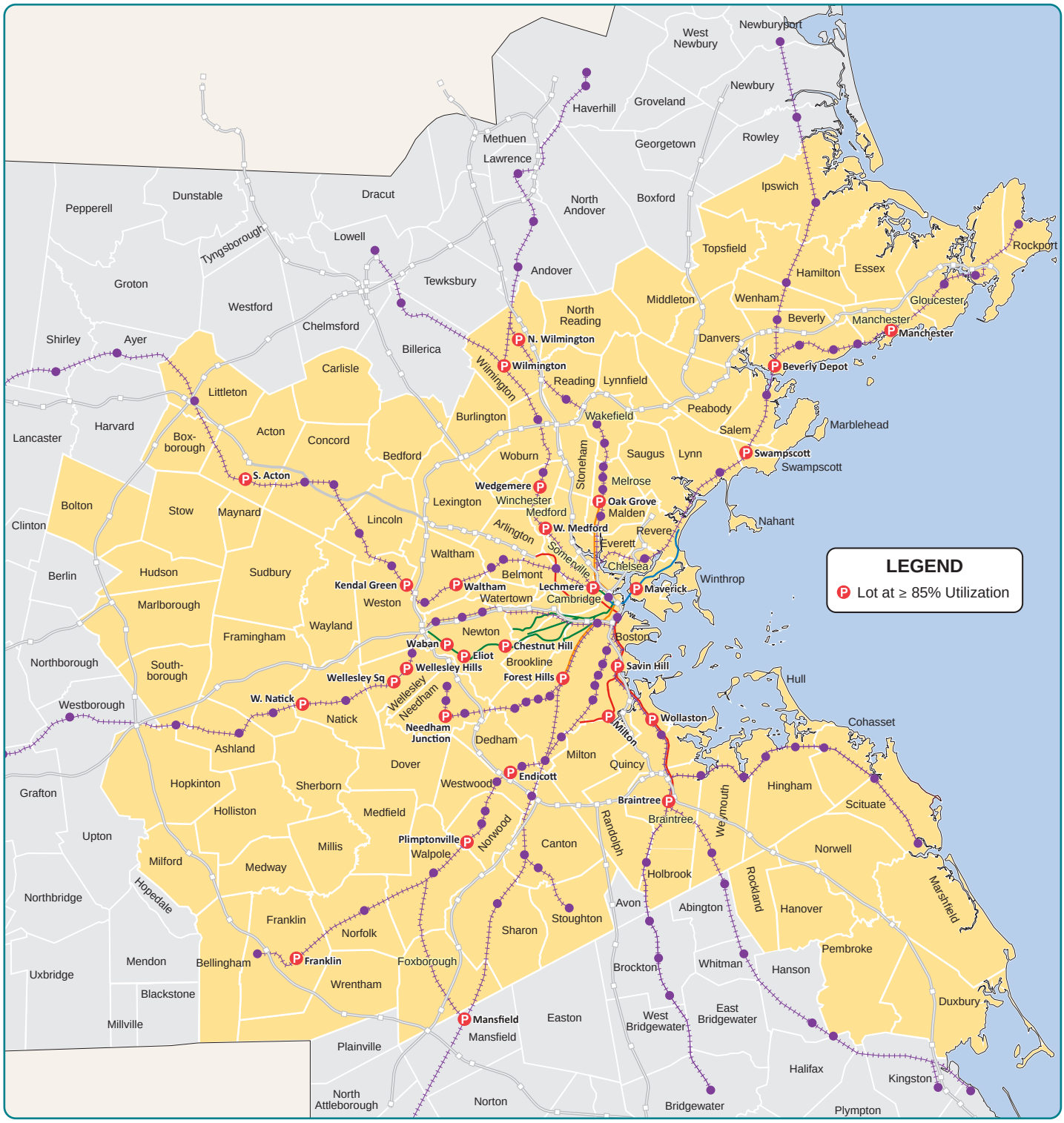
| Emphasis Area | Problem | Description of Needs |
|---|---|---|
| Transit Connectivity | Congested transit- or bicycle-parking facility | • Park-and-Ride lots at more than 85% utilization: (see Figure 3.3, Map of Stations at or more than 85% utilization)<br>• Bicycle parking facilities at more than 85% utilization: (see Figure 3.4, Map of Bicycle Parking Facilities at or more than 85% utilization)<br>• Numerous other access improvements for transit, including:<br>○ Bicycle access, rapid transit system wide<br>○ Bicycle and pedestrian access to north-side Orange Line stations, the Blue Line, and southern parts of the Red Line<br>○ Pedestrian and bicycle access to commuter rail stations |
| | General Access Needs | • Areas for Access Improvements include:<br>○ Alewife Station<br>○ Crosstown bus routes<br>○ Improved suburban links to existing transit service (Park-and-Rides, transit station parking, shuttle services, and other facilities and services that support last-mile connections)<br>○ Improved connections between the regional transit authorities |
| Bicycle and Pedestrian Network Connectivity | Eleven top priority bicycle gaps to be addressed | Top priority bicycle gaps are shown in Figure 3.5 |
| | Baystate Greenway (BSG) Priority 100 corridor projects in the Boston Region | BSG 100 priority corridor projects are shown in Figure 3.5 |
| | General Bicycle and Pedestrian Improvements | Bike trails to Boston from the northeast, north, and southeast |
| | Only 52 percent of the region's non-limited-access roadways have a sidewalk on at least one side of the street. | Sidewalks on at least one side of all streets |
| | Inadequate snow removal reduces mobility | |

Source: Central Transportation Planning Staff.

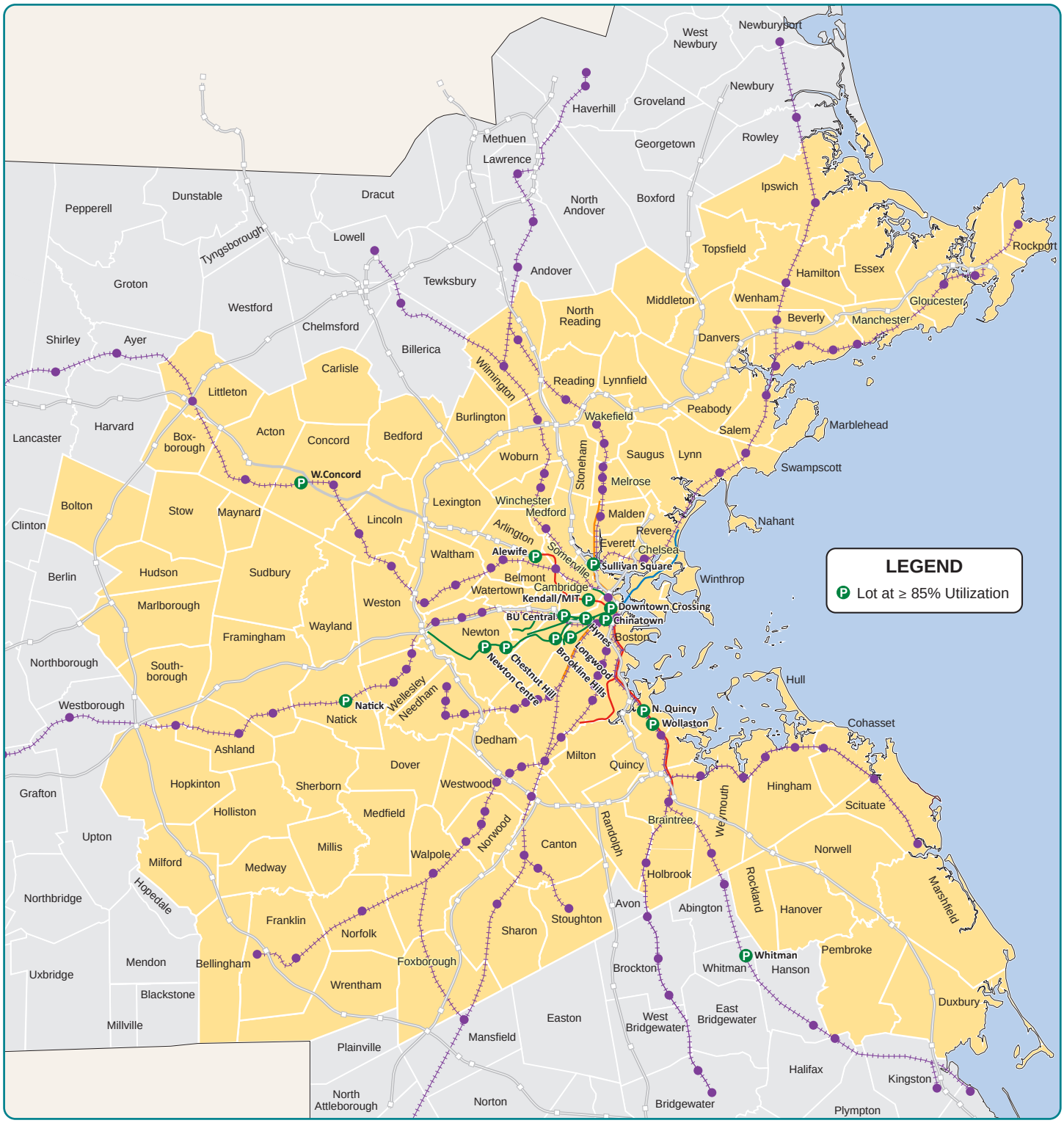
# FIGURE 3.2
# Bottleneck Locations



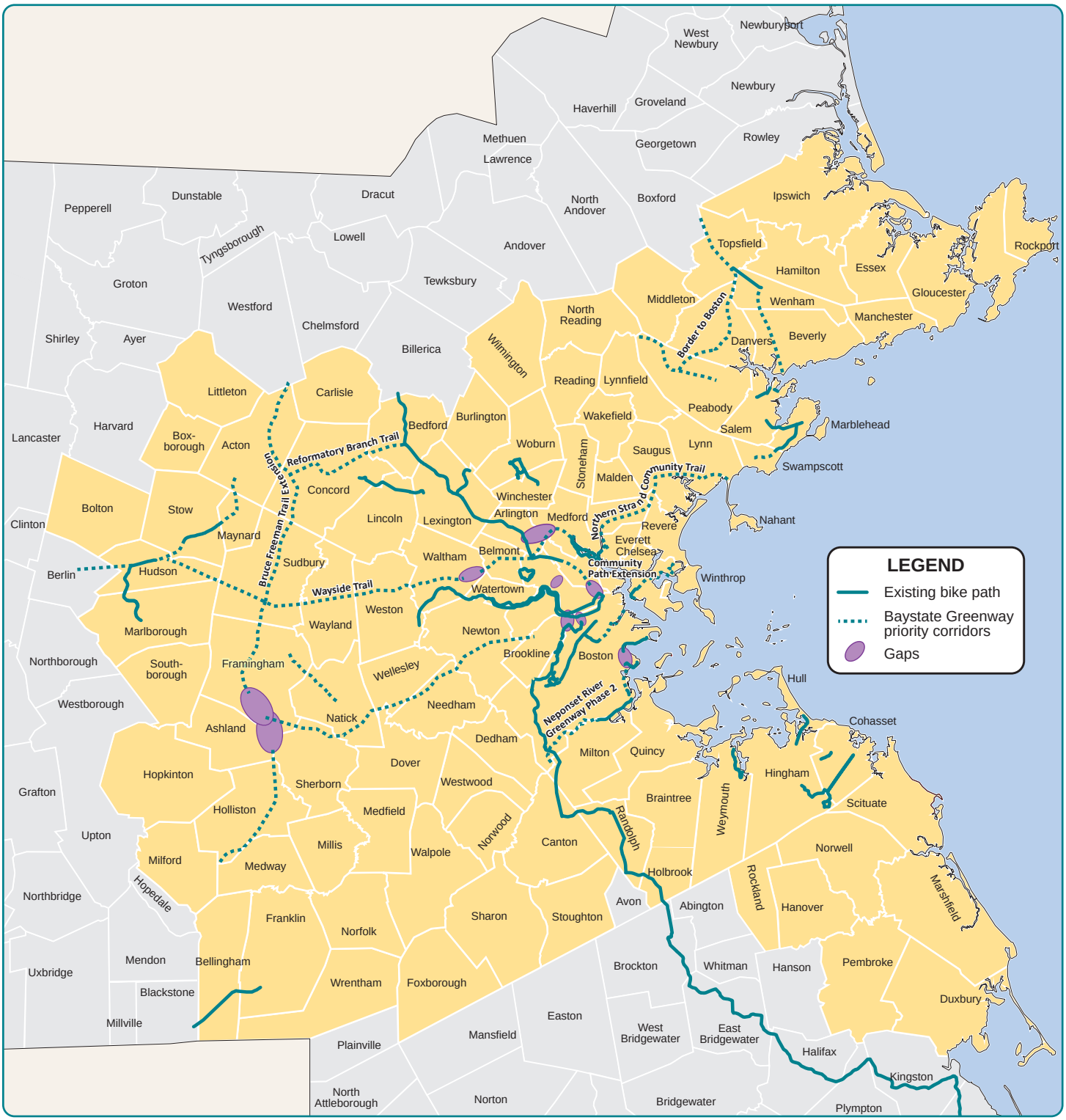
# FIGURE 3.3
## Park-and-Ride Locations with a Utilization Rate of More than 85%



# FIGURE 3.4
## Bicycle Parking Facilities with a Utilization Rate of More than 85%



# FIGURE 3.5
## Priority Bicycle Gaps and Baystate Greenway Locations



# Clean Air and Clean Communities

## CLEAN AIR AND CLEAN COMMUNITIES PROBLEM STATEMENT

The MPO has made significant progress toward improving air quality in the region, which is now in attainment for ozone and particulate matter and remains in maintenance for carbon monoxide.[1] Continued vigilance is needed to keep emissions of these pollutants at acceptable levels.

The largest environmental threat the MPO now faces is the need to reduce greenhouse gas emissions that contribute to climate change, which if unchecked, could impair our transportation system and way of life. In addition, transportation can negatively affect environmental resources and land use patterns if they induce sprawl or development in or near priority preservation areas (see Economic Vitality section and Figure 3.8).

## CLEAN AIR AND CLEAN COMMUNITIES NEEDS

To comply with federal and state requirements, as well as MPO policy, the MPO tracks air quality by continuously monitoring estimated or projected levels of pollutants, including volatile organic compounds (VOC), nitrogen oxides (NOx), carbon monoxide (CO), particulate matter (PM), and carbon dioxide ($CO_2$). In the LRTP and TIP project-selection processes, the MPO reviews and rates individual projects on how well they meet criteria established to protect the environment.

Addressing some of the needs identified under the Capacity Management and Mobility goal also will help the MPO achieve the Clean Air and Clean Communities goal, as programs that reduce vehicle-miles traveled (VMT) contribute to lower emissions of VOC, NOx, CO, $CO_2$, and PM.

### TABLE 3.6
### Clean Air and Clean Communities Needs in the Boston Region MPO

| Problem | Description of Needs |
|---|---|
| The MPO must continue monitoring levels of carbon monoxide (CO) and carbon dioxide ($CO_2$) and should continue monitoring the pollutants volatile organic compounds (VOC), nitrogen oxides (NOx), and particulate matter (PM) | Identify projects and programs that can meet criteria established to protect the environment<br><br>Reducing vehicle-miles of travel (VMT) will help reduce emissions of VOC, NOx, CO, $CO_2$, and PM. |

Source: Central Transportation Planning Staff.

1 A maintenance area is one that has been reclassified as being in attainment, but on which the MPO is still required to report.

# *Transportation Equity*

## TRANSPORTATION EQUITY PROBLEM STATEMENT

Historically, some minority and economically disadvantaged areas have endured the negative effects of the transportation system disproportionally—for example, via placement of infrastructure from which they do not benefit; poor access to, or maintenance of, necessary services; and by not being included in the transportation-planning process. In addition, youth, the elderly, and people with disabilities of various kinds face special challenges when using the transportation system. Although progress has been made to remedy these problems, much remains to be done to identify affected populations and ensure equal treatment and access to transportation services, mobility, and decision making.

## TRANSPORTATION EQUITY NEEDS

The MPO determines the transportation needs of people in transportation equity (TE) areas—those with higher concentrations of minority and/or low-income residents (see Figures 3.6 and 3.7 and Chapter 7)—in a number of ways. Staff post a needs survey on the MPO's website; the MPO conducts forums and meetings to solicit input; staff attend various meetings where needs and transportation gaps are discussed; and staff keep current on reports and studies that identify these needs, which generally fall into several categories, including:

- Transit service improvements
- Transit and roadway infrastructure improvements
- Improved intermodal connections
- Coordination of various services

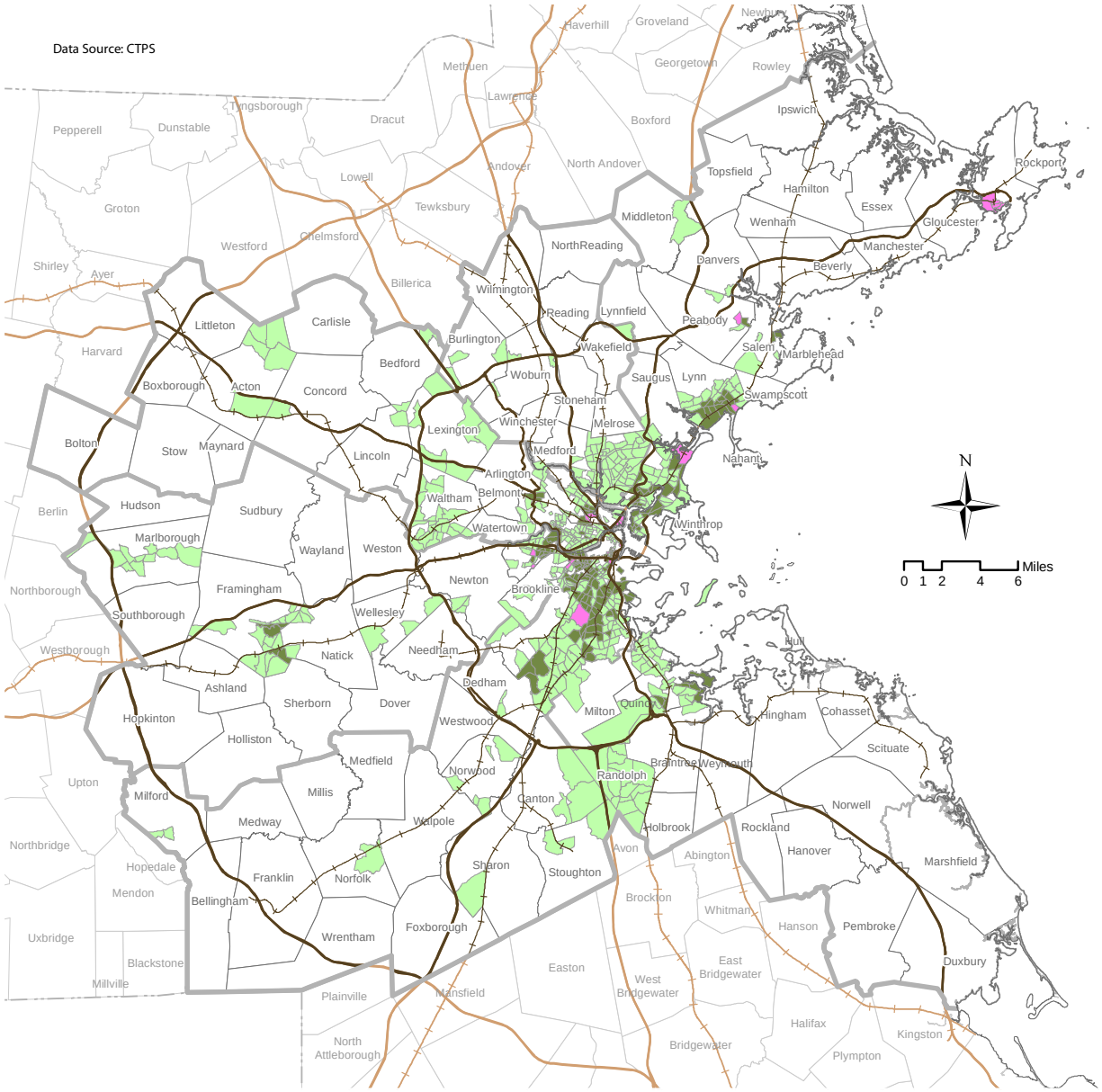
The MPO addresses regional transportation equity through TIP evaluation criteria, where projects that address a transportation issue in an TE neighborhood can score points. MPO staff give positive ratings to projects that could benefit TE areas, and negative ratings to projects that might burden these areas. This scoring system gives projects that address transportation equity issues an advantage, as the MPO considers these ratings when deciding which projects should be funded in the LRTP or TIP.

## TABLE 3.7
## Transportation Equity Needs in the Boston Region MPO

| Problem | Description of Needs |
|---|---|
| Lack of adequate transit service to environmental-justice communities<br><br>Some transportation needs are addressed system wide and some are location specific | Identified needs:<br>• Transit service improvements<br>• Transit and roadway infrastructure improvements<br>• Improved intermodal connections<br>• Coordination of various services |

Source: Central Transportation Planning Staff.

# FIGURE 3.6
## Transportation Equity Areas in the Boston Region MPO Regionwide



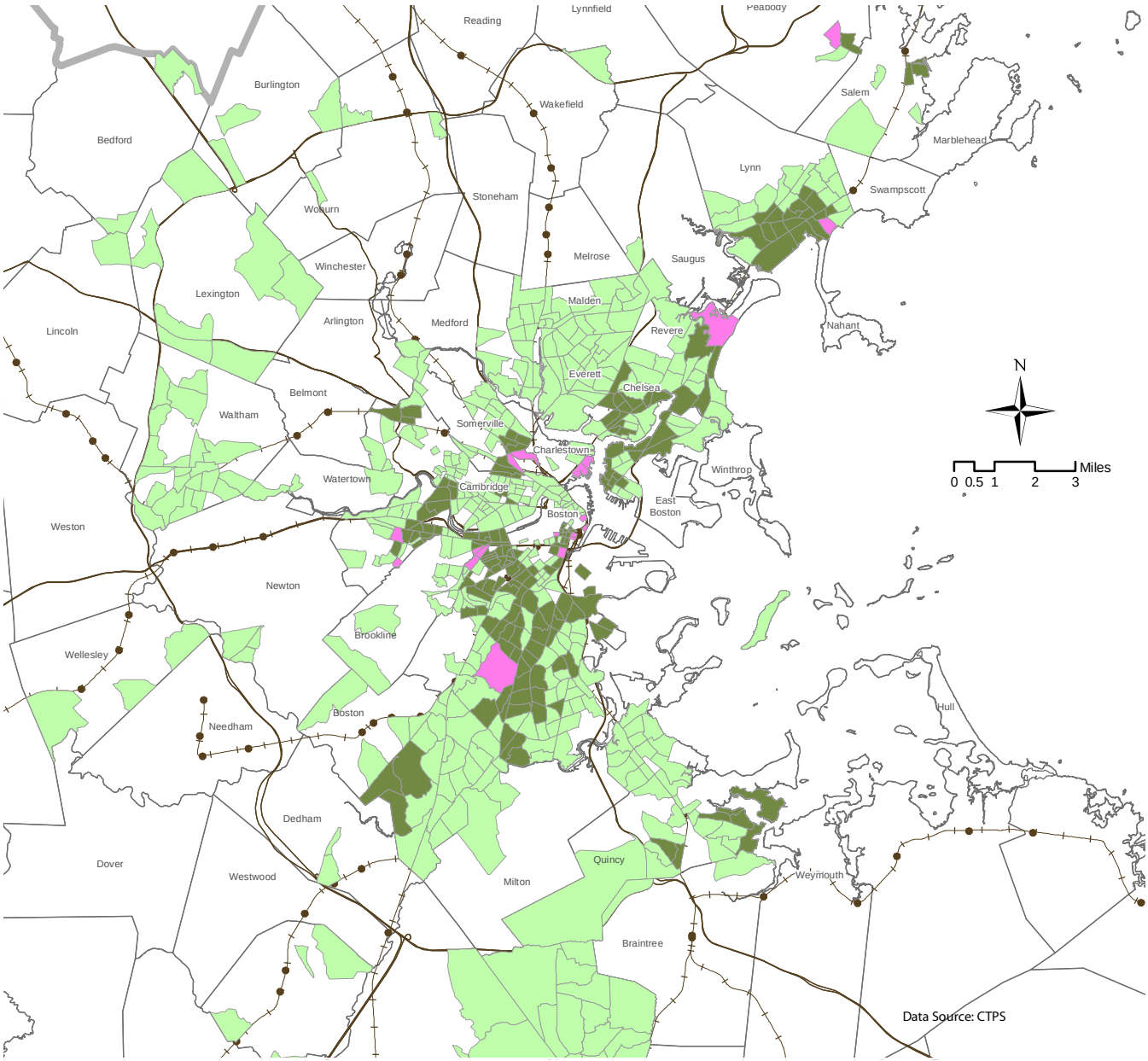

**Transportation Analysis Zones (TAZs) That Meet Equity Analysis Zone Criteria***

- Not minority or low-income
- Minority zone
- Low-income zone
- Both low-income and minority

***Criteria for Equity Analysis Zones under Title VI (2010 Data)**

A TAZ in which the median household income in 2010 was equal to or less than 60% of the MPO median of $70,829 ($42,497) or in which the 2010 population was more than 27.8% minority.

# FIGURE 3.7
## Transportation Equity Areas in the Boston Region MPO Central Area




**Transportation Analysis Zones (TAZs) That Meet Equity Analysis Zone Criteria***

- Not minority or low-income
- Minority zone
- Low-income zone
- Both low-income and minority

***Criteria for Equity Analysis Zones under Title VI (2010 Data)**

A TAZ in which the median household income in 2010 was equal to or less than 60% of the MPO median of $70,829 ($42,497) or in which the 2010 population was more than 27.8% minority.

# *Economic Vitality*

## ECONOMIC VITALITY ISSUES STATEMENT

Land use, demographics, the economy, the environment, and the transportation system are closely interrelated, and changes to any one factor can affect the others negatively. The MPO can support economic development by focusing attention on the transportation infrastructure needs of MAPC-identified priority development and preservation areas in the region (Figure 3.8) as it prioritizes its limited regional funding.

## ECONOMIC VITALITY NEEDS

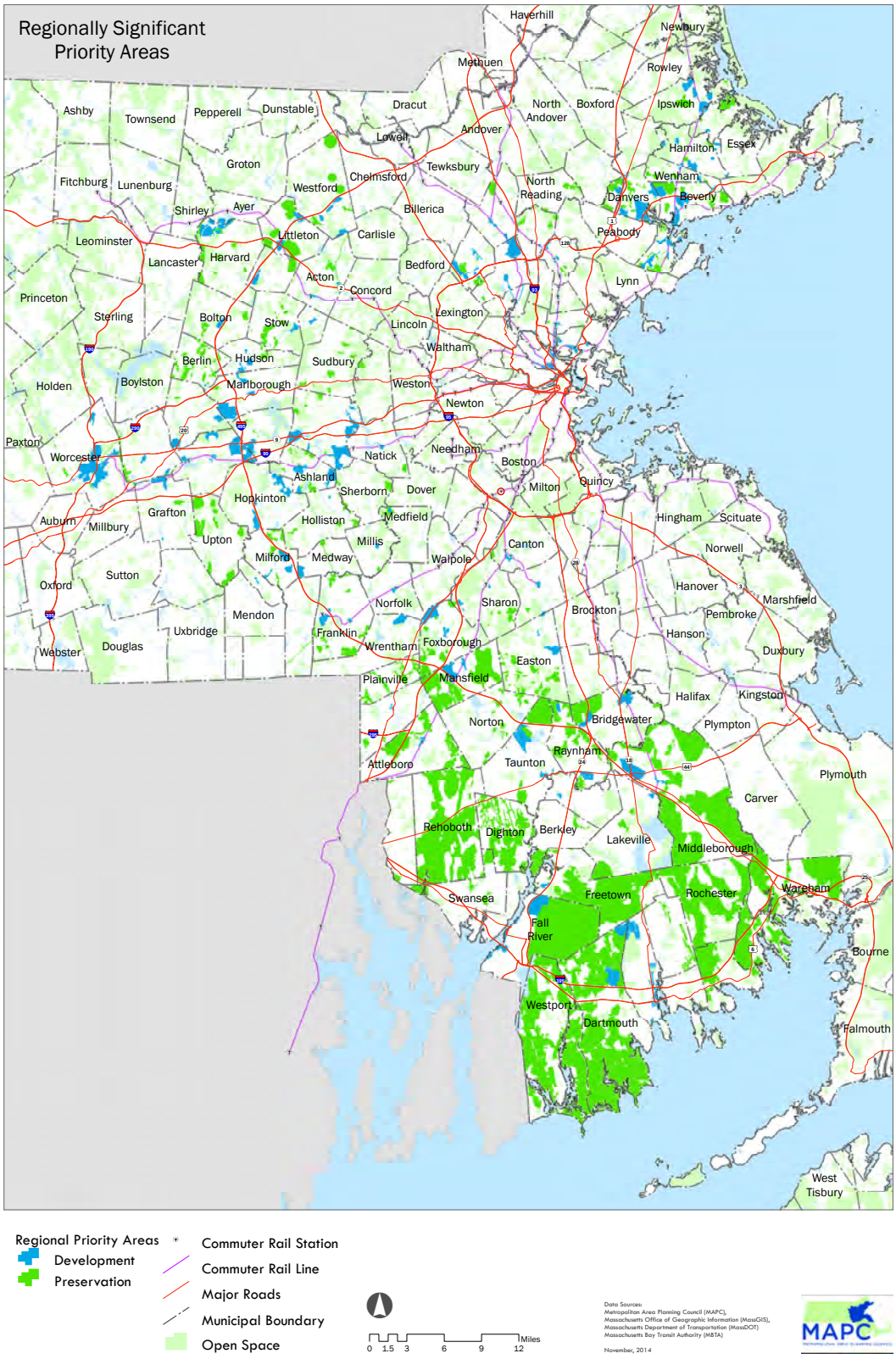
The Massachusetts Executive Office of Housing and Economic Development (EOHED), the Massachusetts Executive Office of Energy and Environmental Affairs (EOEEA), and MAPC collaborated on a process to identify local, regional, and state-level priority development and preservation areas in municipalities within the MPO area. These areas can support additional housing, employment growth, creation and preservation of open space, and the type of continued economic vitality and future growth that the market demands, and which communities desire. The MPO has worked with MAPC and state agencies to understand the infrastructure needs of these areas and to identify transportation projects that could address them.

### TABLE 3.8
### Economic Vitality Needs in the Boston Region MPO

| Problem | Description of Needs |
|---|---|
| The region's economic vitality depends on a high-performing, multi-modal transportation system | Infrastructure improvements are needed to support growth in the priority development areas |

Source: Central Transportation Planning Staff.

# FIGURE 3.8
## Regionally Significant Priority Development and Preservation Areas



## CONCLUSION

Clearly, the Boston region has extensive transportation maintenance and modernization requirements, and must continue to address safety and mobility for all modes. In fact, all of the MPO's goal areas contain certain inadequacies that the MPO should confront in its multimodal approach to meeting the region's needs through 2040. However, MPO staff estimate that attending to these needs likely would exceed anticipated financial resources between now and 2040. Therefore, the MPO will face difficult decisions as it prioritizes when and how to allocate resources to guide transportation investment decisions throughout this LRTP's time span.

# 4 FUNDING THE TRANSPORTATION NETWORK

## OVERVIEW

For the Boston Region MPO to be eligible to receive federal aid for transportation projects, it is required by federal law to prepare a fiscally constrained LRTP every four years to document the estimated costs and describe the regionally significant surface transportation projects and programs planned for construction or implementation for a 25-year time period. Regionally significant projects and programs are those that would increase the capacity of the transportation system, or that would cost more than $20 million.

Over the life of this LRTP, from FFY 2016 to 2040, the Boston Region MPO has the discretion to program $2.85 billion in federal funds for highway transportation projects in the region. This amount is significantly less than was available four years ago when the MPO programmed approximately $3.8 billion in *Paths to a Sustainable Region*. The difference is a result of new projections for revenue growth, which are lower for *Charting Progress to 2040* than for *Paths to a Sustainable Region*. In *Paths to a Sustainable Region*, revenue growth was assumed to be 3 percent a year, while *Charting Progress to 2040* assumes a 1.5 percent a year increase, as discussed below.

In addition to documenting MPO discretionary spending, this LRTP reports on nearly $6 billion in planned spending on highway projects prioritized by the Commonwealth through statewide funding programs. It also recounts capital resources and operations and maintenance resources available to the three regional transit authorities (RTAs) operating in the Boston Region: the Massachusetts Bay Transportation Authority (MBTA), the MetroWest Regional Transit Authority (MWRTA), and the Cape Ann Transportation Authority (CATA).

Capital resources available to the MBTA are projected to amount to more than $10.3 billion during the life of this plan (approximately $9.1 billion in aid through the federal transit program and $1.2 billion in MBTA revenue bonds to match federal funds). The MBTA's operations and maintenance revenues are generated from the state sales tax, assessments paid by municipalities in the MBTA's service area, fare revenues, and other sources (discussed later in this chapter); these revenues are projected to reach $70.9 billion during the life of this LRTP, covering an estimated $69 billion in costs.

The MWRTA is expected to have $51 million in federal capital resources over the life of the LRTP. The MWRTA's operations and maintenance costs are projected to total $253.7 million for this same period. Revenues are expected to fully cover those costs. The CATA is expected to have $16 million in federal capital resources over the life of the LRTP. The CATA's operations and maintenance costs are projected to total $98.8 million for this same period with revenues projected to be $97.8 million. Thus, additional operating funding would be required to maintain and improve transit services in the future.

The financial plan outlined in this LRTP is based on federally approved projections for revenue growth over the 25 years of the plan. As this plan was being prepared, Congress had not yet passed new federal legislation that would provide long-term revenue projections. (Moving Ahead for Progress in the 21st Century, or MAP-21, is the currently active legislation that is set to expire at the end of October 2015.) Therefore, for planning purposes, the federal agencies advised the MPO to assume that revenues will increase by 1.5 percent each year starting in federal fiscal year (FFY) 2021 and extending though FFY 2040. This growth factor is based on analyzing actual federal funding allocations that the region received in recent years. For the same period, project costs are anticipated to inflate by 4 percent each year.

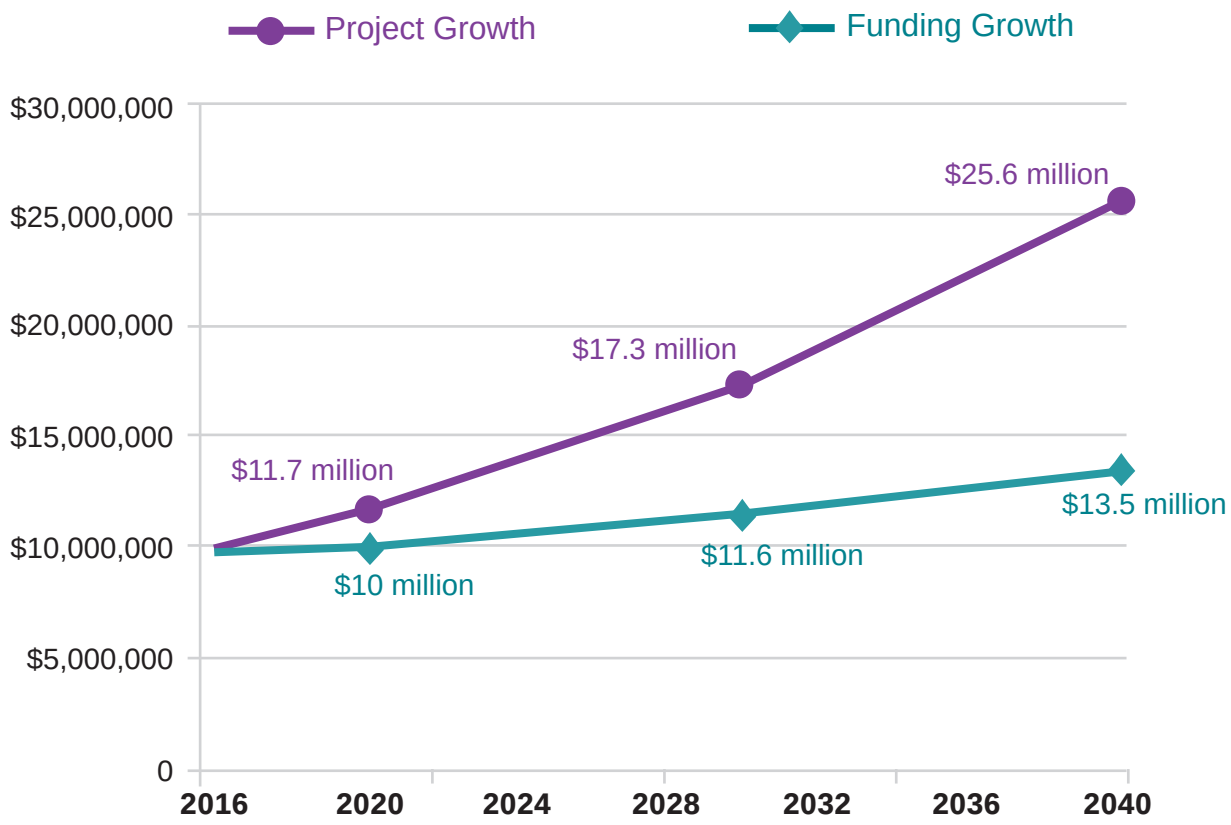
**FIGURE 4.1**
**Revenue and Growth Assumptions for LRTP Development**




Source: Central Transportation Planning Staff.

If these projections hold true, project costs will outpace available revenues, resulting in diminished buying power in future years. A project costing $10 million if constructed in FFY 2016, for example, would cost increasingly more if programmed in the outer years of the LRTP. To deliver the same project in FFY 2040, the cost would be $25.6 million, while the available revenues for that project would have increased by only $3.5 million. (See Figure 4.2 below.)

**FIGURE 4.2**
**Project Cost Growth versus Funding Growth, FFYs 2016-2040**




Source: Central Transportation Planning Staff.

## HIGHWAY FUNDING

Highway revenues programmed in the LRTP consist of federal funds approved by Congress and distributed through the Federal-Aid Highway Program and state funds approved by the Massachusetts Legislature. The various funding sources available for roadway and bridge projects in Massachusetts are outlined below.

## Federal Aid

Federal funds support construction and rehabilitation of highways and bridges on federal-aid eligible routes (as determined by the roadway's functional classification) as well as projects and programs targeted for improvements in particular focus areas, such as improving safety or air quality, building bicycle and pedestrian networks, or interstate maintenance. Congress has established various funding programs for appropriating federal funds to these key focus areas, some of which are discussed later in this chapter.

Federal highway funds for states are typically authorized by Congress through a multi-year act. The most recent act was MAP-21, which authorized funding for FFY 2013 and 2014, and was extended through July 2015 and then again through October 2015.

Congress apportions funds to the states based on formulas specified in federal law. Each year, a state may spend its apportionment only up to a ceiling or the "obligation authority," a limit set by Congress to control federal expenditures. The obligation authority represents the federal government's commitment to reimburse the state for eligible expenditures on approved projects.

The state must program its obligation authority before the close of the federal fiscal year, September 30, otherwise the state will forfeit the un-programmed funds and the federal government will make those funds available to other states that have the wherewithal to spend them, i.e., projects that are ready for construction. In past years, the Commonwealth has been the recipient of these so-called redistribution funds that became available when other states did not program up to their obligation authority. While the Commonwealth has benefited from these bonuses, it also, like other states, has been subject to rescissions, when the federal government rescinded or pulled back the unused balances of previously authorized funds.

Within the obligation limits, the Federal Highway Administration (FHWA) reimburses states for costs of federal-aid eligible projects out of the Highway Trust Fund. The primary source of revenue for the Highway Trust Fund is the federal tax on motor fuels; additional revenue comes from other transportation-related fees. Recently, the Highway Trust Fund has been at risk of insolvency, in part, because its revenues are heavily dependent on the gas tax; as vehicles become more fuel efficient and vehicle miles traveled trend downward, this revenue source has become less robust.

In regions with metropolitan areas that have populations greater than 50,000, transportation projects or programs to receive federal aid must be programmed through the MPO certification process. Projects that are regionally significant, i.e., those that would add capacity to the transportation system or that cost more than $20 million, must be programmed in the LRTP, along with project descriptions and cost estimates.

Projects that are scheduled to be implemented in the near term—regardless of cost or regional impact—must be programmed in the Transportation Improvement Program (TIP),

a four-year planning document that is updated annually. The TIPs from all the MPOs in a state are combined to form the State Transportation Improvement Program (STIP), which recounts the federal-aid funded projects to be implemented statewide over a four-year period.[1] TIP funding levels are the basis for funding projections for the LRTP.

The TIP and STIP document the federal, state, and local shares of funding for projects and programs. Typically, federal dollars must be matched in some portion by state or local dollars, as dictated by the funding split formula of each particular federal funding program. Federal funds usually cover 80 percent of a project's cost, and the state or local government covers 20 percent. Some federal programs offer a 90 percent federal share or full funding. Congressional earmarks in federal transportation bills often provide full funding for specific projects; however, there were no earmarks in MAP-21.

In addition to documenting federally funded projects for which the state has obligation authority, the TIP and STIP also document projects that would be funded using the Advance Construction financing method. In these cases, a state may receive approval from FHWA to begin a project before the state has received the necessary obligation authority. This pre-qualification allows a project to move forward initially with state funding, and to request federal reimbursements later.

The Massachusetts Department of Transportation (MassDOT) is the recipient of federal highway aid to the Commonwealth. After deducting the Commonwealth's debt service payments owed to the federal government (discussed further in the Debt Service section below), MassDOT allocates the remaining federal funds to statewide road and bridge programs for projects prioritized by MassDOT, and to the MPOs in the Commonwealth for projects prioritized by these regional bodies. The funds provided to MPOs are referred to as Regional Targets.

The Regional Targets for MPOs are determined by a formula established by the Massachusetts Association of Regional Planning Agencies (MARPA), which factors in each region's share of the state population. Of the ten MPOs and three regional planning commissions/councils in the Commonwealth, the Boston Region receives the largest portion of funding through this formula-based distribution. Because of the Boston Region MPO's larger population, it receives nearly 43 percent of these funds for programming at its discretion. Again, these funds must be programmed in the TIP and STIP before construction can be authorized using federal-aid funds.

## State Aid

The Massachusetts Legislature authorizes the issuance of bonds for transportation expenditures through passage of transportation bond bills. This allows the Commonwealth to provide matching funds to federal-aid projects, to pay for fully state-

1 The Boston Region MPO recently approved the production of a five-year TIP.

funded (non-federal aid) projects, and to offer support to municipalities through local-aid programs such as Chapter 90 (discussed later under Local Priorities).

The primary source of state-aid for transportation projects in the Commonwealth is generated by the state gasoline tax, motor fuel excises, and fees from motor vehicle licensing and registration. These funds, which are deposited in the Commonwealth Transportation Fund, are used to pay debt service on bonds issued for transportation projects, and to fund MassDOT, the MBTA, and other RTAs in the Commonwealth.

These state revenues have been affected by passage of a 2014 referendum that repealed a law requiring the state gasoline tax to be automatically adjusted annually based on inflation.

The following sections provide details about highway financing in the Commonwealth.

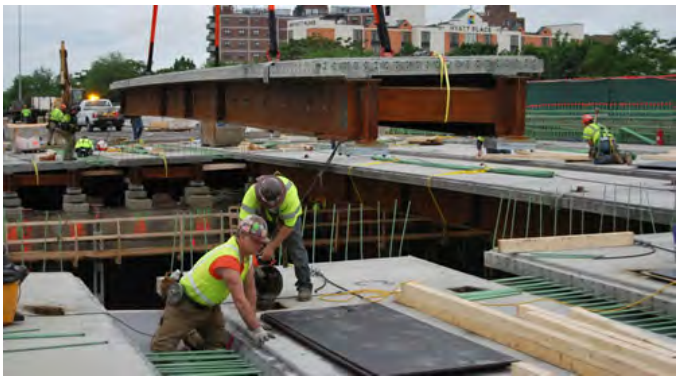
## *Debt Service*

In recent years, the Commonwealth has used a highway project financing mechanism known as grant anticipation notes (GANS) to pay for major highway projects. GANS are bonds issued by the state that are secured by anticipated, future federal highway funds.

In the late 1990s, the Commonwealth issued $1.5 billion in GANS to finance construction of a portion of the Central Artery/Ted Williams Tunnel Project. The majority of the project was completed in 2006. The Commonwealth made its final payment on this debt in 2014.

While the Central Artery/Tunnel repayments were winding down, the Commonwealth issued GANS again in 2010 for the Accelerated Bridge Program. This followed the passage in 2008 of the Accelerated Bridge Program Act, which authorized issuance of as much as $1.108 billion in GANS and $1.876 billion in special obligation bonds of the Commonwealth.

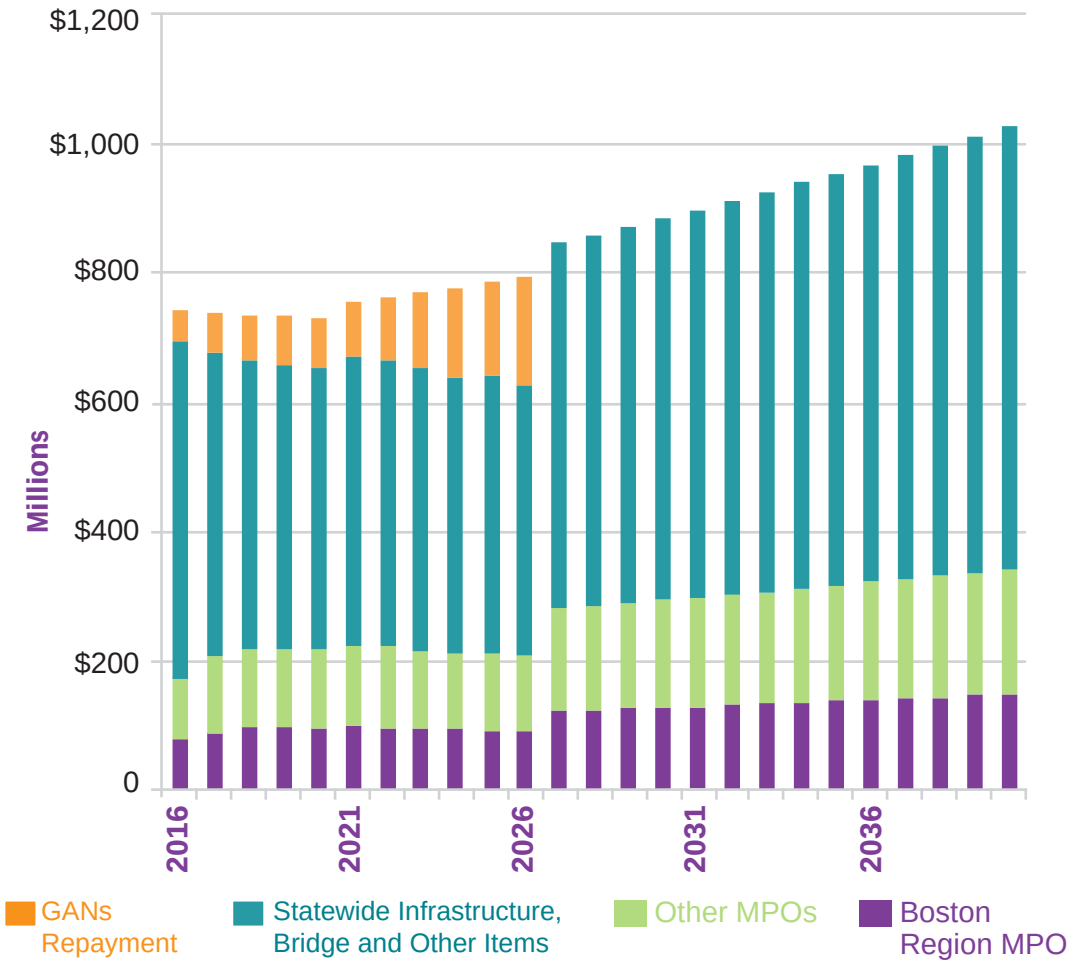
This $3 billion, eight-year program financed the design, construction, reconstruction, and repair of structurally deficient bridges across the Commonwealth. It has used novel project development and construction techniques that deliver projects on an accelerated schedule. One such project that received national attention was “Fast 14,” which replaced 14 bridges on Interstate 93 in one construction season by using prefabricated bridge deck panels.



The Accelerated Bridge Program concludes in 2016, but the Commonwealth will continue to

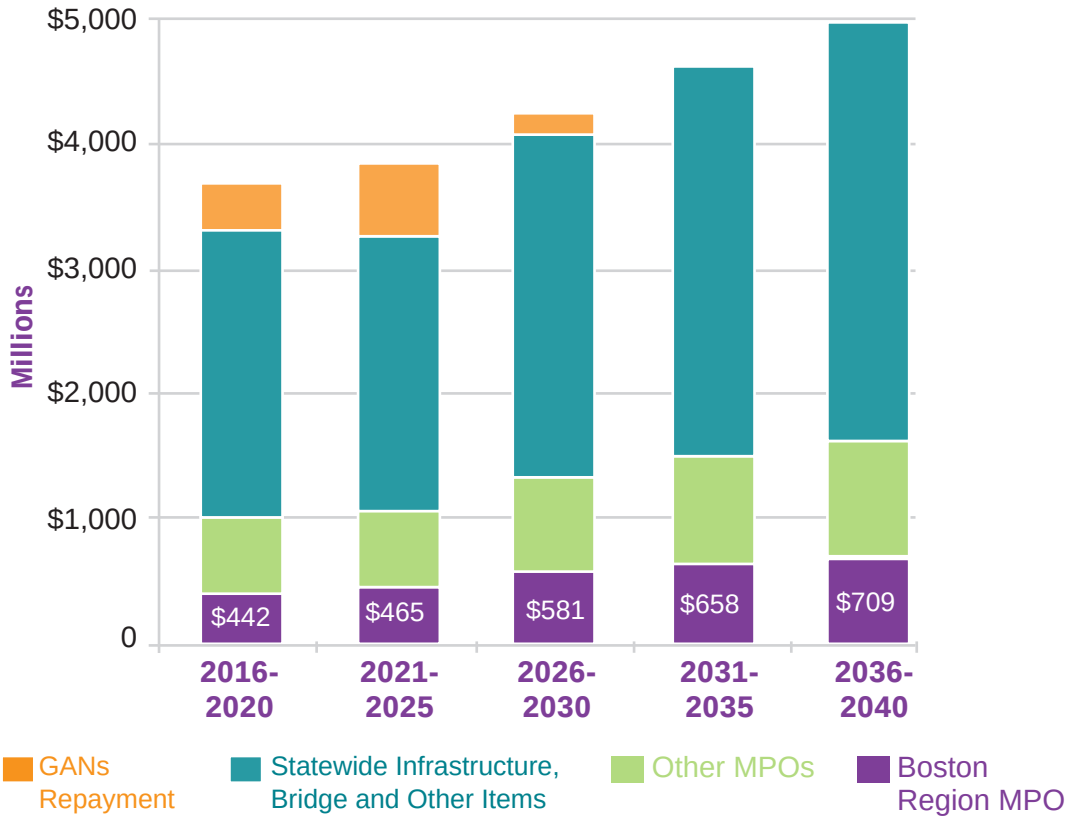
pay on the debt incurred during the next decade. The GANS for the Accelerated Bridge Program will mature between state fiscal years (SFY) 2015 and 2027. The repayment amounts, which are documented in this LRTP, are $1.108 billion for the life of the LRTP. Based on the financial projections for the LRTP, these debt payments will consume approximately 6 percent of available federal funding in FFY 2016 and increase over time to consume nearly 27 percent of the federal funding in FFY 2026. (See Figures 4.3 and 4.4 below.)

**FIGURE 4.3**
**Federal Highway Program, FFYs 2016-2040**




Source: Central Transportation Planning Staff.

## FIGURE 4.4
## Federal Highway Program, FFYs 2016-2040 by Time Band




Source: Central Transportation Planning Staff.

# *State Priorities*

## BRIDGES

MassDOT is responsible for prioritizing bridge projects statewide. In addition to the Accelerated Bridge Program, bridge preservation and maintenance projects are funded through the Statewide Bridge Program.

Funds for the Statewide Bridge Program come from two federal-aid highway programs: the National Highway Performance Program (NHPP) and the Surface Transportation Program (STP). The NHPP funds bridges that are on the federal-aid system, while the STP funds bridges on public roads that are not on the federal-aid system. Projects funded through the Statewide Bridge Program typically receive 80 percent federal funding with a 20 percent non-federal match.

Approximately one-quarter of the bridges in the Commonwealth are in the Boston Region MPO area. Therefore, it is expected that MassDOT will allocate one-quarter of the amount of federal funding in the Statewide Bridge Program to the Boston Region MPO for the life of the LRTP.

Based on the financial assumptions for the LRTP, this region can expect to receive $1.16 billion in federal aid for bridge projects for the life of this LRTP. The allocation is expected to increase from $193.5 million in the FFYs 2016–20 time band to $285.6 million in the FFYs 2036–40 time band.

Additional non-federal aid for bridges and roadways is distributed to the regions based on the MARPA formula. The Boston Region MPO expects its 43 percent share, which amounts to $1.1 billion for the life of the LRTP.

## INTERSTATE MAINTENANCE AND PAVEMENT MANAGEMENT

MassDOT allocates funds for interstate maintenance and highway pavement resurfacing projects to the regions through its Statewide Interstate Maintenance Program and Statewide National Highway Preservation Program. The federal funding source for these programs is the NHPP.

Similar to allocation of federal-aid bridge monies, MassDOT determines the allocation of federal-aid funds for interstate maintenance and pavement management to each region of the Commonwealth based on the amount of infrastructure that must be maintained in each region.

Approximately 38 percent of the interstate lane miles in the Commonwealth are in the Boston MPO region, thus this region can expect to receive that proportion of Statewide Interstate Maintenance Funds for the life of the LRTP. As such, the Boston MPO region expects to program a total of $784.5 million in interstate maintenance projects during the life of the LRTP.

The Boston Region MPO contains nearly 32 percent of the lane miles of non-interstate highways (principal arterials) that are eligible to receive funding through the Statewide National Highway System Program. Consequently, this region can expect to receive that proportion of funding for highway preservation projects, which amounts to $341 million during the life of the LRTP.

## STATEWIDE MAJOR INFRASTRUCTURE

Traditionally there has been a statewide funding category for Major Infrastructure projects that were prioritized by MassDOT for major highway modernization projects throughout the state. This funding category will be eliminated after the Interstate 91 Viaduct project in Springfield is completed. Beginning in 2017, MassDOT will no longer set aside money in the Statewide Major Infrastructure funding category, but instead will pass the funds through the MPOs for programming. (Note: This Major Infrastructure category is not to be confused with the Boston Region MPO's Major Infrastructure investment program.)

## OTHER STATEWIDE PROGRAMS ADDRESSING TRANSPORTATION NEEDS

Federal-aid highway funding for other statewide programs that address a variety of transportation needs are allocated to regions in the Commonwealth based on the MARPA formula. Again, as the most populous region of the Commonwealth, the Boston Region receives the largest share, 43 percent.

The statewide programs that target funding to projects that address specific needs include the Congestion Mitigation and Air Quality Improvement Program (CMAQ), Highway Safety Improvement Program (HSIP), and Transportation Alternatives Program (TAP). CMAQ supports transportation projects that reduce traffic congestion and thereby improve air quality. HSIP focuses on reducing the number and severity of crashes at locations identified as particularly hazardous based on crash reports on file at the Registry of Motor Vehicles. In addition, TAP provides grant funding for projects such as transportation enhancement, multi-use trails, and projects that create safe routes for children to access schools.

Other programs support upgrades to intelligent transportation systems and highway lighting systems, safety improvements at rail crossings, drainage improvements and storm water retrofits, and accessibility upgrades to comply with the Americans with Disabilities Act. Combined, these categories are assumed to make up 43 percent of statewide highway funding programmed in this LRTP, and amount to $2.57 billion. Table 4.1 below summarizes the funding categories presented above by five-year time bands.

**TABLE 4.1**
**Projected Sources of Funds for Maintenance of the Highway System in Boston Region MPO**

| Program | FFYs 2016-20 | FFYs 2021-25 | FFYs 2026-30 | FFYs 2031-35 | FFYs 2036-40 | Total |
|---|---|---|---|---|---|---|
| Statewide Bridge | $193.52 | $187.42 | $234.20 | $265.19 | $285.68 | **$1166.00** |
| Non-Federal Aid Preservation | 214.84 | 218.06 | 221.28 | 224.50 | 227.73 | **1106.40** |
| Statewide Interstate Maintenance | 132.72 | 125.61 | 156.96 | 177.74 | 191.47 | **784.50** |
| Statewide National Highway System | 56.66 | 54.87 | 68.57 | 77.65 | 83.65 | **341.40** |
| Statewide Infrastructure | 16.77 | 16.24 | 20.30 | 22.98 | 24.76 | **101.05** |
| Remaining Statewide Programs | 381.74 | 403.42 | 504.11 | 570.82 | 614.93 | **2475.02** |
| **Total** | **$996.24** | **$1005.62** | **$1205.42** | **$1338.87** | **$1428.22** | **$5974.38** |

FFYs = Federal fiscal years. Note: Dollars in millions. Source: Massachusetts Department of Transportation.

## *Regional Priorities*

The LRTP reflects cost estimates for all regionally significant projects in the region, including those that will receive federal-aid highway funding and those that will receive

non-federal aid. As such, state funding priorities for the Boston region are reflected in this document, as well as MPO funding priorities.

The LRTP financial planning that occurs at the MPO level focuses on programming that portion of funds over which the MPO has decision-making power. As mentioned previously, MPOs are provided with Regional Targets based on funding projections, which are used for programming projects for the 25-year period of the LRTP. These target funds are divided among the ten MPOs and three regional planning commissions/ councils in the Commonwealth based on the MARPA formula, with the Boston Region MPO receiving a 43-percent share. While the MPOs have discretion over this funding, some restrictions apply. For example, the MPOs must program a particular portion of their target funds for projects and programs that meet the requirements of the CMAQ, HSIP and TAP programs.

During the life of this LRTP, from FFY 2016 to 2040, the Boston Region MPO expects to program approximately $2.85 billion in federal funds for highway transportation projects in the region. This amount is significantly less than was available four years ago, when the MPO programmed approximately $3.8 billion in *Paths to a Sustainable Region*. (See Table 4.2 below for a comparison by time band.) Table 4.3 shows all of the projects funded with highway money that are recommended in this LRTP, including major infrastructure projects, regionally significant projects (expansion) with air quality impacts, and/or projects that are funded using highway money for transit (flex funding). Table 5.3 (in Chapter 5) lists these projects by the project name, current costs, and future costs.

In the near term, from FFY 2016 to 2019, the Boston Region MPO will have the discretion to program between $75 million and $92 million a year. Each year approximately $13 million will be targeted to CMAQ projects, approximately $4 million to HSIP projects, and an average of $3.5 million to TAP projects.

## TABLE 4.2
## Comparison of Available Capital Highway Funds in *Charting Progress to 2040* to the Previous LRTP, *Paths to a Sustainable Region*

| | FFYs 2013-15 | FFYs 2016-20 | FFYs 2021-25 | FFYs 2026-30 | FFYs 2031-35 | FFYs 2036-40 | Total |
|---|---|---|---|---|---|---|---|
| *Paths to a Sustainable Region* Revenue* | $229.83 | $557.47 | $815.61 | $1018.44 | $1180.65 | -- | **$3802.00** |
| *Charting Progress to 2040* Revenue | -- | 441.65 | 464.87 | 580.90 | 657.78 | $708.60 | **$2853.80** |
| Difference | | ($115.82) | ($350.74) | ($437.54) | ($522.87) | | **($948.20)** |
| Percentage Change | | -21% | -43% | -43% | -44% | -- | **-25%** |

FFYS = Federal fiscal years. Note: Dollars in millions. Source: Central Transportation Planning Staff.

* *Paths to a Sustainable Region* is a 23 year LRTP compared to *Charting Progress to 2040,* which is a 25 year LRTP.

## TABLE 4.3
## Major Infrastructure Projects, Expansion Highway Projects, and Flex-Funded Transit Projects in the Recommended LRTP

| Projects | Type of Project | Current Cost |
|---|---|---|
| **Ongoing Highway Project** | | |
| Rehabilitation/Replacement of 6 Bridges on I-95/Route 128 (Add-a-Lane – Contract V) (Needham and Wellesley) | Expansion/Major Infrastructure | $57,768,183 |
| **New Highway Projects** | | |
| Middlesex Turnpike Improvements, from Crosby Drive North to Manning Road, Phase III (Bedford and Billerica) | Expansion/Major Infrastructure | $26,935,000 |
| Reconstruction of Rutherford Avenue, from City Square to Sullivan Square (Boston) | Major Infrastructure | $109,967,000 |
| Intersection Improvements at Route 126 and Route 135/MBTA and CSX Railroad (Framingham) | Major Infrastructure | $115,000,000 |
| Route 4/225 (Bedford Street) and Hartwell Avenue (Lexington) | Major Infrastructure | $23,221,000 |
| Bridge Replacement, Route 27 (North Main St.) over Route 9 (Worcester St.) and Interchange Improvements (Natick) | Major Infrastructure | $25,793,000 |
| Reconstruction of Highland Avenue, Needham Street and Charles River Bridge, from Webster Street to Route 9 (Newton and Needham) | Expansion | $14,298,000 |
| McGrath Boulevard Project (Somerville) | Major Infrastructure | $56,600,000 |
| Reconstruction and Widening on Route 18 (Main Street) from Highland Place to Route 139 (Weymouth and Abington) | Expansion/Major Infrastructure | $58,822,000 |
| Reconstruction of Montvale Avenue, from I-93 Interchange to Central Street (Woburn) | Expansion | $4,225,000 |
| Bridge Replacement, New Boston Street over MBTA (Woburn) | Expansion | $9,707,000 |
| **Highway Funding Flexed to Transit** | | |
| Green Line Extension Project (Phase 2), College Avenue to Mystic Valley Parkway/Route 16 (Somerville and Medford) | Expansion/Major Infrastructure | $190,000,000 |

Source: Central Transportation Planning Staff.

## *Local Priorities*

The Commonwealth's Chapter 90 program reimburses municipalities for local roadway and bridge projects. Municipalities have the discretion to select these projects, which may include maintenance of municipal roadways, sidewalk improvements, right-of-way acquisition, landscaping, drainage improvements, street lighting, and upgrades to traffic control devices. Chapter 90 funding for SFY 2016 totaled $200 million statewide. That same level of funding is assumed for future years.

# TRANSIT FUNDING

The LRTP reports federal funding programmed for the three RTAs that operate primarily within the Boston Region MPO's planning area: the MBTA, MWRTA, and CATA. Transit funds programmed in the LRTP consist of funds distributed through the Federal Transit Administration's (FTA's) formula funding program as well as other federal grants and non-federal aid, including revenue bonds that match federal funds. These funding sources are described in further detail in this chapter.

Long-range revenue projections for the MBTA that are reflected in this LRTP are based on a federally approved systemwide finance plan prepared when the Commonwealth successfully pursued a federal New Starts grant for the Green Line Extension project in Somerville and Medford. The Green Line Extension Finance Plan includes revenue projections through SFY 2035; for the purposes of planning for the LRTP; those projections have been extended to SFY 2040. The bond-issuing strategy associated with the Green Line Extension Finance Plan assumes that the MBTA will issue bonds only to match its federal formula funds. However, this level of bond issuance falls far short of the MBTA's identified needs. The backlog of MBTA projects needed to keep the transit system in a state-of-good-repair is estimated to be $6.7 billion during the next several decades.

Over the life of this LRTP, capital resources available to the MBTA are projected to be more than $10.3 billion (approximately $9.1 billion in federal aid and $1.2 billion in MBTA revenue bonds to match federal funds). The MBTA's operations and maintenance revenues are projected to total $70.9 billion for the life of this LRTP, covering an estimated $69 billion in costs.

The MWRTA is expected to have $51 million in federal capital resources over the life of the LRTP. The MWRTA's operations and maintenance costs are projected to total $253.7 million for this same period. Revenues are expected to fully cover those costs. The CATA is expected to have $16 million in federal capital resources over the life of the LRTP. The CATA's operations and maintenance costs are projected to total $98.8 million for this same period with revenues projected to be $97.8 million. Thus, additional operating funding would be required to maintain and improve transit services in the future.

A detailed discussion of the RTAs' capital programs and the MBTA's operating program is provided below.

## *Capital Programs*

### MBTA CAPITAL PROGRAM

The capital maintenance needs of the MBTA include infrastructure projects, such as signal and track upgrades; fleet overhauls and replacements; system enhancement

projects; and accessibility projects, such as improvements necessary for complying with the Americans with Disabilities Act. These improvements are funded through the MBTA's capital program, which is primarily funded by two major sources: federal grants and revenue bonds. Other sources are project financing and state appropriations. (Details about short-term capital financing are available in the MBTA's Capital Investment Program. More detail on the MBTA's maintenance programs is provided in Chapter 5 in the descriptions of Transit Capital Investment Programs.)

Over time, it is assumed that the capital maintenance needs of the MBTA will consume almost 100 percent of all MBTA capital revenues (excluding those from any special state appropriations) and that the majority of revenues available during the period of this LRTP will be used to maintain the system in a state-of-good-repair. More detail, however, will be available as the MBTA moves forward with its long-range planning, which will be documented in its Program for Mass Transportation, and in its short-range plan the Capital Investment Program.

As noted above, total proceeds from all MBTA capital program funding sources from SFY 2016 through SFY 2040 are estimated to be nearly $10.3 billion. Included in this figure are funds from the FTA formula program and federal grants as well as revenue bonds that the MBTA would issue to pay the local share of its capital projects. (See Table 4.4 below.)

## TABLE 4.4
## MBTA Capital Finances by Five-Year Time Band

| Funding Source | SFYs 2016-20 | SFYs 2021-25 | SFYs 2026-30 | SFYs 2031-35 | SFYs 2036-40 | Total |
|---|---|---|---|---|---|---|
| Section 5307 | $732.95 | $789.60 | $850.62 | $916.36 | $987.18 | **$4276.71** |
| Section 5337 | 628.91 | 677.52 | 729.88 | 786.29 | 847.06 | **3669.66** |
| Section 5339 | 29.98 | 32.30 | 34.79 | 37.48 | 40.38 | **174.93** |
| New Starts, Small Starts, Homeland Security | 732.45 | 296.00 | -- | -- | -- | **1028.45** |
| MBTA Revenue Bonds | 282.05 | 288.23 | 302.93 | 318.39 | -- | **1191.60** |
| **Total** | **$2406.35** | **$2083.65** | **$1918.23** | **$2058.52** | **$1874.62** | **$10341.36** |

MBTA = Massachusetts Bay Transportation Authority. SFYs = State fiscal years.
Note: Dollars in millions.
Source: Massachusetts Bay Transportation Authority.

Compared to the funding assumptions reported in the last LRTP, *Paths to a Sustainable Region*, there is a trend toward declining funding levels over each five-year time band of this LRTP. Whereas in the FYs 2016–20 time band there is nearly level funding compared to the previous LRTP, in the outer time band of FYs 2031–35, revenues will be reduced by 21 percent. (Comparisons for the FY 2036–40 time band are not available since *Paths to a Sustainable Region* included projections only to FFY 2035.)

This trend reflects an assumption that federal funding levels are declining. As this LRTP was being prepared, Congress had not yet passed new federal legislation that would provide long-term revenue projections. For planning purposes, the federal agencies advised the MPO to assume that revenues will increase by only 1.5 percent each year starting in FFY 2021 and extending though FFY 2040.

**TABLE 4.5**
**Comparison of Available Capital Transit Funds in *Charting Progress to 2040* to the Previous LRTP, *Paths to a Sustainable Region***

| | FFYs 2016-20 | FFYs 2021-25 | FFYs 2026-30 | FFYs 2031-35 | FFYs 2036-40 |
|---|---|---|---|---|---|
| *Paths to a Sustainable Region* Revenue | $1410.00 | $1635.00 | $1895.00 | $2197.00 | -- |
| *Charting Progress to 2040* Revenue | 1391.85 | 1499.42 | 1615.30 | 1740.13 | $1874.62 |
| Difference | ($18.15) | ($135.58) | ($279.70) | ($456.87) | -- |
| **Percentage Change** | **-1%** | **-8%** | **-15%** | **-21%** | **--** |

Note: Dollars in millions.
Source: Central Transportation Planning Staff.

As mentioned previously, the funding assumptions for this LRTP and the associated bond issuance appears insufficient to meet the MBTA's state-of-good-repair needs. The MBTA estimates that it would need an additional $6.7 billion over the next several decades. As this LRTP was being prepared, however, specific projections were not available. In addition, future state commitments to MBTA capital projects were not determined.

In the future, the MBTA intends to use pay-as-you-go financing to fund its capital program. Pay-as-you-go is a financial instrument that uses cash to fund capital projects rather than issuing bonds and incurring debt-service expenses. While the MBTA's goal is to utilize this tool, it is not reflected in this LRTP.

## MWRTA AND CATA CAPITAL PROGRAMS

The capital programs of the two smaller RTAs in the Boston Region, the MWRTA and CATA, are also supported by FTA's formula and discretionary funding programs, and state appropriations through the Commonwealth's RTA Capital Assistance Program.

The MWRTA has in recent years used the majority of its capital funds to finance its new maintenance and operations center in Framingham. Paratransit service began operating out of the facility in July 2015; fixed-route service will be transferred to the facility in July

2016. The MWRTA expects to use capital funds to complete rehabilitation work of the facility and to develop regional CNG fueling facilities. Capital funds are also expected to be used to purchase vehicles, tools and parts, and bus support equipment, as well as for safety and technology enhancements projects.

The current funding levels are sufficient to support the MWRTA's existing levels of service, which provides limited service six days a week. The agency envisions a greater need, however, since ultimately, MWRTA would like to provide more frequent service, including evening and Sunday service. Increasing service to those levels would require additional support from the funding agencies.

The capital costs for the CATA include vehicle replacements as well as enhancement and general maintenance projects, such as technology upgrades and building maintenance. The CATA has implemented an aggressive vehicle replacement schedule over the next several years to bring its fleet into a state-of-good repair. Almost all future capital costs are expected to be for vehicle replacement to maintain the fleet in a state-of-good repair. The CATA will need future additional funding for capital equipment, such as additional vehicles, which are required for service improvements.

Capital funding projections for MWRTA and CATA are depicted in Table 4.6 and 4.7 below. The MWRTA and CATA can expect $51 million and $16 million, respectively, in federal Section 5307 funding for the life of this LRTP.

## TABLE 4.6
## MWRTA Capital Finances by Five-Year Time Band

| Funding Source | SFYs 2016-20 | SFYs 2021-25 | SFYs 2026-30 | SFYs 2031-35 | SFYs 2036-40 | Total |
|---|---|---|---|---|---|---|
| Section 5307 | $7.46 | $9.81 | $10.56 | $11.38 | $12.26 | **$51.47** |
| Section 5337 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **0.00** |
| Section 5339 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **0.00** |
| **Total** | **$7.46** | **$9.81** | **$10.56** | **$11.38** | **$12.26** | **$51.47** |

MWRTA = MetroWest Regional Transit Authority.
SFYs = State fiscal years.
Note: Dollars in millions.
Source: Massachusetts Department of Transportation.

## TABLE 4.7
## CATA Capital Finances by Five-Year Time Band

| Funding Source | SFYs 2016-20 | SFYs 2021-25 | SFYs 2026-30 | SFYs 2031-35 | SFYs 2036-40 | Total |
|---|---|---|---|---|---|---|
| Section 5307 | $2.77 | $2.99 | $3.22 | $3.47 | $3.73 | **$16.18** |
| Section 5337 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **0.00** |
| Section 5339 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **0.00** |
| **Total** | **$2.77** | **$2.99** | **$3.22** | **$3.47** | **$3.73** | **$16.18** |

CATA = Cape Ann Transportation Authority.
SFYs = State fiscal years.
Note: Dollars in millions.

Source: Massachusetts Department of Transportation.

Below is a detailed discussion of the federal funding sources available for the RTAs' capital programs.

## FEDERAL FORMULA FUNDING

Federal aid for transit programs has been authorized by Congress through MAP-21. By this authorization, FTA operates its formula funding programs, which allocate funding to states based on demographic data from the US census for each state's urbanized area (UZA). (A UZA is an area defined by the US Census Bureau with a population of 50,000 or more.) For UZAs with populations of more than 200,000, such as the Boston UZA, the allocations also take into account transit service data reported by recipients of the federal funds. The source of this formula funding as of FY 2015 is the Mass Transit Account of the Highway Trust Fund.

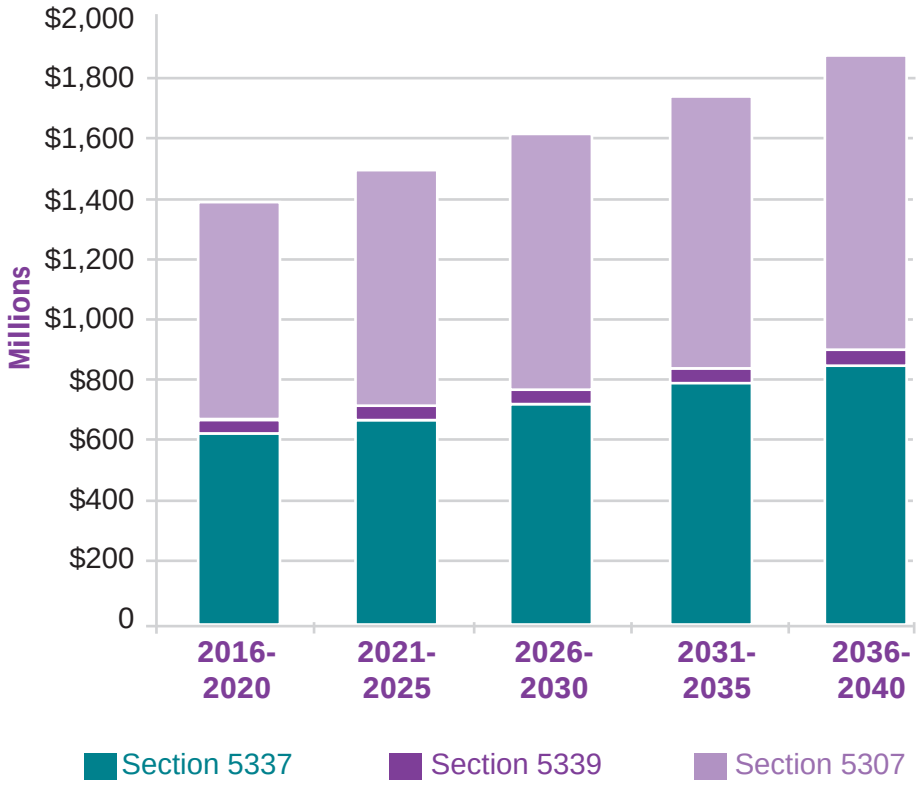
MassDOT is the recipient of this federal aid in the Boston UZA area. MassDOT sub allocates these funds to RTAs based on a negotiated split agreement. The Boston Region MPO programs the formula funds in its TIP and LRTP for the MBTA, MWRTA, and CATA.

The FTA requires a 20 percent non-federal match to the 80 percent federal share of formula grants. In the case of the MBTA, the matching funds are generally revenue bonds. The other RTAs may use funds from the state's RTA Capital Assistance Program or toll credits for the match.

Formula funding reflected in the TIP and LRTP includes funding from FTA program Sections 5307, 5337, and 5339. (See Figure 4.5 below for the MBTA allocation.) Section 5307 is the Urbanized Area Formula Program, which funds capital, planning, job access and reverse-commute projects, and operating assistance for transit agencies. Section 5337, the State-of-Good-Repair Program, supports the maintenance, rehabilitation, and

replacement of transit assets to maintain a state of good repair. Eligible assets include rail, trolley ferries, bus rapid transit, and bus services operating on high-occupancy-vehicle (HOV) facilities. Section 5339, the Bus and Bus Facilities Formula Grants Program, provides funding to replace, rehabilitate, and purchase buses and related equipment as well as construct bus-related facilities.

**FIGURE 4.5**
**MBTA Federal Transit Programs, FFYs 2016–2040 by Time Band**




Source: Central Transportation Planning Staff.

## NON-FORMULA BASED FEDERAL GRANTS

The LRTP also programs federal grants that are provided to this region through non-formula based or competitive programs. A major award came to the Boston Region in early 2015, for example, when the FTA approved $996 million in New Starts funding (through Section 5309, the Fixed Guideway Capital Investment Grant Program) for construction of a light rail extension in the cities of Somerville and Medford. The Green Line Extension project has a multi-year federal commitment that will pay for nearly half the costs of the extension of the line to College Avenue in Medford. More than half of the project will be funded by the Commonwealth. Construction and operating funds for the

Green Line Extension project are reflected in the finances of this LRTP.

Other significant grants were awarded following Hurricane Sandy, when the MBTA received monies from the FTA's Public Transportation Emergency Relief Program to make transit infrastructure more resilient to natural disasters. One $21.67-million grant supported the Green Line Fenway Portal Flood Proofing project, which would erect flood barriers at subway portals in a flood-prone area of Boston. Another $13.39-million grant funded the Charlestown Seawall Replacement project, which would protect a bus maintenance facility in Boston from the adjacent Mystic River flooding. In addition, the MBTA receives funding from the Department of Homeland Security, for security measures.

## STATE APPROPRIATIONS

Other significant state funding is enabled through the Commonwealth's transportation finance legislation. Recent legislation has provided for a $6-billion investment in the MBTA's transit system over a ten-year period. This investment focuses on projects that will keep the system in a state of good repair and those that will help economic expansion in the Commonwealth. These projects include procurement of Red, Orange, and Green Line vehicles and buses, energy conservation projects, upgrades to transit power and signal systems, the state-funded portion of the Green Line Extension project, and the design of the South Coast Rail commuter rail extension project.

Some state-funded transit improvements are occurring through the State Implementation Plan (SIP), which includes a group of transit projects that are legal commitments of the Commonwealth as they are agreed-upon air-quality mitigation measures associated with the Central Artery/Tunnel project. Ongoing SIP projects include the Green Line Extension (to Union Square and Medford Hillside) and improvements to the Fairmount commuter rail line in Boston. Table 4.8 shows these ongoing transit projects along with the cost of the projects.

### TABLE 4.8
### Major Ongoing Infrastructure and Expansion Transit Projects in the Recommended LRTP

| Transit Projects | Type of Project | Cost |
|---|---|---|
| Fairmount Line Improvements Project (Boston) | Expansion/Major Infrastructure | $26,500,000 |
| Green Line Extension Project to College Avenue/Union Square (Somerville and Medford) | Expansion/Major Infrastructure | $1,992,243,000 |

Source: Central Transportation Planning Staff.

Other state funds are made available through the state's RTA Capital Assistance Program.

# Operations and Maintenance

## MBTA OPERATIONS AND MAINTENANCE FINANCING

In 2000, the Massachusetts Legislature updated the MBTA's enabling legislation. This update, commonly referred to as Forward Funding, established the current financing structure of the MBTA. It provided 20 percent of the state sales tax as a dedicated revenue stream for the MBTA and expanded the service area to 175 municipalities for the purpose of collecting local annual assessments. Revenues from these sources are used primarily to fund operations and maintenance costs for the MBTA, but also are used to secure revenue bonds that the MBTA uses to match federal funds for capital projects. Other sources of MBTA operating funds include, transit fare revenues, non-fare sources, state contract assistance, state appropriations, and federal operating assistance.

Over the life of this LRTP, revenues for operations and maintenance are projected to be $70.9 billion, while costs are projected at $69 billion. (See Table 4.9 below.) The revenue projections account for proceeds from the sales tax, local assessments, fares, and other non-fare revenues. The projections also account for state operating assistance for the Green Line Extension and the South Coast Rail commuter rail extension (which has yet to be constructed), and projects and service-related initiatives implemented as mitigation for delays in constructing the Green Line Extension.

The costs include more than $60 billion in operations and maintenance costs and $8.8 billion in debt-service payments. During the life of this LRTP, the MBTA's debt-service payments will account for nearly 13 percent of the MBTA's total operating expenses. The MBTA's debt service is discussed later in this chapter.

## TABLE 4.9
## MBTA Operations and Maintenance Revenues and Costs by Five-Year Time Band

| | SFYs 2016-20 | SFYs 2021-25 | SFYs 2026-30 | SFYs 2031-35 | SFYs 2036-40 | Total |
|---|---|---|---|---|---|---|
| **Operations and Maintenance Revenues:** | | | | | | |
| Sales Tax and Local Assessments* | $5,904 | $6,373 | $6,925 | $7,558 | $8,263 | **$35,023** |
| Fare Revenue | 3,156 | 3,484 | 3,972 | 4,666 | 5,227 | **$20,505** |
| Non-Fare Revenue** | 1,999 | 2,685 | 3,095 | 3,514 | 4,000 | **$15,293** |
| Federal Funds | 32 | 20 | 20 | 20 | 20 | **$112** |
| **Total Operations and Maintenance Revenues** | **$11,091** | **$12,562** | **$14,012** | **$15,758** | **$17,510** | **$70,933** |
| **Operations and Maintenance Costs:** | | | | | | |
| Operations and Maintenance Costs | $8,616 | $10,213 | $11,875 | $13,730 | $15,927 | **$60,361** |
| Debt Service | 2,401 | 2,117 | 1,704 | 1,467 | 1,133 | **$8,822** |
| **Total Operations and Maintenance Costs** | **$11,017** | **$12,330** | **$13,579** | **$15,197** | **$17,060** | **$69,183** |
| **Difference Between Revenues and Costs** | **$74** | **$232** | **$433** | **$561** | **$450** | **$1,750** |

* includes sales tax and assessments. ** includes GLX Mitigation, State Operating Assistance for GLX and South Coast Rail, and additional state contract assistance
GLX = Green Line Extension Project. SFYs = State fiscal years.
Note: Dollars in millions.

Source: Massachusetts Bay Transportation Authority.

Below is a summary of the various funding sources for the MBTA's operations and maintenance.

### *Sales Tax*

The dedicated revenues from state sales tax are equal to whichever is greater, the amount of actual sales tax receipts generated from the 20 percent of the statewide sales tax dedicated to the MBTA, or a base revenue amount. The annual amount of dedicated sales tax revenues the MBTA receives is subject to annual upward adjustment to a maximum 3 percent increase based on a comparison of the percentage increase of inflation to the increase in actual sales tax receipts.

Legislation enacted in 2014 (Chapter 359 of the Acts of 2014, amending Chapter 10, Section 35T) increased the base revenue amount in SFY 2015 to $970.6 million, and increased the dedicated sales tax revenue amount to MBTA by an additional $160 million annually.

During the period SFY 2016 to SFY 2040, sales tax revenue is assumed to increase at an average of approximately 2 percent per year. Therefore, the projected sales tax revenue the MBTA expects to receive for the life of this LRTP equals approximately $29.7 billion, which would exceed the base revenue amount.

### *Local Assessments*

The MBTA also receives funding through local assessments in accordance with a statutory formula. The 175 municipalities within the MBTA's service district pay an assessment to the MBTA on an annual basis. The amount paid by each municipality varies according to the population and the level of service provided.

Proceeds from local assessments were $160 million in SFY 2015. Local assessments are assumed to increase 2 percent each year through SFY 2040. During the life of this LRTP, projected local assessment revenue equals approximately $5.3 billion.

### *Fare Revenue*

Fare revenue projections from the existing system were $598 million in SFY 2015 and are projected to increase by an average of 3 percent per year to yield $20.5 billion for the life of the LRTP.

Current legislation sets fare increases at no more than 5 percent every other year with the next one set for SFY 2017. No additional fare increases are assumed in this LRTP.

### *Non-Fare Revenue*

The MBTA derives its non-fare revenue from a variety of sources, including parking fees, advertising, concessions, rent, interest income, utility reimbursements, and non-operating revenues, such as income earned on investments and sale of property.

Non-fare revenue figures reflected in this LRTP include those items as well as revenues from implementing projects and service-related initiatives that mitigate for delays in the operation of the Green Line Extension, state operating assistance for the Green Line Extension and South Coast Rail projects, and additional state contract assistance.

The non-fare revenue in SFY 2015 was $214 million. During the life of this LRTP, projected non-fare revenue equals approximately $15.2 billion.

### *Federal Operating Assistance*

Federal operating assistance is received from the FTA Section 5307 Preventative Maintenance funding. The federal operating assistance revenue in SFY 2015 was $12 million. The level of funding from Section 5307 is presumed to decline during the life of this LRTP, from $12 million in SFY 2016 to $8 million in SFY 2017 to $4 million each year thereafter. For the life of this LRTP, projected federal operating assistance equals approximately $112 million.

### *MBTA Operating Expenses and Debt Service*

The MBTA's operating expenses include wages, benefits, payroll taxes, materials, supplies, and purchased transportation services. Operating expenses for SFY 2015 were $1.5 billion. The Green Line Extension Finance Plan also assumes a variable average annual increase in operating costs of 3 to 4 percent, averaging 3 percent from SFY 2016 to SFY 2040. This percentage is based on trend line analysis of known anticipated needs and past operating costs.

Total operating expenses during the life of the LRTP are estimated to be $69 billion. This cost includes more than $60 billion in operating and maintenance costs and $8.8 billion in debt-service payments. Costs are projected to increase during the life of the LRTP from $8.6 billion in SFY 2016–20 time band to nearly $16 billion in the outer SFY 2036–40 time band. Meanwhile, debt service payments are scheduled to decline during the life of the LRTP, from a high of $2.4 billion in the SFY 2016–20 time band to $1.1 billion in the outer SFY 2036–40 time band.

MBTA bonds were previously backed by the Commonwealth prior to enactment of the Forward Funding legislation. Upon the effective date of the Forward Funding legislation, however, contract payments from the state ceased, and all outstanding debt became the MBTA's responsibility. The $8.8 billion figure cited here represents both current and prior-obligation debt.

(See Table 4.9 above for operations and maintenance revenues and costs by five-year time band.)

### *MWRTA and CATA Operations and Maintenance Financing*

The operation and maintenance needs of the MWRTA and CATA are funded through a variety of sources: local assessments paid by member communities; State Contract Assistance funds provided through the state legislature; fare revenue; advertising revenue; and federal formula and discretionary funds. CATA also generates operating revenue from rent received from leasing the second floor of its building and contract transportation service.

Both RTAs' operating expenses include administrative staff expenses (salaries, benefits, payroll taxes), materials, supplies, services, and purchased transportation. The purchased transportation costs include the operating expenses of the private companies that, under contractual arrangements, operate the RTA's services, and management fees. The RTAs are required by law to contract out the operation of their transit service to a private company. These operating arrangements are expected to continue in the future.

Over the life of this LRTP, the MWRTA's operations and maintenance costs are projected to total $253.7 million. This figure includes $1.25 million in debt service

payments. Revenues are expected to fully cover those costs. It should be noted however, that the MWRTA provides limited service. Future service improvements, including evening and weekend service, will require additional support.

Over the life of this LRTP, the CATA's operations and maintenance costs are projected to total $98.8 million. This figure includes approximately $1 million in debt service payments. Revenues are projected to be $97.8 million. Thus, additional operating funding would be required to maintain and improve transit services in the future.

Summaries of the various funding sources for the MWRTA's and CATA's operations and maintenance are in Tables 4.10 and 4.11 below.

## Table 4.10
## MWRTA Operations and Maintenance Revenues and Costs by Five-Year Time Band

| | SFYs 2016-20 | SFYs 2021-25 | SFYs 2026-30 | SFYs 2031-35 | SFYs 2036-40 | Total |
|---|---|---|---|---|---|---|
| **Operations and Maintenance Revenues:** | | | | | | |
| Local Assessments | $11.30 | $12.79 | $14.47 | $16.37 | $18.52 | **$73.48** |
| Fare Revenue | 3.28 | 3.71 | 4.20 | 4.75 | 5.37 | **21.33** |
| Non-Fare Revenue | 1.00 | 1.14 | 1.28 | 1.45 | 1.65 | **6.54** |
| State Contract Assistance | 12.78 | 14.46 | 16.36 | 18.51 | 20.95 | **83.08** |
| Federal Funds | 10.65 | 12.05 | 13.64 | 15.43 | 17.46 | **69.25** |
| **Total Operations and Maintenance Revenues** | **$39.04** | **$44.17** | **$49.97** | **$56.54** | **$63.97** | **$253.70** |
| **Operating Costs:** | | | | | | |
| Operations and Maintenance Costs | $38.84 | $43.95 | $49.72 | $56.26 | $63.65 | **$252.44** |
| Debt Service | 0.19 | 0.21 | 0.24 | 0.28 | 0.31 | **1.25** |
| **Total Operations and Maintenance Costs** | **$39.04** | **$44.17** | **$49.97** | **$56.54** | **$63.97** | **$253.70** |
| **Difference Between Revenues and Costs** | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** |

Note: Dollars in millions.

Source: MetroWest Regional Transit Authority.

## Table 4.11
## CATA Operations and Maintenance Revenues and Costs by Five-Year Time Band

| | SFYs 2016-20 | SFYs 2021-25 | SFYs 2026-30 | SFYs 2031-35 | SFYs 2036-40 | Total |
|---|---|---|---|---|---|---|
| **Operations and Maintenance Revenues:** | | | | | | |
| Local Assessments | $2.55 | $2.88 | $3.26 | $3.69 | $4.18 | **$16.58** |
| Fare Revenue | 0.99 | 1.12 | 1.27 | 1.44 | 1.63 | **6.48** |
| Non-Fare Revenue | 1.43 | 1.62 | 1.84 | 2.08 | 2.35 | **9.35** |
| State Contract Assistance | 8.27 | 9.35 | 10.58 | 11.97 | 13.55 | **53.74** |
| Federal Funds | 1.79 | 2.03 | 2.29 | 2.59 | 2.94 | **11.66** |
| **Total Operations and Maintenance Revenues** | **$15.05** | **$17.03** | **$19.27** | **$21.80** | **$24.66** | **$97.83** |
| **Operation and Maintenance Costs:** | | | | | | |
| Operation and Maintenance Costs | $15.05 | $17.03 | $19.27 | $21.80 | $24.66 | **$97.83** |
| Debt Service | 0.15 | 0.17 | 0.20 | 0.22 | 0.25 | **1.01** |
| **Total Operations and Maintenance Costs** | **$15.21** | **$17.21** | **$19.47** | **$22.03** | **$24.92** | **$98.85** |
| **Difference Between Revenues and Costs** | **$(0.15)** | **$(0.17)** | **$(0.20)** | **$(0.22)** | **$(0.25)** | **$(1.01)** |

Note: Dollars in millions.
Source: Cape Ann Transportation Authority.

# 5 THE RECOMMENDED PLAN

## BACKGROUND

A major component in LRTP development is the Recommended Plan. The Recommended Plan cites the major, regionally significant projects and investment programs that have been selected for funding for the life of the LRTP. This chapter explains what transportation infrastructure the MPO expects to fund during the next 25 years. It particularly focuses on those projects and programs that will be funded with MPO discretionary funds. The chapter begins with an overview of key elements that form the backdrop for these decisions and goes on to explain the project and program selection process. It then describes the projects and programs that comprise the Recommended Plan. Finally, this chapter describes the travel demand model results and offers an interpretation of the Recommended Plan's projects and programs.

### *The MPO's Challenge*

The ultimate purpose of transportation is to serve human activity; therefore, the MPO defines its challenge for this LRTP as:

> *How can we maintain the transportation network to meet existing needs, adapt and modernize it for future demand, while simultaneously working within the reality of constrained fiscal resources?*

### *Balancing Diverse Needs*

The MPO recognizes the diversity of transportation needs throughout the Boston region. Matters of system preservation, safety, capacity management and mobility, the environment, economic vitality, and transportation equity all need to be addressed to balance diverse needs and reach the region's goals. The Recommended Plan demonstrates the MPO's method for reaching this balance—to provide adequate funding for regionally significant major infrastructure and capacity-adding projects as well as investment programs. A major infrastructure project is one that costs more than $20 million. An expansion project is one that adds capacity to the existing system through adding a travel lane, constructing an interchange, building an extension of a commuter rail or rapid transit line, or procuring additional (not replacing) public transportation vehicles. Other investment programs allow for smaller-

scale projects that would be funded through the Transportation Improvement Program. This Recommended Plan is the MPO's response to the challenge above, including the issue of diversity.

## Issues

The Recommended Plan addresses the following issues:

- The region's infrastructure is aging; clearly, the demands placed on highway and transit facilities have been taxing to the point that routine maintenance is insufficient to keep up with maintenance needs. As a result, there is a significant backlog of maintenance and state-of-good-repair work to be done on the highway and transit system, including on bridges, roadway pavement, transit rolling stock, and traffic and transit control equipment. Under these circumstances, the MPO recognizes that the concept of preservation has become even more important. Maintenance needs must be prioritized in a way that will address the most serious problems with the most effective investments in order to provide maximum current and future benefits. The Recommended Plan provides mechanisms for this.
- The Recommended Plan also needs to support a transportation system that expands travel choices within the region. While advocating for a system that adequately supports all modes of travel, the MPO recognizes that many people in the region are, and will continue to be, reliant on the automobile. MPO members expect both roadway congestion to worsen and transit demand to increase in the future. They recognize that many travel options need to be advanced in order to reduce our dependence on the single-occupant vehicle.
- Climate change likely will affect the Boston region significantly if climate trends continue as projected. In order to minimize the negative impacts, the MPO is taking steps to decrease our carbon footprint while simultaneously adapting our transportation system to minimize damage from natural hazards. The MPO strongly considers projects and strategies that protect and enhance the environment, promote energy conservation, and improve quality of life in the region.
- The Recommended Plan's transportation investments support livability by providing residents with convenient access to opportunities and resources. Affordable housing, access to services, employment opportunities, and shopping in close proximity all contribute to the livability of a community, as do safe, affordable, and healthy options for getting around.
- The MPO seeks, in the Recommended Plan, to provide access to transportation services on an equitable basis across the region. This includes, but is not limited to, providing transportation options to low-income and minority communities for travel to jobs, services, and other important destinations.

- Finally, the MPO recognizes that the transportation system plays a critical role in the continued economic health of the region. Many sectors of the economy depend heavily on safe and efficient movement of goods and services by truck, rail, air, and water.

## PROJECT SELECTION

Chapter 2, Process for Developing Charting Progress to 2040, describes the MPO's process for selecting the recommended projects and programs included in this LRTP in more detail. The steps are summarized below:

1. Development of MPO's vision, goals, and objectives (Chapter 1)
2. Assessment of region's transportation needs (Chapter 3)
3. Analysis of future transportation scenarios (Appendix A)
4. Development of a Universe of Projects and Programs list (Appendix B)
5. Evaluation of major infrastructure projects (Appendix C)
6. Review of transportation revenues available for programming projects and programs through 2040 (Chapter 4)
7. Account of public participation that spanned the entire development process (Chapter 2 and Appendix D)

To develop the Recommended Plan, MPO staff needed to identify the region's top-priority highway and transit projects as candidates for funding. To arrive there, staff first had to comprise a draft list of major infrastructure projects and other investment programs for modeling. MPO staff used the information listed above, including results of the initial scenario planning, to create a balanced list that fits within the fiscal constraints of the LRTP.

### *Development of Alternative LRTP Scenarios*

Developing the draft list of major infrastructure projects and other investment programs involved balancing two conflicting MPO policies:

- The policy and practice of maintaining its previous LRTP and TIP programming commitments
- The operations and management (O&M) approach to programming—a new policy of giving priority to low-cost, non-major infrastructure projects (adopted as part of this LRTP)

The MPO intends to ensure that the projects and programs funded in *Charting Progress to 2040* advance its goals. To address this, the MPO considered two alternatives: 1) program the projects included in *Paths to a Sustainable Region*, the previous LRTP, and 2) use the O&M approach for programming lower-cost projects as analyzed as part of the *Charting Progress to 2040* development process.

## FIRST ALTERNATIVE—PROGRAM PROJECTS IN *PATHS TO A SUSTAINABLE REGION*

This alternative programmed all of the unfunded major infrastructure projects from *Paths to a Sustainable Region* in the five-year time bands established for *Charting Progress to 2040* (2016–2020, 2021–2025, 2026–2030, 2031–2035, and 2036–2040). Funding was available for all of the projects, although not in the same time bands because of reductions in available revenue. These major infrastructure projects, however, accounted for 68 percent of the total funding available for the 25-year period. This would not allow many smaller projects that do not add capacity or cost less than $20 million (the projects that do not need to be listed in the LRTP) to be funded over the next 25 years.

## SECOND ALTERNATIVE—O&M FUNDING

The O&M alternative targeted funding to lower-cost improvements such as intersection and complete street projects and a limited amount of major infrastructure projects. As shown in the scenario planning process (see Appendix A), this alternative was more effective in addressing the MPO's goals and would provide greater opportunities to ensure geographic equity (money can be distributed throughout the region, as opposed to being concentrated in a few specific projects).

To develop the staff recommendation for major infrastructure projects under the O&M alternative, staff applied the MPO's goals and objectives as criteria in a qualitative evaluation of the major infrastructure and capacity-adding highway projects. This was done for projects included in the Universe of Projects and Programs list that were sufficiently well defined to allow for analysis. Many of the major infrastructure projects in *Paths to a Sustainable Region* had been determined previously to address MPO priorities similar to the goals in *Charting Progress to 2040*; the projects that had rated highly in *Paths to a Sustainable Region* continue to rate highly in the *Charting Progress to 2040* project-evaluation process. In addition, many projects were identified in the *Charting Progress to 2040* Needs Assessment. For these reasons, staff included some of the *Paths to a Sustainable Region* major infrastructure projects in their recommendation for this LRTP. Some projects needed to be eliminated because of reduced available revenues in *Charting Progress to 2040*.

Respecting the MPO's policy to maintain its commitments in the TIP, the staff recommendation continued to include those projects that were programmed in the FFYs 2015–18 TIP and others that rated well. Staff then updated information about project readiness and costs of the highly rated projects. Once the major infrastructure projects

were selected for *Charting Progress to 2040* (considering their updated readiness and costs), the remaining funding was used to implement the MPO's new policy of giving priority to the O&M program projects. Staff recommended implementing programming for O&M programs beginning in the FFYs 2021–26 time band and proposed funding in each program through the remaining time bands.

Staff developed the O&M alternative using the following assumptions for the various investment programs:

- No more than 50 percent of available funding in each five-year time band would be allocated to major infrastructure projects.
- If one major infrastructure project required more than 50 percent of funding in a particular time band, it would not be programmed.
- Four investment programs were established for the smaller projects that cost less than $20 million and/or did not add capacity. This would give municipalities the confidence to begin designing projects knowing that there would be funding in the later years of the LRTP. Funding for the O&M investment programs used the funds that were left after the major infrastructure program was determined. Detailed information on each program is found under the Recommended List of Projects and Programs section of this chapter. The O&M investment programs and funding assumptions are as follows:
    1. Complete Streets Program – 58 percent
    2. Intersection Improvements Program – 28 percent
    3. Bicycle and Pedestrian Program – 10 percent
    4. Community Transportation, Parking, and Clean Air and Mobility Program – 4 percent

  The first three programs include the types of projects that typically are funded in the TIP. The fourth, the Community Transportation, Parking, and Clean Air and Mobility Program, is a revival and expansion of the MPO's Clean Air and Mobility program (which had been in hiatus for several years because of lack of funding); it was established based on input from public outreach and information from the Needs Assessment.

## *Selection of the Recommended Projects and Programs*

The MPO reviewed and discussed the two alternatives and ultimately adopted the O&M scenario as the basis for recommending projects and programs in the draft LRTP. After

further discussion, the MPO voted to adjust the last two time bands of the LRTP (2031–2035 and 2036–2040) continuing to fund the four O&M programs but leaving the major infrastructure program unallocated at this time. This was because of a number of factors:

- The Project Selection Advisory Council (PSA Council) was established by the state legislature to establish uniform project selection criteria for developing a comprehensive state transportation plan consistent with state and federal legislation and policies. The PSA Council was charged with delivering its recommendations for a project priority formula or other data-driven process to the legislature by June 30, 2015. The MPO decided to wait for these recommendations before programming new projects in the later time bands.
- MassDOT's Capital Investment Plan for both highway and transit projects outlining the Commonwealth's priorities for major highway and transit projects had not been released yet. The MPO felt that this information was important before determining projects that could be funded by the MPO in later years.
- MassDOT is beginning to develop the Program for Mass Transportation and determining its long-range priorities for transit in the region. The MPO felt that this information was also important to know before determining projects that could be funded by the MPO in later years.

Ultimately, the final selection of projects was based on the informed judgment of MPO members after they reviewed information obtained through the LRTP development process, including:

- Conclusions from the regional Needs Assessment (Volume II of the LRTP)
- Results from the scenario-planning process
- Information about projects available through feasibility studies, project-specific modeling work, and environmental impact reports
- Examination of individual highway and transit projects for conformity with the MPO's goals and objectives
- Feedback from the Regional Transportation Advisory Council, the MPO's advisory group, and the public via the MPO's LRTP outreach process
- MPO members' knowledge of proposed projects

A list of the major infrastructure projects and O&M programs is shown in Table 5.1; they are described in the next section.

## TABLE 5.1
## Major Infrastructure Projects in the Recommended Plan

| Project Name | Current Cost |
|---|---|
| Middlesex Turnpike Improvements, From Crosby Drive North to Manning Road, Phase III (Bedford and Billerica) | $26,935,000 |
| Reconstruction of Rutherford Avenue, from City Square to Sullivan Square (Boston) | $109,967,000 |
| Intersection Improvements at Route 126 and Route 135/MBTA and CSX Railroad (Framingham) | $115,000,000 |
| Route 4/225 (Bedford Street) and Hartwell Avenue (Lexington) | $23,221,000 |
| Bridge Replacement, Route 27 (North Main St.) over Route 9 (Worcester St.) and Interchange Improvements (Natick) | $25,793,000 |
| Reconstruction of Highland Avenue, Needham Street and Charles River Bridge, from Webster Street to Route 9 (Newton and Needham) | $14,298,000 |
| McGrath Boulevard Project (Somerville) | $56,600,000 |
| Green Line Extension Project (Phase 2), College Avenue to Mystic Valley Parkway/Route 16 (Somerville and Medford) | $190,000,000 |
| Reconstruction and Widening on Route 18 (Main Street) From Highland Place to Route 139 (Weymouth and Abington) | $58,822,000 |
| Reconstruction of Montvale Avenue, from I-93 Interchange to Central Street (Woburn) | $4,225,000 |
| Bridge Replacement, New Boston Street over MBTA (Woburn) | $9,707,000 |

# RECOMMENDED LIST OF PROJECTS AND PROGRAMS

This LRTP includes funding to meet the needs and address the issues discussed in the Background section above, including maintenance and expansion of the transportation system. Funding for much of the roadway maintenance in the Boston Region MPO area is provided through statewide resurfacing, maintenance, and infrastructure programs. Maintenance of the bridges is provided through the statewide bridge program and the Accelerated Bridge Program.

In the Boston region, the highway network's major infrastructure and capacity expansion projects, and other maintenance and rehabilitation projects not included in the statewide programs are funded through the Boston Region MPO's share of the discretionary capital

program. The selection of projects and programs using these funds was described in the Project Selection section above.

In this LRTP, for the transit network, the MPO has allocated all of the MBTA's future transit capital funding to system infrastructure maintenance, accessibility improvements, and system enhancements. It also demonstrates the MPO's commitment to State Implementation Plan projects by programming and funding them.

The following ongoing no-build major infrastructure and expansion projects are funded in this LRTP:

- Route 128 Additional Lanes (Randolph to Wellesley): The total budget for this project is approximately $381.4 million; the remaining costs funded are $57.8 million. The completion date is projected to be 2019.
- Fairmount Line Improvements: This is a State Implementation Plan project. The Commonwealth committed $135 million to this project. The remaining cost, funded under this LRTP, is $26.5 million. The completion date is projected to be the end of calendar year 2018.
- Green Line Extension to College Avenue and Union Square in Somerville: The Commonwealth committed $996.122 million to this project. The Federal Transit Administration committed $996.121 million to this project. The completion date is projected to be 2020.

After accounting for the costs of these ongoing projects, the remaining funds are available for major infrastructure and capacity expansion or set aside for low-cost, non-capacity-adding projects that advance the MPO's visions and policies. Table 5.1 listed the projects funded under the major infrastructure program and their current costs. Figure 5.1 shows the locations of these projects. As shown in Table 5.1, the Recommended Plan allocates the majority of highway funding for highway projects. However, it also provides for flexing $190 million in highway funding to one transit project.

# FIGURE 5.1
## Major Infrastructure Projects in the Recommended Plan



All public transportation funds are used for improvements to the regional public transportation system. Based on this distinction, the major infrastructure projects total approximately $805 million, 28 percent, of the MPO's discretionary funds. The MPO also included funding for approximately $1.5 billion, 54 percent, in roadway modernization projects and programs, and $63 million, 2 percent, for a community transportation, parking, and clean air and mobility program. Table 5.2 shows the total amount of funding dedicated to major infrastructure projects and O&M programs in this LRTP. In the last two time bands of the LRTP, $446.7 million, 16 percent, has been left unallocated.

**TABLE 5.2**
**Funding Dedicated to Programs in the LRTP**

| Program | Dedicated Funding |
|---|---|
| MPO Discretionary Capital Program: Major Infrastructure Projects | $615,363,800 |
| MPO Discretionary Capital Program: Highway Funds Flexed to Transit | $190,000,000 |
| MPO Discretionary Capital Program: Complete Street Program | $936,262,700 |
| MPO Discretionary Capital Program: Intersection Improvement Program | $443,639,500 |
| MPO Discretionary Capital Program: Bicycle/Pedestrian Program | $158,442,700 |
| MPO Discretionary Capital Program: Community Transportation/ Parking/ Clean Air and Mobility Program | $63,377,100 |
| MPO Discretionary Capital Program: Unassigned Funds | $446,707,600 |
| **Total Highway Funding** | **$2,853,793,400** |
| Transit Expansion Projects Funded in the Boston Region MPO by the Commonwealth | $1,555,250,000 |
| **Transit Funding** | **$1,555,250,000** |

## *Highway Projects in the Recommended Plan*

Table 5.3 lists the highway projects funded under the major infrastructure program, as well as other investment programs established for O&M projects, their costs, and the period in which they are projected to be programmed. The list also includes the Green Line Extension from College Avenue to Mystic Valley Parkway/Route 16 transit project, which is using highway funds flexed to transit.

Pursuant to federal guidance for allowing for inflation, costs associated with each highway project are based on the current estimated cost plus four percent per year through the year of construction. (Figure 5.1 shows the location of each project.) Table 5.4 lists bridges that cost more than $20 million and currently are scheduled to be advertised. The next section of this chapter first provides a detailed description, current cost, and map for each major infrastructure highway project in the Recommended Plan; it also provides a detailed description of the other investment programs.

# TABLE 5.3
## Major Infrastructure Projects Programmed with Highway Funding in the Recommended Plan with Costs

| Project Name | Current Cost | Investment Category | FFY 2016–2020 | FFY 2021–2025 | FFY 2026–2030 | FFY 2031–2035 | FFY 2036–2040 | MPO Funding | Non-MPO Funding |
|---|---|---|---|---|---|---|---|---|---|
| Route 128 Additional Lanes (Needham & Wellesley) | $57,768,183 | MI | $57,768,183 | | | | | $57,768,183 | |
| Middlesex Turnpike Improvements from Crosby Dr North to Manning Rd, Phase III (Bedford & Billerica) | $26,935,171 | MI | $28,296,348 | | | | | $28,296,348 | $1,000,000 |
| Reconstruction of Rutherford Ave, from City Sq to Sullivan Sq (Boston) | $109,967,000 | MI | $7,000,000 | $106,268,126 | | | | $113,268,126 | $15,377,710 |
| Intersection Improvements at Rte 126 & Rte 135/MBTA & CSX Railroad (Framingham) | $115,000,000 | MI | | | $184,118,700 | | | $184,118,700 | |
| Route 4/225 (Bedford St) and Hartwell Ave (Lexington) | $23,221,000 | MI | | $30,557,000 | | | | $30,557,000 | |
| Bridge Replacement, Rte 27 (North Main St) over Rte 9 (Worcester St) and Interchange Improvements (Natick) | $25,793,370 | MI | | $33,942,300 | | | | $33,942,300 | |
| Reconstruction of Highland Ave, Needham St & Charles River Bridge, from Webster St to Rte 9 (Newton & Needham) | $14,297,606 | MI | $15,464,292 | | | | | $15,464,292 | |
| McGrath Boulevard Project (Somerville) | $56,563,000 | MI | | | $90,559,000 | | | $90,559,000 | |
| Green Line Extension Project (Phase 2), College Ave to Mystic Valley Parkway/Rte 16 (Somerville to Medford) | $190,000,000 | MI | $158,000,000 | $32,000,000 | | | | $190,000,000 | |
| Reconstruction & Widening on Rte 18 (Main St) from Highland Pl to Rte 139* (Weymouth & Abington) | $58,822,115 | MI | $45,281,758 | | | | | $45,281,758 | $14,771,760 |

## TABLE 5.3 (Cont.)
## Major Infrastructure Projects Programmed with Highway Funding in the Recommended Plan with Costs

| Project Name | Current Cost | Investment Category | FFY 2016–2020 | FFY 2021–2025 | FFY 2026–2030 | FFY 2031–2035 | FFY 2036–2040 | MPO Funding | Non-MPO Funding |
|---|---|---|---|---|---|---|---|---|---|
| Reconstruction of Montvale Ave, from I-93 Interchange to Central St (Woburn) | $4,225,256 | MI | $4,752,838 | | | | | $4,752,838 | |
| Bridge Replacement, New Boston St over MBTA (Woburn) | $9,706,549 | MI | $11,355,289 | | | | | $11,355,289 | |
| Complete Street Program (Regionwide) | | CS | | $152,018,630 | $177,609,859 | $321,301,910 | $268,037,266 | $918,967,664 | |
| Bicycle/Pedestrian Program (Regionwide) | | B/P | | $26,210,109 | $30,622,389 | $55,396,881 | $46,213,322 | $158,442,701 | |
| Intersection Improvement Program (Regionwide) | | INT | | $73,388,304 | $85,742,690 | $155,111,267 | $129,397,301 | $443,639,562 | |
| Community Transportation/ Parking/Clean Air Mobility Program (Regionwide) | | CT/ PK/ CA | | $10,484,043 | $12,248,956 | $22,158,752 | $18,485,329 | $63,377,080 | |
| Total Available Regional Highway Target Funds | | | $441,648,080 | $464,868,512 | $580,901,594 | $657,770,110 | $708,605,218 | $2,853,793,514 | $31,149,470 |
| Total Programmed Regional Highway Target Funds | | | $345,213,746* | $464,868,512 | $580,901,594 | $553,968,810 | $462,133,218 | $2,407,085,880* | |
| Regional Highway Target Funds Available | | | $96,434,334 | $0 | $0 | $103,801,300 | $246,472,000 | $446,707,634 | |
| Percentage of Funding Allocated | | | 78% | 100% | 100% | 84% | 65% | 84% | |

* Includes funding from projects not listed in LRTP but included in the 2016-2019 TIP

MI - Major Infrastructure Program

CS - Complete Streets Program

B/P - Bicycle/Pedestrian Program - Assabet River Rail Trail will be funded under this program

INT - Intersection Improvement Program

CT/PK/CA - Community Transportation/Parking/Clean Air and Mobility Program

## TABLE 5.3 (Cont.)
## Major Infrastructure Projects Programmed with Highway Funding in the Recommended Plan with Costs

| Project Name | Current Cost | Investment Category | FFY 2016–2020 | FFY 2021–2025 | FFY 2026–2030 | FFY 2031–2035 | FFY 2036–2040 | MPO Funding |
|---|---|---|---|---|---|---|---|---|
| Major Infrastructure | | | $327,918,708 | $202,767,426 | $274,677,700 | $0 | $0 | $805,363,835 |
| Complete Street | | | $17,295,037 | $152,018,630 | $177,609,859 | $321,301,910 | $268,037,266 | $936,262,701 |
| Bicycle and Pedestrian | | | $0 | $26,210,109 | $30,622,389 | $55,396,881 | $46,213,322 | $158,442,701 |
| Intersection Improvement Program | | | $0 | $73,388,304 | $85,742,690 | $155,111,267 | $129,397,301 | $443,639,562 |
| Community Transportation | | | $0 | $10,484,043 | $12,248,956 | $22,158,752 | $18,485,329 | $63,377,080 |
| Unallocated Funds | | | $96,434,334 | $0 | $0 | $103,801,300 | $246,472,000 | $446,707,634 |
| **Total** | | | **$441,648,079** | **$464,868,512** | **$580,901,594** | **$657,770,110** | **$708,605,218** | **$2,853,793,514** |
| | | | | | | | | |
| % Major Infrastructure | | | 74% | 44% | 47% | 0% | 0% | 28% |
| % Complete Street | | | 4% | 33% | 31% | 49% | 38% | 33% |
| % Bicycle and Pedestrian | | | 0% | 5% | 5% | 8% | 6% | 6% |
| % Intersection Improvement Program | | | 0% | 16% | 15% | 24% | 18% | 16% |
| % Community Transportation | | | 0% | 2% | 2% | 3% | 3% | 2% |
| % Unallocated Funds | | | 22% | 0% | 0% | 16% | 35% | 15% |
| **% Total** | | | **100%** | **100%** | **100%** | **100%** | **100%** | **100%** |

## TABLE 5.4
## Highway Bridges with Estimated Costs of More than $20 Million

| Municipality | Project | FFY 2016–2020 | FFY 2021–2025 | FFY 2026–2030 | FFY 2031–2035 | FFY 2036–2040 |
|---|---|---|---|---|---|---|
| Hanover and Norwell | Superstructure Replacement Route 3 over Route 123 (Webster Street) and Route 3 over Route 123 (High Street) | $41,955,600 | | | | |
| Boston | North Washington Street over the Charles River | $117,208,000 | | | | |
| Lynn and Saugus | Route 107 over the Saugus River | $45,000,000 | | | | |
| **Total Statewide Bridge Program** | | **$204,163,600** | | | | |

# PROJECT DESCRIPTIONS

# BEDFORD AND BILLERICA: MIDDLESEX TURNPIKE, PHASE 3 ($26,935,000)

## Project Description

The proposed improvements will widen Middlesex Turnpike from 800 feet north of Plank Street to 900 feet north of Manning Road. This will provide two lanes in each direction, making it a four-lane highway with a median. There will be left-turn lanes at key intersections. The improvements span approximately 1.5 miles and include reconstructing the bridge over the Shawsheen River. The roadway's cross-section width will increase to 70 feet, and the total right-of-way will be 85 feet wide. Each direction will consist of a 14-foot outside travel lane, a 13-foot inside travel lane, and a 16-foot median. The median will be reconfigured at key intersections and driveways as a 4-foot median with a 12-foot protected left-turn lane. On the east side of the 70-foot travel way is a 7-foot grass strip, and on the west side are a 3-foot grass strip and a 4-foot concrete sidewalk.

## Project Context and Possible Impacts by MPO Goal

### CAPACITY MANAGEMENT/MOBILITY

#### *Roadways:*

A draft environmental impact report (DEIR) for earlier phases of this project, completed in 1995, contained a roadway segment capacity analysis. This analysis showed that the Middlesex Turnpike operated at level of service (LOS) E in the AM and PM peak hours; and, at six out of seven intersections along this roadway, the critical movement in the AM and PM peak hours operated at LOS F. In terms of delay, Congestion Management Process (CMP) monitoring conducted in 2002 found that the average travel speed is less than 70 percent of the posted speed along four segments in both the northbound and southbound directions, in both the AM and PM peak periods. MassDOT traffic counts as recent as 2007 show average weekday traffic ranging between 15,000 and 25,000 vehicles between Billerica and Burlington.

#### *Transit:*

The MBTA and the Lowell Regional Transit Authority (LRTA) provide bus service in this corridor that connects with the downtown areas of Boston and Lowell.

#### *Pedestrians/bicycles:*

This project will add three miles of new bicycle lanes and rebuilt sidewalks.

### SAFETY

There are no high-crash locations within the study area for the years 2010 to 2012, according to MassDOT's list of the top-200 high-crash intersections.

## SYSTEM PRESERVATION

Three lane-miles of substandard pavement and one substandard bridge will be replaced as part of this project.

## ECONOMIC VITALITY

The project consists of a corridor that spans two communities, Bedford and Billerica. The area in Bedford is zoned for industrial park, industrial, general business, and residential uses. The area in Billerica is zoned for industrial uses.

This phase of the reconstruction of the Middlesex Turnpike is in Bedford and Billerica, immediately north of an MPO-designated priority development area in Burlington. This project will improve access to the priority development area from US Route 3.

## TRANSPORTATION EQUITY

This project is not within an environmental justice (EJ) area.



# BOSTON: RUTHERFORD AVENUE/SULLIVAN SQUARE ($109,967,000)

## *Project Description*

The Rutherford Avenue project seeks to transform the corridor's highway-like design into a multimodal urban boulevard. The Rutherford Avenue corridor in the Charlestown neighborhood of Boston extends about 1.5 miles from the North Washington Street Bridge to the Sullivan Square MBTA Orange Line station. The existing corridor consists of 8 to 10 lanes that facilitate high-speed automobile travel. Although this roadway layout served high volumes of traffic during construction of the Central Artery/ Tunnel project, it now acts as a barrier to the neighborhood. The existing roadway creates significant challenges and safety issues for pedestrians and bicyclists seeking to reach various destinations, including Bunker Hill Community College, Paul Revere Park, the Hood Business Park employment area, and MBTA rapid transit stations.

## *Project Context and Possible Impacts by MPO Goal*

### CAPACITY MANAGEMENT/MOBILITY

#### *Roadways:*

The proposed roadway design includes mobility improvements for all modes through widened sidewalks, shortened crossings, on-street parking lanes, bicycle lanes, and exclusive bus lanes to improve bus operations at the Sullivan Square Station. The project provides improvements around Sullivan Square by reconfiguring the roadways into an urban grid system of streets to regularize traffic movements. The at-grade urban boulevard will eliminate the underpasses at Sullivan Square and Austin Street, add a 12 to 16-foot-wide landscaped median, and reduce the roadway to two lanes in each direction, with turn lanes at intersections.

#### *Transit:*

The designation of exclusive bus lanes at Sullivan Square Station also will improve operations for 12 MBTA bus routes served by almost 900 trips each day. The safety and convenience of street crossings for pedestrians accessing MBTA services will be improved.

#### *Pedestrians/bicycles:*

By transforming the highway-like roadway into a multimodal urban boulevard, the project will improve pedestrian and bicycle safety, and access to the Community College and Sullivan Square MBTA stations on the Orange Line. The livability elements consist of adding 10-foot sidewalks, creating a 20 to 40-foot linear park or buffer, installing ten traffic signals and crosswalks, shortening crossings, planting 900 trees, and possibly adding a 5-foot wide bike lane in the southbound direction.

### SAFETY

There is one Highway Safety Improvement Program crash cluster in the project area. The project area is also identified as a high-crash location for trucks.




## SYSTEM PRESERVATION

Nine lane-miles of substandard pavement will be replaced and three substandard bridges eliminated as part of this project.

## ECONOMIC VITALITY

The plans for reconfiguring the Sullivan Square roadway network also provide an opportunity to create land parcels for transit-oriented-development that will be well suited and well located for commercial and residential redevelopment by the private sector. Many of the parcels in the Sullivan Square area are publicly owned, by either the MBTA or the City of Boston, which creates the potential for public-private partnerships.

## TRANSPORTATION EQUITY

This project is not in an EJ area, but it is within a half-mile of an EJ area in the neighboring city of Somerville.

# FRAMINGHAM: ROUTE 126/ROUTE 135 GRADE SEPARATION ($115,000,000)

## *Project Description*

This alternative would provide a grade separated crossing at the intersection of Route 135 and Route 126. Route 135 would be depressed under Route 126, with Route 126 approximately maintaining its existing alignment. The depressed section of Route 135 would extend from approximately 500 feet west of Route 126 to approximately 480 feet east of Route 126. The westerly limit of the depressed section would begin immediately east of a potential Hollis Court Extension. The easterly limit of the depressed section would be approximately 125 feet west of the existing at-grade crossing of the Framingham secondary track.

Within the proposed Route 135 cross-section would be an underpass that would include two 11-foot travel lanes with 4-foot shoulders. Retaining walls would be constructed on both sides of the underpass. The remaining space within the project cross-section would be used for at-grade features including ramps connecting Route 135 with Route 126, and sidewalks.

The available cross-section would be constrained by existing buildings on both sides of the road west of the Route 126 intersection, including two buildings on the south side and the historic train station on the north side. The proposed cross-section, west of the intersection, would include a 30-foot pavement section with two three-foot thick retaining walls and two 10-foot wide at-grade sidewalks on Route 135.

East of the intersection, three buildings on the south side of Route 135 directly abut the sidewalk. On the north side, two small buildings sit between Route 135 and the Boston mainline tracks. The existing distance between the buildings is approximately 66 feet. In order to make a partial connection between Route 135 and Route 126, ramps will be provided on Route 135 east of the intersection. These would consist of a one-way, one-lane ramp eastbound from Route 126 to Route 135 and a one-way one-lane ramp westbound from Route 135 to Route 126.

Side streets beyond the immediate vicinity of the intersection would be used to provide connections from eastbound Route 135 to Route 126 and from Route 126 to westbound Route 135. This would include the extension of Hollis Court, probably requiring new signals at the Route 126/Hollis Court and Route 135/Hollis Court Extension intersections.

## *Project Context and Possible Impacts by MPO Goal*

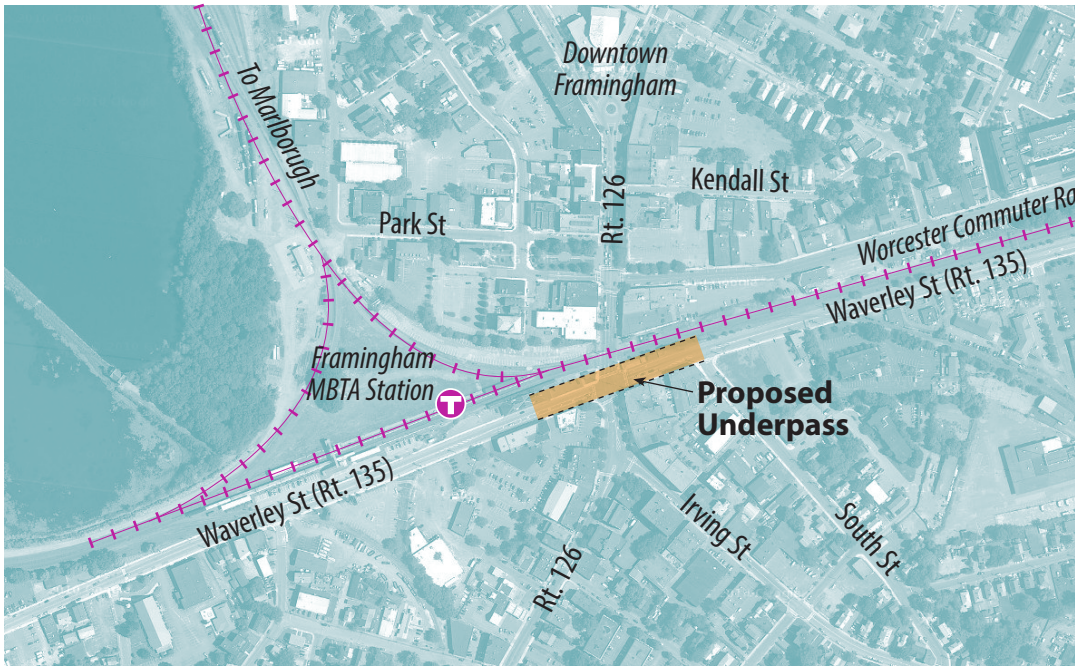
### CAPACITY MANAGEMENT/MOBILITY

#### *Roadways:*

This project will allow traffic on Route 135 to bypass the intersection with Route 126. According to MassDOT 2005 traffic volume data, average daily traffic (ADT) at this location is 19,700 vehicles on Route 126 and 15,700 vehicles on Route 135. The Route 126/Route 135 intersection functions at LOS F in the AM and PM peak periods.

*Transit:*

The Framingham commuter rail station is located near the project site; and key Metrowest bus Routes 2, 3, and 7 now terminate at the station. Pedestrian and bicycle access to the station via Route 126 from the south will be improved since most of Route 135 traffic would now be below-grade.




*Pedestrians/bicycles:*

Project area sidewalks will be reconstructed and north-south travel by non-motorized modes will be facilitated.

## SAFETY

This project area includes one of the top-200 Massachusetts crash locations, a situation that has existed for a number of years.

## SYSTEM PRESERVATION

This project will rebuild one-half mile of roadway in its existing configuration.

## ECONOMIC VITALITY

This project is entirely within an MPO-designated priority development area and is expected to be a catalyst for redevelopment of the downtown Framingham central business district.

This project is located in Framingham's central business district, which, according to the Executive Office of Environmental Affairs and the Metropolitan Area Planning Council's build-out analysis, is subject to absolute development constraints, but also is a designated redevelopment district. According to the *Route 126 Corridor Study*, the construction of this project would help facilitate redevelopment by making the downtown area more attractive and providing redevelopment sites through the partial taking of business sites as necessary for the roadway work.

As currently envisioned, the project includes many streetscape amenities and will facilitate downtown redevelopment, including possible facade improvements near the town common. The project also eliminates a significant congestion point in downtown Framingham.

## TRANSPORTATION EQUITY

This project is entirely within an EJ area.

# LEXINGTON: ROUTE 4/225 (BEDFORD STREET) AND HARTWELL AVENUE ($23,221,000)

## *Project Description*

The proposed project would greatly enhance mobility and safety for vehicular, bicycle, and pedestrian traffic in the project area. The preferred alternative includes reconstruction of Hartwell Avenue and Bedford Street to provide:

- Four through-travel lanes throughout most of the project area
- Three travel lanes at the southern end of Hartwell Avenue
- A sidewalk or multi-use path on both sides of the roadway
- A paved shoulder with bike lane on both sides of the roadway
- A raised center median to restrict mid-block left-turn movements
- Reconstruction of major intersections as multi-lane roundabouts

## *Project Context and Possible Impacts by MPO Goal*

### CAPACITY MANAGEMENT/MOBILITY

#### *Roadways:*

MassDOT traffic counts in 2005 found average weekday traffic of:

- 38,800 vehicles on Route 4/225 south of Hartwell Avenue
- 25,600 vehicles on Route 4/225 north of Hartwell Avenue
- 18,000 vehicles on Hartwell Avenue

The CMP has found that the average travel speed is less than 70 percent of the posted speed during the AM peak period and less than 60 percent in the PM peak. The section of Route 4/225 south of Hartwell Avenue already has four lanes. One or two additional lanes will be added to the other roadway sections.

#### *Transit:*

The MBTA provides bus service in this corridor connecting with the Red Line at Alewife station.

#### *Pedestrians/bicycles:*

This project will add four miles of new bicycle lanes and sidewalks.

### SAFETY

There are two Highway Safety Improvement Program crash clusters in the project area.




## SYSTEM PRESERVATION

Five lane-miles of substandard pavement will be replaced as part of this project.

## ECONOMIC VITALITY

This project serves an existing area of concentrated development. There is potential for further development in this area, which would be facilitated by this project.

## TRANSPORTATION EQUITY

This project is not within an EJ area.

# NATICK: ROUTE 27 OVER ROUTE 9, BRIDGE AND INTERCHANGE REPLACEMENT ($25,793,000)

## *Project Description*

This project will reconstruct the Route 27 overpass that spans Route 9 and the associated cloverleaf-style ramps. While the basic configuration of the interchange will not change, reconstruction of all elements to current roadway design standards will address serious safety deficiencies and reduce traffic delay by providing new turning lanes.

## *Project Context and Possible Impacts by MPO Goal*

### CAPACITY MANAGEMENT/MOBILITY

#### *Roadways:*

MassDOT traffic counts in 2008 found average weekday traffic on Route 27 to be about 27,000 vehicles near the Route 9 overpass. Historic traffic growth at this location has been about 0.3 percent per year. Congestion is apparent in the existing conditions because of lengthy peak-period queues; one PM queue in a turning lane exceeds 1000 feet.

#### *Transit:*

Four bus routes of Metrowest Regional Transit Authority (MWRTA) operate in the study area.

#### *Pedestrians/bicycles:*

This project will add one mile of new bicycle lanes and one mile of new or rebuilt sidewalks.

### SAFETY

This project is located at one of the top-200 Massachusetts crash locations between 2010 and 2012.

### SYSTEM PRESERVATION

One lane-mile of substandard pavement and one substandard bridge will be replaced as part of this project.

### ECONOMIC VITALITY

The project serves an existing area of concentrated development. Few land-use-related benefits are projected.

### TRANSPORTATION EQUITY

This project is not within an EJ area.


Route 27
Proposed
Improvements
Route 9
Route 9
Route 27

# NEEDHAM AND NEWTON: NEEDHAM STREET/HIGHLAND AVENUE ($14,298,000)

## *Project Description*

This project will maintain Needham Street with a three-lane cross-section from the Needham Street/Winchester Street/Dedham Street intersection in Newton to the bridge over the Charles River at the Needham town line. The roadway will be rehabilitated and widened to include bicycle lanes, new sidewalks, reconfigured intersections, and updated traffic signals. The Highland Avenue portion of the project will improve the roadway's geometry from the Highland Avenue/Webster Street intersection in Needham to the Newton town line. Work will include upgrades and installation of traffic signals at five intersections. The project also will include reconstructing and widening the bridge over the Charles River to accommodate four travel lanes.

## *Project Context and Possible Impacts by MPO Goal*

### CAPACITY MANAGEMENT/MOBILITY

#### *Roadways:*

CMP monitoring in 2001–02 indicated that the average travel speed on both Needham Street and Highland Avenue was 15 miles per hour (mph) or less (LOS E/F) along multiple segments of this corridor northbound and southbound during the AM and PM peak periods. Counts performed as part of MassDOT's Highland Avenue Corridor Improvements Functional Design Report (FDR) in 2002, showed that average daily traffic (ADT) on Highland Avenue east of First Street (just east of I-95 and between the two other count locations) was 36,700 vehicles; counts as recent as 2008 have found similar traffic volumes.

#### *Transit:*

Two MBTA bus routes with 86 weekday trips travel through the project area.

#### *Pedestrians/bicycles:*

Roadway rehabilitation will include bicycle accommodation, six miles of new sidewalks, reconfigured intersections, and updated traffic signals to facilitate non-motorized travel options.

### SAFETY

There are three Highway Safety Improvement Program crash clusters in the project area, which also is identified as a high crash location for trucks.

### SYSTEM PRESERVATION

Nine lane-miles of substandard pavement will be replaced and one substandard bridge rehabilitated as part of this project.




## ECONOMIC VITALITY

The project area in Newton along Needham Street is zoned as residential from Route 9 north, and as mixed-use and multi-unit residential from Route 9 south to the Needham town line. The project area in Needham is zoned as industrial from east of I-95 to the Newton town line and as residential west of I-95.

According to both the Highland Avenue Corridor Improvements FDR and the proposed Stop & Shop supermarket draft environmental impact report, this project would help facilitate redevelopment along this corridor.

## TRANSPORTATION EQUITY

This project is not within an EJ area.

# SOMERVILLE: MCGRATH BOULEVARD ($56,600,000)

## *Project Description*

The proposed improvements will remove the existing McCarthy Viaduct and replace it with an at-grade boulevard approximately 0.7 miles long, from the Gilman Street Bridge in the north to Squires Bridge in the south. The project will provide pedestrian and bicycle accommodation along the length of the reconstructed corridor, and result in more conventional intersection configurations at Washington Street and Somerville Avenue, which currently travel under or next to the viaduct. Removing the viaduct will physically reconnect the neighborhoods of Somerville with more direct vehicle, pedestrian, bicycle, and transit networks.

## *Project Context and Possible Impacts by MPO Goal*

### CAPACITY MANAGEMENT/MOBILITY

#### *Roadways:*

The elevated viaduct currently serves vehicles driving through Somerville to points north and south, but physically divides the Somerville neighborhoods directly to the east and west. The existing surface roadway network below the viaduct includes a series of unconventional intersections that cause confusion and present some safety concerns. The proposed McGrath Boulevard will create conventional intersections that provide clear direction and safer operation for all modes of transportation along the corridor.

#### *Transit:*

MBTA Routes 80 (Arlington Center to Lechmere) and 88 (Clarendon Hill to Lechmere) provide bus service in this corridor, with connections to the MBTA Green Line at Lechmere Station, and will have direct access to the Green Line Extension in the future, connecting the corridor to Boston, Cambridge, and Medford. Removing the viaduct will provide additional connectivity for existing bus routes along and across the proposed McGrath Boulevard.

#### *Pedestrians/Bicycles:*

New sidewalks and bicycle facilities will be provided for the length of the proposed McGrath Boulevard, creating safe and comfortable accommodation for users. Removing the viaduct will dramatically improve connections across McGrath Boulevard in the east/west direction, encouraging travel at a neighborhood scale. Mobility between communities on either side of the existing viaduct—including Union Square, Inner Belt, Gilman Square, and East Somerville—will improve vastly. The proposed bicycle and pedestrian facilities along McGrath Boulevard will connect with the extended Community Path, creating access to a more regional bicycle transportation network. The proposed facilities also will provide direct intermodal connections to existing bus routes and the new Green Line Station.

### SAFETY

There are two Highway Safety Improvement Program crash clusters in the project area, as well as a bicycle and a pedestrian crash cluster.




## SYSTEM PRESERVATION

Three lane-miles of substandard pavement, 1.5 miles of substandard sidewalk, and a substandard bridge will be improved as part of this project. Eliminating the McCarthy viaduct also will serve to reduce long-term maintenance costs.

## ECONOMIC VITALITY

The project provides access to the Inner Belt/Brickbottom, Union Square, and Boynton Yards Priority Development Areas in Somerville, which are designated for mixed-use commercial and residential development. Redeveloping these three areas in Somerville should add 3,000 new housing units and an additional 6.5-million square feet of commercial development.

## TRANSPORTATION EQUITY

This project is in an EJ area; and will improve transit, pedestrian, and bicycle access within the project corridor.

# WEYMOUTH: ROUTE 18 CAPACITY IMPROVEMENTS PROJECT ($58,822,000)

## *Project Description*

This project will widen Route 18 to two continuous lanes in each direction (with four-foot shoulders) between Highland Place/Charmada Road (south of Middle/West Street) in Weymouth and Route 139 in Abington. Sidewalks will be constructed and the Route 18 bridge over the MBTA Plymouth commuter rail line will be reconstructed and widened.

Intersection improvements—including additional left- and right-turn lanes and some roadway widening between intersections on Route 18 from Route 3 to Route 139, and the Middle/West Street intersection. Park Avenue, Columbian Road, and Pond and Pleasant Streets—will be constructed as separate projects.

## *Project Context and Possible Impacts by MPO Goal*

### CAPACITY MANAGEMENT/MOBILITY

#### *Roadways:*

According to Highway Division traffic counts, the average daily traffic volumes on Route 18 along this stretch of roadway are as follows:

Weymouth:

- North of West Street (2009 counts) – 33,900 vehicles
- North of Park Avenue (2000 counts) – 31,200 vehicles
- North of Pond Street (2009 counts) – 25,900 vehicles

Abington:

- North of Route 139 (2000 counts) – 19,500 vehicles

Intersection analyses were performed as part of the South Weymouth Access Study in August 2000. Existing LOS during the PM peak period were as follows:

Weymouth:

- Route 18/West Street – LOS E
- Route 18/Park Avenue – LOS C
- Route 18/Columbian Street – LOS E
- Route 18/Pleasant Street – LOS D
- Route 18/Trotter Road – LOS D

Abington:

- Route 18/Route 139 – LOS D

According to 2002 CMP monitoring performed by CTPS, the average AM and PM speed on Route 18 northbound and southbound is less than 15 mph for three segments of the roadway in the project area. The average travel speed on Route 18 is less than 70 percent of posted speed along 25 segments northbound and southbound in the AM and PM peak periods.

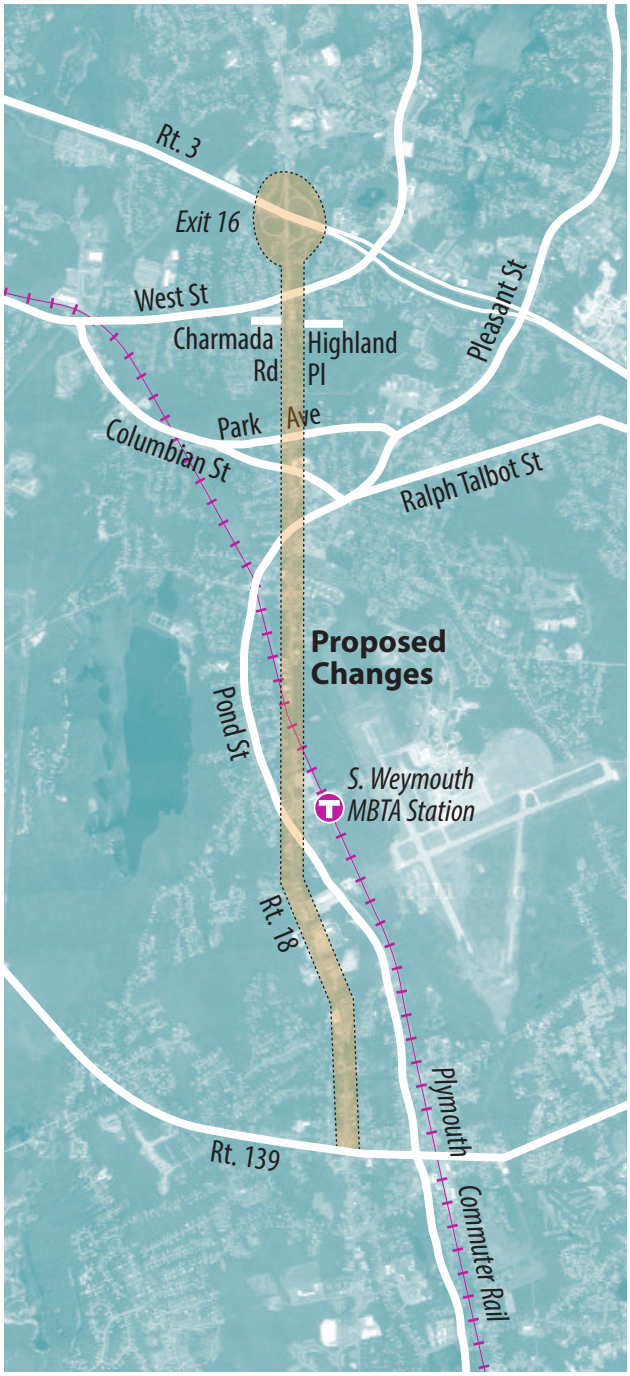
Six signalized intersections in the project area are among the top-25 most delayed intersections (monitored as part of the CMP roadway network) for the South Shore Coalition MAPC subregion in the PM peak period.

### *Transit:*

Route 18 provides access to the South Weymouth commuter rail station on the Plymouth Line. The South Shore Tri-Town Development Corporation, responsible for redeveloping the South Weymouth Naval Air Station, is proposing an expanded, multimodal station in conjunction with the existing South Weymouth commuter rail station. Route 18 is currently served by one MBTA bus route.

### *Pedestrians/bicycles:*

The project will provide eight miles of new sidewalks and on-road bicycle accommodation to enhance pedestrian and bicyclist access along the corridor.




## SAFETY

This project area includes six of the top-200 Massachusetts crash locations between 2010 and 2012. Four high-crash locations for trucks also are located in the project area.

## SYSTEM PRESERVATION

Eight lane-miles of substandard pavement and one substandard bridge will be replaced as part of this project.

## ECONOMIC VITALITY

Zoning along the Route 18 corridor in Weymouth includes residential, highway transition, medical services (South Shore Hospital and other related medical facilities), limited business, and general business. Zoning along Route 18 in Abington is industrial or highway commercial.

This project is a component of the development plan for the former South Weymouth Naval Air Station, which involves redeveloping the 1,450-acre site, consistent with the re-use plan formula. The South Shore Tri-Town Development Corporation foresees corporate office park, entertainment, and recreation use for the site, with more than 60 percent open space (recreational and conservation).

## TRANSPORTATION EQUITY

This project is not within an EJ area.

# WOBURN: MONTVALE AVENUE ($4,225,000)

## *Project Description*

This is an arterial and intersection improvement project along Montvale Avenue from Central Street to east of Washington Street in the City of Woburn. It includes the following improvements:

- Widening Montvale Avenue to four lanes and providing turning lanes at Washington Street
- Reconstructing roadways and sidewalks
- Installing a new traffic signal system at Central Street and modifying phasing and timing at Washington Street

## *Project Context and Possible Impacts by MPO Goal*

### CAPACITY MANAGEMENT/MOBILITY

#### *Roadways:*

The proposed project area serves as a critical connection between I-93, I-95, and the surrounding Woburn area. According to counts collected by MassDOT in 2008, ADT along Montvale Avenue east of Washington Street was 29,100 vehicles. Under 2007 traffic conditions, the intersection at Montvale Avenue and Washington Street operated at LOS C in the AM and PM peak periods, while the Montvale Avenue and Central Street intersection operated at LOS A in the AM and LOS B in the PM peak period. Although the LOS is acceptable, the proposed improvements will better utilize lanes and increase coordination between intersections to accommodate increasing traffic volumes.

#### *Transit:*

The project will enhance the operations of MBTA bus Routes 354 and 355 served by 38 weekday trips.

#### *Pedestrians/bicycles:*

The project will reconstruct one-half mile of sidewalk, which will improve pedestrian and bicycle access to nearby schools and activities.

### SAFETY

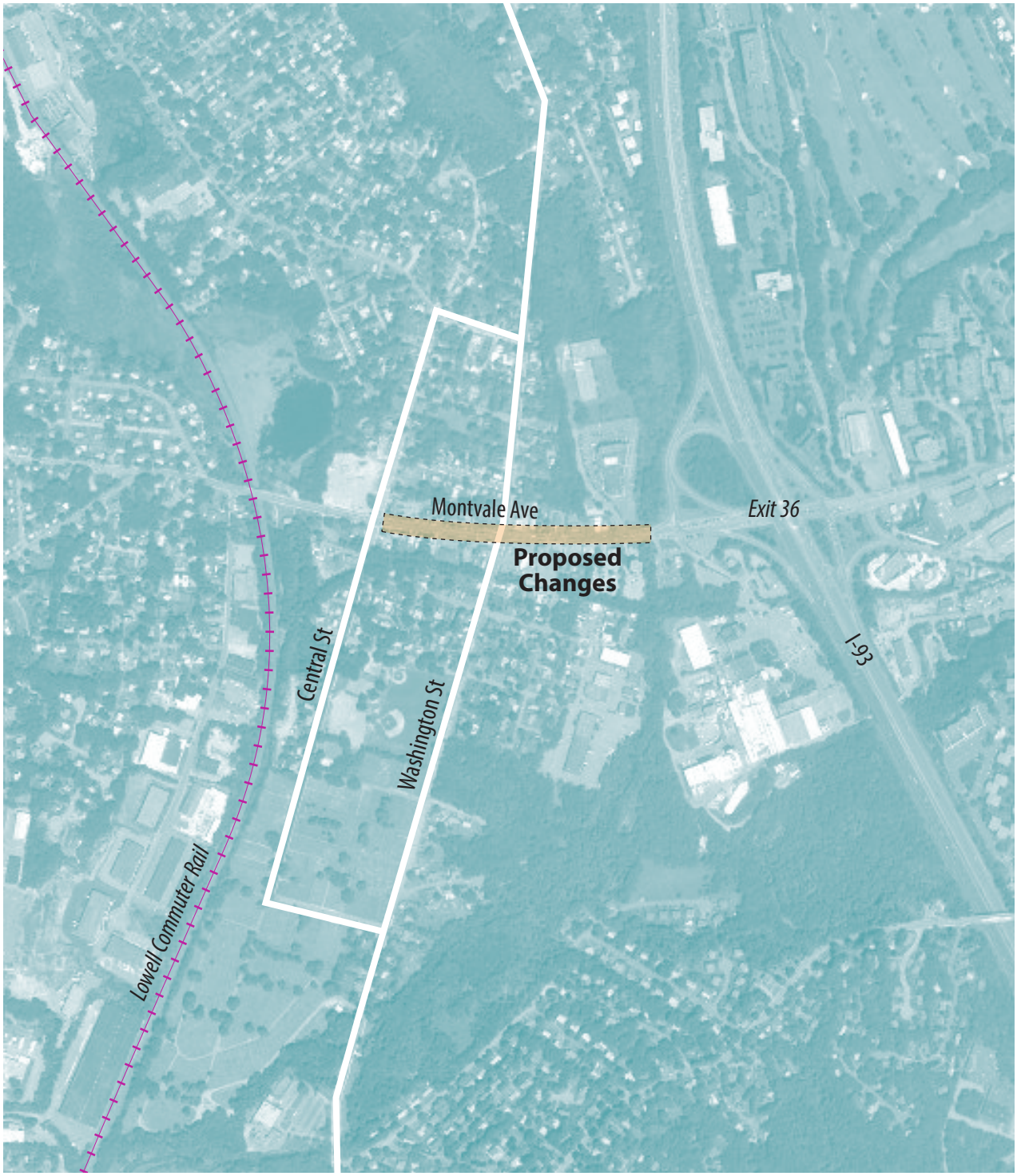
This project is located at one of the top-200 Massachusetts crash locations between 2010 and 2012.

### SYSTEM PRESERVATION

One lane-mile of substandard pavement will be replaced as part of this project.

### ECONOMIC VITALITY

The proposed widening of Montvale Avenue will have minor impacts on adjacent land use. The project area contains a mix of land use, but primarily is zoned for commercial and some residential.




Maximum parking requirements and transportation demand management (TDM) requirements for all new developments are imposed. The project will improve pedestrian and disability access by widening the existing four-foot-wide sidewalks to five or six feet, and adding wheelchair ramps.

## TRANSPORTATION EQUITY

This project is not in an EJ area.

# WOBURN: NEW BOSTON STREET BRIDGE ($9,707,000)

## *Project Description*

A bridge on New Boston Street at the northern end of Woburn Industrial Park will be constructed. New Boston Street then will cross the MBTA's Lowell Line and connect with Woburn Street in Wilmington. This connection existed until approximately 30 years ago when the bridge was destroyed by fire and not reconstructed. Also included is the reconstruction of approximately 1,850 feet of New Boston Street.

## *Project Context and Possible Impacts by MPO Goal*

### CAPACITY MANAGEMENT/MOBILITY

#### *Roadways:*

No traffic studies have been performed to date; however, re-opening this bridge would provide a second means of access to the growing Industri-Plex area for residents of Wilmington and communities to the north, as well as for emergency vehicles from the North Woburn fire station.

#### *Transit:*

The Anderson Regional Transportation Center (RTC) is located just south of the proposed New Boston Street Bridge. The new bridge would provide an additional automobile access point for park-and-ride and transit services offered at the RTC.

#### *Pedestrians/bicycles:*

Non-motorized modes will be major beneficiaries of this project. The new network link will eliminate the need to use very circuitous alternate routes for many local and regional trips.

### SAFETY

There is no recent crash history at the project location. Safety benefits may be realized at other locations that will have less traffic.

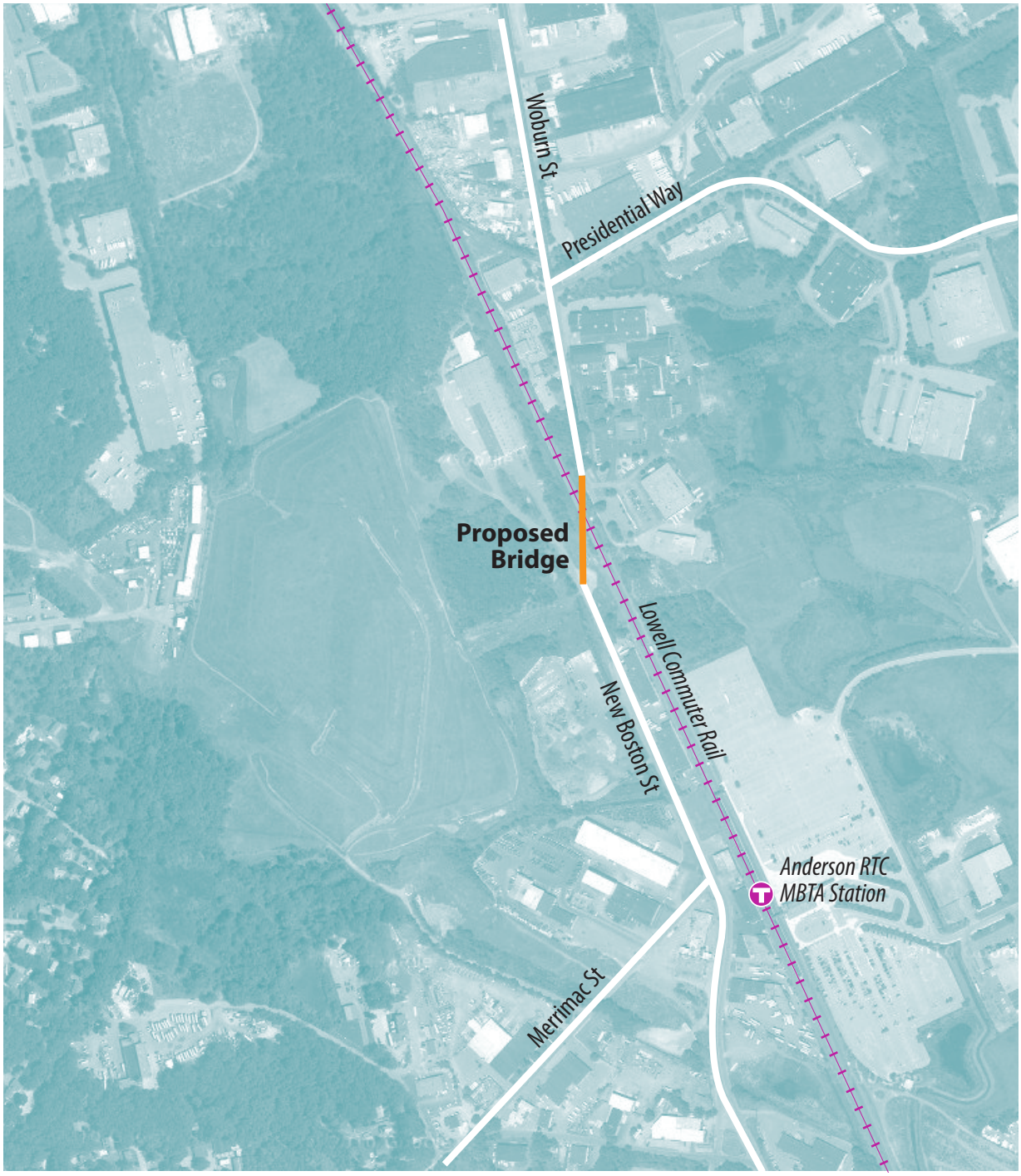
### SYSTEM PRESERVATION

An existing stretch of New Boston Street will be rebuilt as part of this project.

### ECONOMIC VITALITY

This project is entirely within an MPO-designated priority development area.

The majority of the land in the New Boston Street area in Woburn is zoned for industrial use; existing development in the area is primarily commercial/industrial. With the opening of the Anderson RTC and I-93 Interchange 37C serving the Industri-Plex developments, the city of Woburn anticipates more office and retail development in the project area over the next few years. Just north of the




proposed project in Wilmington, the land is zoned industrial and includes Southeast Wilmington Industrial Park. Further north on Woburn Street in Wilmington, the land is zoned residential up to Route 129.

## TRANSPORTATION EQUITY

This project is not within an EJ area.

# SOMERVILLE AND MEDFORD: GREEN LINE EXTENSION PROJECT (PHASE I: LECHMERE STATION TO COLLEGE AVENUE/UNION SQUARE AND PHASE II: COLLEGE AVENUE TO MYSTIC VALLEY PARKWAY/ROUTE 16 – $190,000,000)

## *Project Description*

This project—whose purpose is to improve corridor mobility, boost transit ridership, improve regional air quality, ensure equitable distribution of transit services, and support opportunities for sustainable development—will extend the MBTA Green Line in two separate phases. Phase I will extend the Green Line from a relocated Lechmere Station in East Cambridge to College Avenue in Medford, with a branch to Union Square in Somerville. Phase II will further extend the Green Line from College Avenue to Mystic Valley Parkway (Route 16) at the Somerville/Medford municipal boundary.

### PHASE I

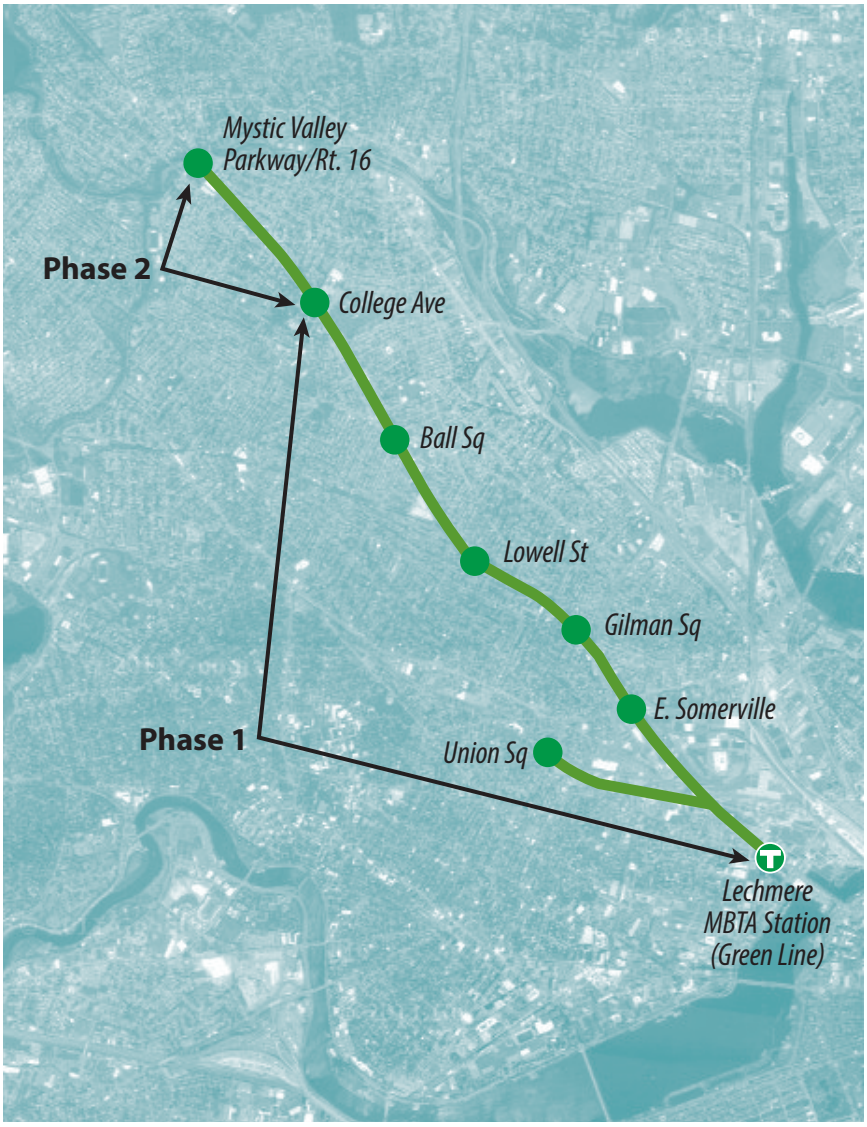
Lechmere Station to College Avenue with a branch to Union Square (State Implementation Plan commitment). This phase of the project is part of the no-build network but is included here to provide a full description of the project. It is funded with a combination of Commonwealth funds and federal transit funds.

#### *Proposed Stations*

New Green Line stations are currently proposed for:

- College Avenue, Medford – Located at the intersection of College Avenue and Boston Avenue in Medford, adjacent to Tufts University. The station platform will be located on the north side of the College Avenue Bridge, which spans the MBTA Lowell Line. Access to the station will be provided from both Boston Avenue and College Avenue, as well as from the Burget Avenue neighborhood, which lies northeast of the station site.
- Broadway/Ball Square, Medford/Somerville – Located at the intersection of Broadway and Boston Avenue on the north side of Ball Square. The station platform will be located on the north side of the Broadway Bridge, which spans the MBTA Lowell Line. Access to the station will be provided from both Boston Avenue and Broadway. An electrical substation, needed to support the Green Line Extension, likely would be installed at this location.
- Lowell Street, Somerville – Located at the Lowell Street Bridge, which spans the MBTA Lowell Line adjacent to the proposed extension of the Somerville Community Path. The station platform will be located on the north side of the Lowell Street Bridge. Access to the station will be provided from Lowell Street.
- Gilman Square, Somerville – Located near the Medford Street crossing of the MBTA Lowell Line, behind Somerville's city hall, public library, and high school. The station platform will be located on the north side of the Medford Street Bridge, which spans the MBTA Lowell Line. Access to the station will be provided from Medford Street. The proposed extension of the Somerville Community Path will be located close to the station.

- Washington Street, Somerville – Located within the footprint of the Washington Street Bridge, proximate to Somerville's Brickbottom, Inner Belt, and Cobble Hill areas. The station platform will be located south of the Washington Street under-grade crossing of the MBTA Lowell Line. Access to the station will be provided via entrances under or adjacent to the south abutment of the bridge, in conjunction with improved sidewalk and street crossings. The proposed extension of the Somerville Community Path will be located near the station.
- Union Square, Somerville – Located east of Prospect Street near Union Square in Somerville. The station platform will be located within the MBTA Fitchburg Line right-of-way east of Prospect Street. Access to this station will be provided from both the street and bridge levels of Prospect Street.




Details of the station designs—including the relationship of stations to pedestrian, bicycle, and bus networks around them—are being developed more fully. The MBTA is engaging the public in creating the look and feel of the stations and their surroundings.

### *Vehicle Storage and Maintenance Facilities*

The Green Line Extension will also require construction of a new light rail vehicle storage and maintenance facility. MassDOT has identified a location known as "Option L" in the Inner Belt area of Somerville as its preferred location for the vehicle support facility. The MBTA is currently working on the program and design of the maintenance facility and its associated vehicle storage areas. The MBTA must acquire certain parcels of private property in order to construct the vehicle facility at the Option L location.

## PHASE II

College Avenue to Mystic Valley Parkway (Route 16)

This project is not part of the State Implementation Plan commitment. Boston Region MPO members think that this is an important project and voted to include this phase in the recommended LRTP by flexing highway funding to this transit project. Design has not yet begun for this project. The terminus would be a station at Mystic Valley Parkway (Route 16).

## OTHER INVESTMENT PROGRAMS

In addition to the major investment program discussed in the previous section, the MPO programmed four other types of investment programs in the recommended LRTP:

1. Intersection Improvement
2. Complete Streets
3. Bicycle Network and Pedestrian Connection
4. Community Transportation/Parking/Clean Air and Mobility

Projects included as part of these programs can be programmed in the TIP directly without first being listed in the LRTP because they do not add capacity to the transportation network. They would need to be listed in the LRTP only if they cost more than $20 million.

The first three programs include types of projects that are regularly programmed in the TIP. The fourth program—Community Transportation/Parking/Clean Air and Mobility—is a revival and expansion of the MPO's Clean Air and Mobility program (which had been in hiatus for several years because of lack of funding). This new iteration of the program is part of this LRTP in response to public input received during the LRTP development stage.

Each of these programs is discussed below, along with how they will address the MPO's goals and objectives.

# INTERSECTION IMPROVEMENT PROGRAM

## *Program Description*

This program will fund intersection projects that modernize existing signals or add signals to improve safety and mobility. Improvements also could consist of the addition of turning lanes, shortened crossing distances for pedestrians, and striping and lighting for bicyclists. Improvements to sidewalks and curb cuts also will enhance accessibility for pedestrians. Updated signal operations will reduce delay and improve bus transit reliability.

Examples of intersection projects that are programmed in the MPO's 2016–20 TIP include:

- Improvements at Derby Street, Whiting Street, and Gardner Street in Hingham
- Traffic signal improvements at ten locations in Boston

## *Average Cost per Project*

An average cost of $2.8 million per intersection project was established based on similar projects the MPO has funded in the past, as well as those that are included in the Universe of Projects developed for this LRTP (see Appendix B) and awaiting potential funding in future TIPs.

## *Project Context and Possible Impacts by MPO Goal*

### CAPACITY MANAGEMENT/MOBILITY

Intersection projects can reduce congestion, which would improve mobility and reduce emissions. Improvements can include bicycle and pedestrian elements to improve mobility for bicyclists, and mobility and accessibility for pedestrians.

### SAFETY

Intersection projects can improve safety at high crash locations for motorists, trucks, pedestrian, and bicyclists. Improvements can consist of upgraded geometry, shortened crossing distances, and enhanced signage and lighting.

### SYSTEM PRESERVATION

Intersection projects can improve pavement condition and modernize signal equipment.

## ECONOMIC VITALITY

Intersection projects can reduce congestion by improving signal timings, which will improve mobility and access to centers of economic activity. Improvements can include pedestrian and bicycle elements that will improve mobility for bicyclists, and mobility and accessibility for pedestrians in centers of economic activity.

## TRANSPORTATION EQUITY



Improvements to intersections can enhance transit services and provide better and more bicycle and pedestrian connections.

## CLEAN AIR/CLEAN COMMUNITIES

Intersection projects can reduce emissions because of enhanced operations for all vehicles, and through mode shift, accompanied by improvements in transit reliability, and bicycle and pedestrian infrastructure.

# COMPLETE STREETS PROGRAM

## *Program Description*

The Complete Streets program modernizes roadways to improve safety and mobility for all users. Improvements can consist of continuous sidewalks and bicycle lanes, cycle tracks, and other bicycle facilities, as well as updated signals at intersections along a corridor. Improvements could also address other roadway infrastructure in the corridor, such as bridges, drainage, pavement, and roadway geometry. They will reduce delay and improve bus transit reliability. Expanded transportation options and better access to transit will improve mobility for all and encourage mode shift.

Examples of Complete Streets projects that are programmed in the MPO's 2016–20 TIP include:

- Intersection and Signal Improvements at Route 9 and Village Square (Gateway East) in Brookline
- Reconstruction of Route 85 (Maple Street) in Marlborough
- Reconstruction and related work on Derby Street from Pond Park Road to Cushing Street in Hingham
- Reconstruction on Route 129 (Lynnfield Street), from Great Woods Road to Wyoma Square in Lynn

## *Average Cost per Project*

An average cost of six million dollars per mile of Complete Streets improvements was established based on similar projects that the MPO has funded in the past as well as projects that are included in the Universe of Projects in this LRTP (see Appendix B) and awaiting potential funding in future TIPs.

## *Project Context and Possible Impacts by MPO Goal*

### CAPACITY MANAGEMENT/MOBILITY

Complete Streets projects can increase transportation options by adding new sidewalks and bicycle facilities. They also can improve mobility for transit services.

### SAFETY

Complete Streets projects can modernize the roadway network to provide safe conditions for all modes of travel along the corridor. Improvements could consist of lane reconfiguration, traffic signal and access improvements for motorists, new sidewalks, curb ramps, improved roadway crossings for pedestrians, and continuous bicycle facilities to reduce conflicts between bicyclists and motor vehicles.

## SYSTEM PRESERVATION

Complete Streets projects can address pavement condition, upgrade sidewalk and bicycle accommodations, and improve bridges and culverts (including adaptations to transportation infrastructure that is vulnerable to climate change and other hazards).

## ECONOMIC VITALITY




Complete Streets projects can increase transportation options and access to places of employment and centers of economic activity by adding new sidewalks and bicycle facilities and generally improving operations.

## TRANSPORTATION EQUITY

Complete Streets projects in EJ areas can provide better access to transit, generally improved operations, and improved pedestrian and bicycle infrastructure.

## CLEAN AIR/CLEAN COMMUNITIES

Complete Streets projects with bicycle and pedestrian infrastructure improvements can help to reduce VMT through improved operations and mode shift.

# BICYCLE NETWORK AND PEDESTRIAN CONNECTION PROGRAM

## *Program Description*

This program will expand bicycle and pedestrian networks to improve safe access to transit, school, employment centers, and shopping destinations. Bicycle and pedestrian connection projects could include constructing new, off-road bicycle or multi-use paths, improving bicycle and pedestrian crossings, or building new sidewalks. Improvements can also consist of traffic calming, sidewalk network expansion, and upgrades similar to those in a Complete Streets Program, or enhanced signage and lighting.

An example of a bicycle project that is programmed in the MPO's LRTP is the Assabet River Rail Trail in Stow and Hudson to be funded through this program.

## *Average Cost per Project*

Project costs for sample bicycle and pedestrian projects were examined using evaluated TIP projects, the MPO's Bicycle Network Evaluation, and bicycle travel information from the 2011 Massachusetts Household Survey to develop an average cost of $2 million per mile.

## *Project Context and Possible Impacts by MPO Goal*

### CAPACITY MANAGEMENT/MOBILITY

Projects in the Bicycle Network and Pedestrian Connection Program can increase transportation options, provide access to transit or other activity centers, and support last-mile connections.

### SAFETY

Projects in this program can create a safe pedestrian and bicycle corridor that connects activity centers while avoiding high crash locations on the roadway system. They can include safety improvements to facilitate pedestrian access to transit or other activity centers.



## TRANSPORTATION EQUITY

Projects in EJ areas in this program can provide better access to transit and improved pedestrian and bicycle infrastructure.

## CLEAN AIR/CLEAN COMMUNITIES

Bicycle and pedestrian infrastructure improvements can help to reduce VMT through mode shift.

# COMMUNITY TRANSPORTATION/PARKING/CLEAN AIR AND MOBILITY PROGRAM

## *Program Description*

This program includes a combination of the following types of projects:

- Community Transportation: Provides funding to launch locally developed transit services that support first-mile/last-mile connections to existing transit services and other destinations by purchasing shuttle buses and/or funding operating costs.
- Park-and-Ride: Targets funding to construct additional parking at transit stations that are at capacity, or at other viable locations.
- Clean Air and Mobility Program: Funds projects that improve mobility and air quality and promote mode shift. Examples include bike-share projects or shuttle-bus services.

## *Average Cost per Project*

- Community Transportation: Staff estimates that an average cost for this type of service would be approximately $1.5 million per year.
- Park-and-Ride: Average cost per parking space is $35,000.
- Clean Air and Mobility Program: Based on review of projects funded through this program in the past, the costs vary widely depending on the project. Examples include:
    - Bike share projects – an average cost of $200,000 per project
    - Transportation Demand Management projects – an average cost of $140,000 per project
    - Shuttle Bus Services – an average cost of $100,000 per project

## *Project Context and Possible Impacts by MPO Goal*

### CAPACITY MANAGEMENT/MOBILITY

Projects in this program can increase transit ridership by expanding automobile and bicycle parking at commuter rail and rapid transit stations. The program will also provide

funding for starting up new, locally developed transit services and supporting last-mile connections.




## ECONOMIC VITALITY

The program can provide funding for starting up new, locally developed transit services and support last-mile connections to places of employment and areas of economic activity.

## TRANSPORTATION EQUITY

The program can provide funding for starting up new, locally developed transit services that include transit vehicles and coordination of service to transportation equity populations in suburban areas.

## CLEAN AIR / CLEAN COMMUNITIES

Bicycle and pedestrian infrastructure improvements, locally developed transit services and first mile/last mile connections can help to reduce VMT through mode shift.

## *Transit Projects in the Recommended Plan*

Table 5.5 and 5.6 lists transit projects funded under the capacity expansion program, their costs for the period of construction, and their projected completion dates. (Figure 5.1 shows the locations of projects.) The projects in Table 5.5 are projects that are included as part of the no-build and are being funded by the Commonwealth.

### TABLE 5.5
### Transit Expansion Projects in the Recommended Plan with Costs

| Project | FFY 2016–2020 | FFY 2021–2025 | FFY 2026–2030 | FFY 2031–2035 | FFY 2036–2040 | Non-MPO Transit Funds | MPO Highway Funds |
|---|---|---|---|---|---|---|---|
| Green Line Extension from Lechmere Station to College Avenue/Union Square (Cambridge and Somerville | $1,399,987,000 | $128,763,000 | | | | $1,528,750,000 | |
| Fairmount Line Improvements Project (Boston) | $26,500,000 | | | | | $26,500,000 | |

### TABLE 5.6
### Transit Expansion Projects in the Recommended Plan with Costs

| Project | FFY 2016–2020 | FFY 2021–2025 | FFY 2026–2030 | FFY 2031–2035 | FFY 2036–2040 | Non-MPO Transit Funds | MPO Highway Funds |
|---|---|---|---|---|---|---|---|
| Green Line Extension from College Avenue to Mystic Valley Parkway (Somerville and Medford) (highway funding flexed to transit) | $158,000,000 | $32,000,000 | | | | | $190,000,000 |

# MBTA CAPITAL INVESTMENT PROGRAMS

The MBTA's Capital Investment Program (CIP) is a guide to the MBTA's planned capital spending in future fiscal years (FYs). The document describes the MBTA's infrastructure and the capital needs for maintaining the system, outlines ongoing and programmed capital projects, and details planned projects to expand the transportation network.

The MBTA recently released a one-year CIP for FY 2016. Unlike the prior CIP, this is not a five-year plan. The MBTA will develop and release a five-year CIP for FYs 2017–2021 that complies with the requirements of Chapter 161A of the General Laws of the Commonwealth by January 2016. The 2016 one-year plan, the first to be issued as part of the Baker-Polito Administration, reflects a commitment to sustainable mobility and the strategic and prudent expenditure of available capital resources. It provides a transition as the MBTA continues to categorize and define its needs over the next five years, and also updates the criteria used in evaluating and prioritizing investments in the regional transit system.

Projects in the CIP are selected through a prioritization process that strives to balance capital needs across the entire range of MBTA transit services. Given the MBTA's vast array of infrastructure and the need for prudent expansion, the number of capital needs identified each year usually exceeds the MBTA's capacity to provide capital funds. Therefore, the MBTA engages in an annual prioritization and selection process to select the needs with the highest priority for funding and inclusion in the CIP.

One of the highest priorities for the MBTA is the pursuit of a "State of Good Repair" (SGR). To measure the need for capital expenditures devoted to maintaining and replacing existing infrastructure, transit systems often use the SGR standard, wherein all capital assets are functioning at their ideal capacity within their design life. While few transit systems are likely to achieve this ideal, the standard does identify a level of ongoing capital needs that must be addressed over the long-term in order for the existing infrastructure to continue to provide reliable service.

To assist in this, the MBTA employs an SGR database to help guide its capital decisions. Based on an inventory of all existing MBTA capital assets, the model allows the MBTA to track the capital investment needs for its existing infrastructure and to develop scenarios for capital investment to maintain the system in a state of good repair.

Prioritization of projects to be included in the CIP is based on the following criteria, as defined in the MBTA's enabling legislation: the impact of the project on the effectiveness of the Commonwealth's transportation system, service quality, the environment, health, and safety; the state of repair of the MBTA infrastructure; and the MBTA's operating costs and debt service. Projects that receive the highest priority are those with the greatest benefit and the least cost, as prioritized by the following criteria:

1. Impact on the environment
2. System preservation

3. Financial considerations
4. Operations impact
5. Legal commitments

Transportation equity is also considered.

Below is a description of the programs funded by the MBTA to maintain the transit system.

## *Revenue Vehicles Program*

### DESCRIPTION

The revenue vehicle fleet is one of the most visible components of the MBTA service network. These are the trains, buses, and other vehicles that passengers board every day (i.e., all vehicles that carry passengers in revenue service). Scheduled major overhauls, maintenance, and planned retirements allow the fleet to reach its useful life and prevent the unwarranted consumption of resources to maintain its reliability.

### COSTS

The revenue vehicle program is 30 percent of the MBTA's 2016 CIP, the largest share of any program area. In the 2009–2015 CIP, the MBTA allocated about 31 percent of its capital funds to this program. The MBTA will employ its SGR database to help guide its capital decisions for this program in the future. However, it is expected that funding for this program will continue to require a large share of the capital resources in the future.

## *Non-Revenue Vehicles Program*

### DESCRIPTION

Non-revenue vehicles and equipment support the entire range of MBTA operations and include over 1,000 systemwide vehicles and pieces of equipment. This program also includes funding for equipment for weather resiliency efforts as well as snow-fighting equipment.

### COSTS

The non-revenue vehicle program is 11 percent of the MBTA's 2016 CIP. In the 2009–2015 CIP, the MBTA allocated less than 1 percent of its capital funds to this program. The MBTA will employ its SGR database to help guide its capital decisions for this program in the future. Funding will always be allocated for this program; however, as shown in

the varying allocations in the different CIPs, the funding will vary depending on the needs identified by the SGR database.

## *Tracks/Right-Of-Way/Signals Program*

### DESCRIPTION

Tracks/Right-of-Way: Several types of track can be found throughout the MBTA system, depending on the service (i.e., commuter rail, rapid transit). The right-of-way for heavy rail rapid transit track often includes an electrified third rail through which subway cars receive the traction power needed for movement.

Signals: The primary responsibility of the MBTA signal system is to control trains for efficient spacing and run times, making it an integral part of the transit system. The signal system's goal is to maintain train separation while attempting to minimize headways and run times.

### COSTS

Systemwide track maintenance is 8 percent of the MBTA's 2016 CIP. In the 2009–2015 CIP, the MBTA allocated 17 percent of its capital funds to this program. The signal systems are crucial for supporting the safe and efficient operations of trains systemwide and account for 8 percent of the MBTA's 2016 CIP. In the 2009–2015 CIP, the MBTA allocated 6 percent of its capital funds to this program.

The MBTA will employ its SGR database to help guide its capital decisions for this program in the future. Funding will always be allocated for this program; however, as shown in the varying allocations in the different CIPs, the funding will vary depending on the needs identified by the SGR database.

## *Bridge Program*

### DESCRIPTION

Continued maintenance and rehabilitation of the MBTA's bridges will be required. This will include replacing bridge decks and reconstructing bridges. The MBTA bridge inspection program is tailored to ensure that bridge repairs are prioritized and that all bridges receive adequate attention.

### COSTS

The Bridge Program is 9 percent of the MBTA's 2016 CIP. In the 2009–2015 CIP, the MBTA allocated 5 percent of its capital funds to this program. The MBTA prioritizes its bridges through its bridge inspection program. Funding will always be allocated for this

program; however, as shown in the varying allocations in the different CIPs, the funding will vary depending on the needs identified by the SGR database.

## Stations Program

### DESCRIPTION

MBTA stations are one of the most visible components of the transit system; they provide access to rapid transit, light rail, commuter rail, and Silver Line services in the MBTA transit system. Many of the bus stops also have bus shelters of various kinds. The majority of funding for stations is devoted to renovation of subway stations, including accessibility upgrades and the systemwide replacement of escalators and elevators.

### COSTS

The Stations Program, including elevators and escalators, is 12 percent of the MBTA's 2016 CIP. In the 2009–2015 CIP, the MBTA allocated 25 percent of its capital funds to this program. The MBTA will employ its SGR database to help guide its capital decisions for this program in the future. Funding will always be allocated for this program; however, as shown in the varying allocations in the different CIPs, the funding will vary depending on the needs identified by the SGR database.

## Supporting Infrastructure Program

### DESCRIPTION

The Supporting Infrastructure Program includes both facilities and power.

Facilities: Facilities include administrative buildings, vent buildings, storage buildings, noise walls, retaining walls, culverts, parking garages and parking lots, layover facilities, and fencing (which prevent trespassers from gaining access to tracks and fast-moving trains).

Power: While power for the MBTA's network is supplied by an outside utility, the MBTA transforms and distributes electricity over its own system to power the entire network of subway, trackless trolley, and light rail lines. The capital equipment in this power program is essential to operations. It supplies electricity to subway trains and trolleys for the traction power needed for movement; to the signal systems for the power needed to control the trains; and to the stations to operate their lights, elevators, escalators, and other equipment. The MBTA's power program, arguably one of the least visible elements to passengers, is one of the most complex, important, far-reaching, and expensive systems for the MBTA to maintain.

### COSTS

The supporting infrastructure program is 15 percent of the MBTA's 2016 CIP. In the 2009–2015 CIP, the MBTA allocated 12 percent of its capital funds to this program. The MBTA will employ its SGR database to help guide its capital decisions for this program in the future. Funding will always be allocated for this program; however, as shown in the varying allocations in the different CIPs, the funding will vary depending on the needs identified by the SGR database.

## *Communications and Technology Program*

### DESCRIPTION

The MBTA Communications Department's responsibilities include maintaining an inventory of equipment and overseeing contract services for the Wide Area Network, two-way radio systems, microwave links, emergency intercoms, public address systems, light-emitting-diode (LED) message signs, fire alarm systems, security systems, and the supervisory control and data acquisition system. The department manages the MBTA's Operations Control Center, which consists of technology that allows for real-time monitoring and supervisory control of the signal and communications systems for the rapid transit and bus systems. Current investments include a Green Line Real-Time Tracking System, systemwide communications enhancements, and a Maintenance Management System.

### COSTS

The communications and technology program is 3 percent of the MBTA's 2016 CIP. In the 2009–2015 CIP, the MBTA allocated 3 percent of its capital funds to this program. The MBTA will employ its SGR database to help guide its capital decisions for this program in the future. Funding will vary depending on the needs identified by the SGR database.

## *Enhancement Program*

### DESCRIPTION

The Enhancement Program includes capital projects that improve existing service and foster increased ridership. Current investments include the Green Line Collision Avoidance Program, Commuter Rail Positive Train Control, and a climate change adaptation strategy.

### COSTS

The enhancement program is 5 percent of the MBTA's 2016 CIP. The MBTA will employ its SGR database to help guide its capital decisions for this program in the future. Funding will vary depending on the needs identified by the SGR database.

## MODEL RESULTS AND INTERPRETATION OF THE RECOMMENDED PLAN

In *Charting Progress to 2040*, the MPO has provided a 25-year vision of the Boston Region's transportation needs. Land-use patterns, growth in employment and population, and trends in travel patterns differ in how they affect demands on the region's transportation system. In order to estimate future demands on the system for this LRTP, the MPO utilized a regional travel demand forecast model. The model is a planning tool used to evaluate the impacts of transportation alternatives given varying assumptions about population, employment, land use, and traveler behavior. The model is used to assess potential projects in terms of air-quality benefits, travel-time savings, and congestion reduction.

### *Description of the MPO Model Set*

#### RECENT TRAVEL MODEL CHANGES

Before describing the general capabilities of, and inputs to, the current travel demand model, a list of recent major changes to the model set follows:

- Prior to 2010, the MPO model was run in a software package named EMME. The recently re-estimated model set is executed in a software package named TransCAD.
- In 2011, staff completed a new statewide household travel survey, conducted during an 18-month period. That survey, the 2011 Massachusetts Travel Survey (2011-MTS), was used to update the entire regional model.
- In addition to re-estimation, certain components of the model set have been completely revamped or enhanced, including:
    - Redesigned:
        - ♦ School trip purpose
        - ♦ Estimation of external trips
        - ♦ Internal-internal (I-I) distribution
        - ♦ Mode choice model

- Enhancements:
  - Developed a transportation analysis zone (TAZ)-specific pedestrian environmental variable (PEV)
  - Developed a turn-restrictions file, which is now incorporated in highway assignment procedures
  - Developed specific parameters for volume-delay functions to suit facility type
- Updates:
  - Because of the sensitivity of highway tolls, the actual toll rates are included in order to depict reality
  - Average fare by transit sub-mode is now incorporated into the model

- Staff updated and enhanced highway network characteristics using the Massachusetts Roadway Inventory File (RIF). This provided better representation of number of lanes, directionality, and capacity, as well as improvement of overall intersection detail throughout the network.
- Air quality calculations are now based on the latest technology, the EPA-approved motor vehicle emission simulator (MOVES 2014) model.
- In 2013, staff purchased a land-use allocation model (Cube Land), and incorporated it into the modeling process.
- TransCAD offers easy reporting at every step of the modeling process, which has been fully utilized to our advantage.

## TRAVEL DEMAND MODEL CHARACTERISTICS

As discussed earlier in this section, the Boston Region MPO utilizes a robust quantitative travel model framework that employs a traditional four-step planning process—trip generation, trip distribution, mode choice, and trip assignment. This travel demand model set simulates existing travel conditions and forecasts future-year travel on eastern Massachusetts transit and highway systems. For a more accurate picture of travel demands in the Boston region, all communities within the commuting shed (the area from which people commute) for eastern Massachusetts are represented in the modeled area, including an additional 63 communities that are outside of the 101-municipality MPO region.

The model represents all MBTA rail and bus lines, private express-bus carriers, commuter boat services, limited-access highways and principal arterials, and many minor arterials and local roadways. The region is subdivided into 2,727 transportation analysis zones (TAZs). A TAZ is a unit of geography that is defined based on demographic information—population, employment, and housing—and the numbers of trips generated

in, and attracted to, it. The model set is made up of several models, each of which represents a step in the travel decision-making process (the four-step process). The model set simulates transportation supply characteristics and transportation demand for travel from every TAZ to every other TAZ.

This simulation is the result of several inputs (different categories of data). Two broad sets of these inputs are land-use patterns, to identify amount and types of trips produced and how they are distributed (trip generation and trip distribution); and a transportation network with associated trip-making behavioral parameters, to allocate each trip onto different travel modes and onto a system of transportation network links (mode choice and trip assignments).

### Land Use

MAPC is responsible for developing the land-use inputs for the travel demand model. With guidance from an advisory panel (local jurisdiction staff, academic experts, and state agencies), MAPC and the MPO, in a joint effort, implemented an iterative land-use transportation model to quantify land-use patterns, by answering this basic set of questions:

- What will the Boston MPO region look like in 2040?
    - How many people will live here (population forecasts)?
    - What will they be doing (economic forecasts)?
    - Where will the activities take place (land-use patterns)?
    - How many trips will be made (trip-generation model)?
    - How will these trip ends be connected to form round trips (trip-distribution model)?

For each TAZ, this process generated number of households, household characteristics, employment-related activities, auto ownership, and other variables that produce travel demand on transportation systems (see Appendix E and the section below for more details).

### Transportation Network

This set of inputs was derived from various resources such as the Massachusetts Roadway Inventory File (RIF) and the MBTA routes and schedules.

The model is used to answer questions such as:

- What will the travel patterns in 2040 look like?
    - How will travelers select a particular mode, or a combination of modes for each trip (mode-choice model)

- How will these trips choose network path links representing available alternative modes (trip-assignment model)

All these inputs are updated on a regular basis to ensure reliability of forecasts.

## *Travel-Demand under 2012 Base Year, 2040 No-Build, and 2040 Build Conditions*

The travel model analysis for the LRTP consisted of several steps. First, staff tested an existing conditions network with existing land-use patterns, to simulate recent 2012 travel conditions. This constituted the model's Base Year. Projects included for analysis in the Base Year model were deemed "regionally significant," as defined by the federal government, because of being regional in nature, adding capacity, and having air-quality impacts for the region as measured by the model. Existing land-use information was derived from comprehensive land development and demographic databases maintained by MAPC and the Boston Region MPO.

Next, a 2040 No-Build alternative was incorporated into the model. This 2040 No-Build alternative was structured around the 2012 Base Year, and projects that were constructed between 2012 and 2015, as well as those that are currently under construction and those that are programmed in the first year of the 2015–2018 TIP. The process for developing 2040 land-use forecasts is described below.

Land-use forecasts, in the context of travel demand analyses, involve two basic factors or "agents" of growth–households and employments. To better deal with uncertainties in future projections of these variables, MAPC employed a scenario exercise between two alternatives, "Status Quo" and "Stronger Region." The latter option aligned better with the adopted land-use growth vision of the region called "MetroFuture," which entails the following assumptions:

- The region will attract and retain more young adults.
- Younger households (millennials) will be more inclined toward urban living.
- An increasing share of senior-headed households (baby boomers) will choose to downsize from single-family homes to apartments or condominiums.

With these assumptions, household and employment control totals were developed for the region and individual municipalities. The process utilized current and historic growth trends from a number of databases at the federal (Census Bureau, Bureau of Labor Statistics), state (Massachusetts Department of Public Health), and local (MAPC Development Database, local jurisdiction parcel database) levels. Finally, an iterative land-use transportation model in a software platform called Cube Land was used to allocate these household/employment projections onto each TAZ. In this modeling framework, projected households and employers ("agents") compete to locate in a landscape of various land-

use supplies, which are determined by economic factors ("bid-rents") and zonal attraction characteristics (land-rent affordability, transportation connectivity). More detail is provided in Appendix E – Methodology for Land Use Projections in the Boston Region.

The 2012 Base Year and 2040 No-Build scenarios thus provided a baseline against which the predicted effects of potential investments in the transportation system were measured.

Finally, staff developed an alternative set of projects called the 2040 Build Scenario through an investment scenario process discussed earlier in the Project Selection section. This set of projects was analyzed with same 2040 No-Build land-use assumptions in the travel demand model set. Several important travel statistics were reported and compared from all these conditions, including:

- Total vehicle-miles traveled (VMT) and vehicle-hours traveled (VHT) on a typical weekday
- Average speed of highway traffic
- Amount of air pollution produced by automobiles and transit vehicles
- Number of daily trips made by auto and transit
- Average daily fixed-route transit ridership by mode (rapid transit, bus, commuter rail, commuter boat, express bus)
- Percentage of people traveling by each travel mode

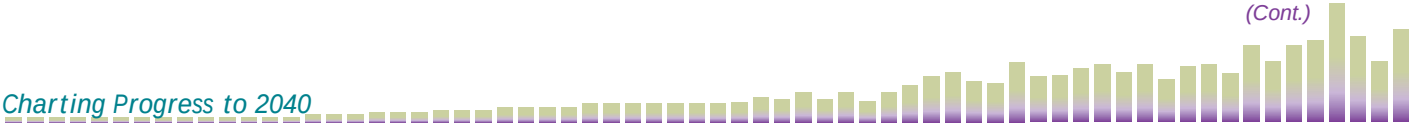
Selected travel-modeling results for the 2012 Base Year, 2040 No-Build, and 2040 Build scenarios—are shown in Table 5.7 below.

# TABLE 5.7
## 2012 Base Year, 2040 No-Build, and 2040 Build Scenarios

| Measure | 2012 Base | 2040 No-Build | 2040 Build | Percentage Change From 2012 to 2040 No-Build | Percentage Change From 2040 No-Build to 2040 Build |
|---|---|---|---|---|---|
| **Socioeconomic Variables (BRMPO)** | | | | | |
| Population | 3,163,900 | 3,601,600 | 3,601,600 | 13.8% | 0.0% |
| Households | 1,243,900 | 1,522,300 | 1,522,300 | 22.4% | 0.0% |
| Household Size | 2.5 | 2.4 | 2.4 | -7.0% | 0.0% |
| Total Employment | 1,850,000 | 2,027,800 | 2,027,800 | 9.6% | 0.0% |
| Basic | 371,800 | 316,300 | 316,300 | -14.9% | 0.0% |
| Retail | 316,800 | 334,600 | 334,600 | 5.6% | 0.0% |
| Service | 1,161,400 | 1,376,900 | 1,376,900 | 18.6% | 0.0% |
| **Households with Vehicles (BRMPO)** | | | | | |
| 0 vehicles | 16% | 20% | 20% | 25.0% | 0.0% |
| 1 vehicle | 37% | 39% | 39% | 6.4% | 0.0% |
| 2 vehicles | 35% | 25% | 25% | -29.3% | 0.0% |
| 3+ vehicles | 13% | 16% | 16% | 30.9% | 0.0% |
| **Trip Activity** | | | | | |
| Person Trips in Eastern MA | 16,451,300 | 19,024,000 | 19,024,000 | 15.6% | 0.0% |
| Auto person trips | 13,425,500 | 15,077,100 | 15,076,600 | 12.3% | 0.0% |
| Transit person trips | 905,000 | 1,152,100 | 1,152,400 | 27.3% | 0.0% |
| Non-motorized | 2,120,800 | 2,794,800 | 2,795,000 | 31.8% | 0.0% |
| Person Trips in BRMPO | 12,801,500 | 14,802,600 | 14,802,600 | 15.6% | 0.0% |
| Auto person trips | 10,122,800 | 11,270,500 | 11,270,000 | 11.3% | 0.0% |
| Transit person trips | 898,100 | 1,144,700 | 1,145,000 | 27.5% | 0.0% |
| Non-motorized | 1,780,600 | 2,387,400 | 2,387,600 | 34.1% | 0.0% |
| **Mode Choice** | | | | | |
| Mode Share in Eastern MA | 100% | 100% | 100% | 0.0% | 0.0% |
| Auto share | 82% | 79% | 79% | -2.9% | 0.0% |
| Transit share | 6% | 6% | 6% | 10.1% | 0.0% |
| Non-motorized share | 13% | 15% | 15% | 14.0% | 0.0% |
| Mode Share in BRMPO | 100% | 100% | 100% | 0.0% | 0.0% |
| Auto share | 79% | 76% | 76% | -3.7% | 0.0% |
| Transit share | 7% | 8% | 8% | 10.2% | 0.0% |
| Non-motorized share | 14% | 16% | 16% | 16.0% | 0.0% |
| **Highway Results (Interzonal)** | | | | | |
| Vehicles Assigned in Eastern MA | 12,733,200 | 14,291,400 | 14,291,000 | 12.2% | 0.0% |
| Auto | 10,540,700 | 11,793,300 | 11,792,900 | 11.9% | 0.0% |
| Trucks | 2,192,500 | 2,498,100 | 2,498,100 | 13.9% | 0.0% |
| Vehicles Assigned in BRMPO | 10,169,600 | 10,637,900 | 10,637,500 | 4.6% | 0.0% |
| Auto | 7,977,100 | 8,847,600 | 8,847,200 | 10.9% | 0.0% |
| Trucks | 2,192,500 | 1,790,300 | 1,790,300 | -18.3% | 0.0% |
| VMT in Eastern MA | 106,030,300 | 116,912,800 | 116,957,500 | 10.3% | 0.0% |

*(Cont.)*





# TABLE 5.7 (Cont.)

| Measure | 2012 Base | 2040 No-Build | 2040 Build | Percentage Change From 2012 to 2040 No-Build | Percentage Change From 2040 No-Build to 2040 Build |
|---|---|---|---|---|---|
| **Highway Results (Interzonal) *(cont.)*** | | | | | |
| Auto | 86,846,500 | 93,362,500 | 93,413,300 | 7.5% | 0.1% |
| Trucks | 19,183,800 | 23,550,255 | 23,544,235 | 22.8% | 0.0% |
| VMT in BRMPO | 69,448,500 | 74,968,400 | 74,970,100 | 7.9% | 0.0% |
| Auto | 57,594,000 | 61,058,400 | 61,073,800 | 6.0% | 0.0% |
| Trucks | 11,854,500 | 13,910,000 | 13,896,300 | 17.3% | -0.1% |
| VHT in Eastern MA | 3,277,800 | 3,765,200 | 3,763,600 | 14.9% | 0.0% |
| Auto | 2,712,500 | 3,049,500 | 3,048,500 | 12.4% | 0.0% |
| Trucks | 565,300 | 715,700 | 715,100 | 26.6% | -0.1% |
| VHT in BRMPO | 2,301,000 | 2,556,500 | 2,553,600 | 11.1% | -0.1% |
| Auto | 1,924,300 | 2,109,200 | 2,107,200 | 9.6% | -0.1% |
| Trucks | 376,700 | 447,300 | 446,400 | 18.7% | -0.2% |
| Average Speed in Eastern MA | 32.3 | 31.1 | 31.1 | -4.0% | 0.1% |
| Auto | 32.0 | 30.6 | 30.6 | -4.4% | 0.1% |
| Trucks | 33.9 | 32.9 | 32.9 | -3.0% | 0.1% |
| Average Speed in BRMPO | 30.2 | 29.3 | 29.4 | -2.8% | 0.1% |
| Auto | 29.9 | 28.9 | 29.0 | -3.3% | 0.1% |
| Trucks | 31.5 | 31.1 | 31.1 | -1.2% | 0.1% |
| **Congested VMT (0.75 V/C <)** | | | | | |
| in Eastern MA | 65,875,292 | 78,083,600 | 79,281,500 | 18.5% | 1.5% |
| BRMPO | 45,748,927 | 52,608,500 | 53,130,700 | 15.0% | 1.0% |
| **Transit Results** | | | | | |
| Transit Trips (Linked) | 905,000 | 1,152,100 | 1,152,400 | 27.3% | 0.0% |
| Local Bus | 360,000 | 435,600 | 435,300 | 21.0% | -0.1% |
| Express Buses | 25,600 | 26,900 | 27,100 | 5.1% | 0.7% |
| Bus Rapid Transit | 27,400 | 63,000 | 63,200 | 129.9% | 0.3% |
| Rapid Transit Lines | 700,000 | 896,000 | 896,600 | 28.0% | 0.1% |
| Commuter Rail | 104,000 | 122,700 | 122,000 | 18.0% | -0.6% |
| Ferry | 4,500 | 11,700 | 11,700 | 160.0% | 0.0% |
| Transit Trips (Unlinked) | 1,221,500 | 1,555,900 | 1,555,900 | 27.4% | 0.0% |
| Walk Access Transit | 1,050,500 | 1,338,100 | 1,338,900 | 27.4% | 0.1% |
| Drive Access Transit | 171,000 | 217,800 | 217,000 | 27.4% | -0.4% |
| Average Transfer Rate | 1.35 | 1.35 | 1.35 | 0.1% | 0.0% |
| **Air Quality (BRMPO)** | | | | | |
| Volotile Organic Compounds (kg) | 8,546 | 3,908 | 3,905 | -54.3% | -0.08% |
| Nitrogen Oxides(kg) | 54,672 | 27,927 | 27,914 | -48.9% | -0.05% |
| Carbon Monoxide - Winter (kg) | 222,485 | 66,731 | 66,693 | -70.0% | -0.06% |

BRMPO - Boston Region MPO (101 Municipalities) Eastern MA (164 Municipalities)
Linked Transit Trips - A transit trip made between an origin and a destination that does not account for transfers between vehicles or modes.
Unlinked Transit Trips - A transit trip made between an origin and a destination that accounts for transfers between vehicles or modes.

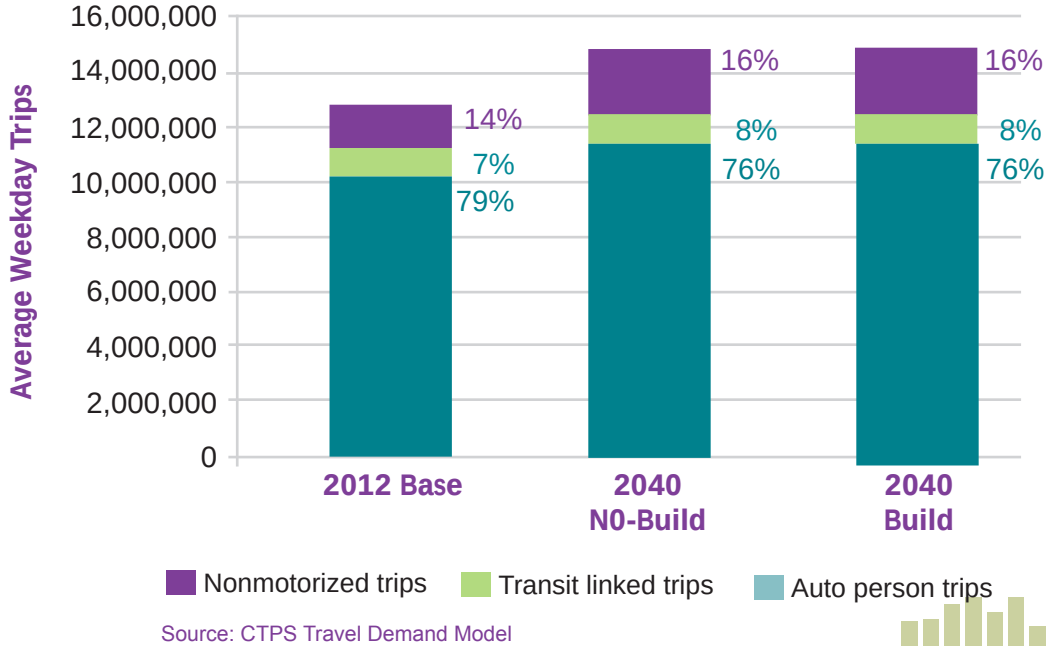
## *Interpretation of the LRTP*

Analyzing current patterns of demographic shifts and the Boston region's vibrant economy, the 2040 demographic forecasts projected an increase in population (13.8 percent), households (22.4 percent), and employment (9.6 percent). This assumed level of demographic growth is estimated to produce approximately 19 million trips on an average weekday, regardless of modes—a 16 percent increase from the 2012 Base-Year conditions for the model area.

Within this overall growth, there is a larger growth shift estimated in the millennial (birth years from early 1980s to early 2000s) and the baby boomer (births between the years 1946 and 1964) age cohorts, which likely resulted in a greater number of 0 and 3+ vehicles households in the region. Consequently, there is a shift in mode choice between 2012 Base Year and 2040 No-Build/Build conditions.

Transit and nonmotorized trips are expected to grow faster than auto trips. Nonmotorized trips are forecasted to have the greatest percentage increase of slightly more than 34 percent, from 1,780,600 trips in 2012 to 2,387,400 trips in the 2040 No-Build condition. Transit trips will grow from 898,100 trips to 1,144,700 trips (28 percent), with a modest increase in auto trips, from 10,122,800 in 2012 to 11,270,500 in 2040 (about 11 percent). These higher growth shares in nonmotorized and transit trips are a result of underlying land-use allocation assumptions, as more households are located near transit services and other activity centers in a compact fashion. Figure 5.2 below shows the change in share of auto, transit, and nonmotorized trips in the Base Year, 2040 No-Build, and 2040 Build conditions. As transit and nonmotorized trips are growing at faster rates than auto trips, these modes have a slightly greater percentage of total trips made in the future year.

**FIGURE 5.2**
**Mode Share Split – Person-Trips Under 2012 Base Year, 2040 No-Build, and 2040 Build Conditions**

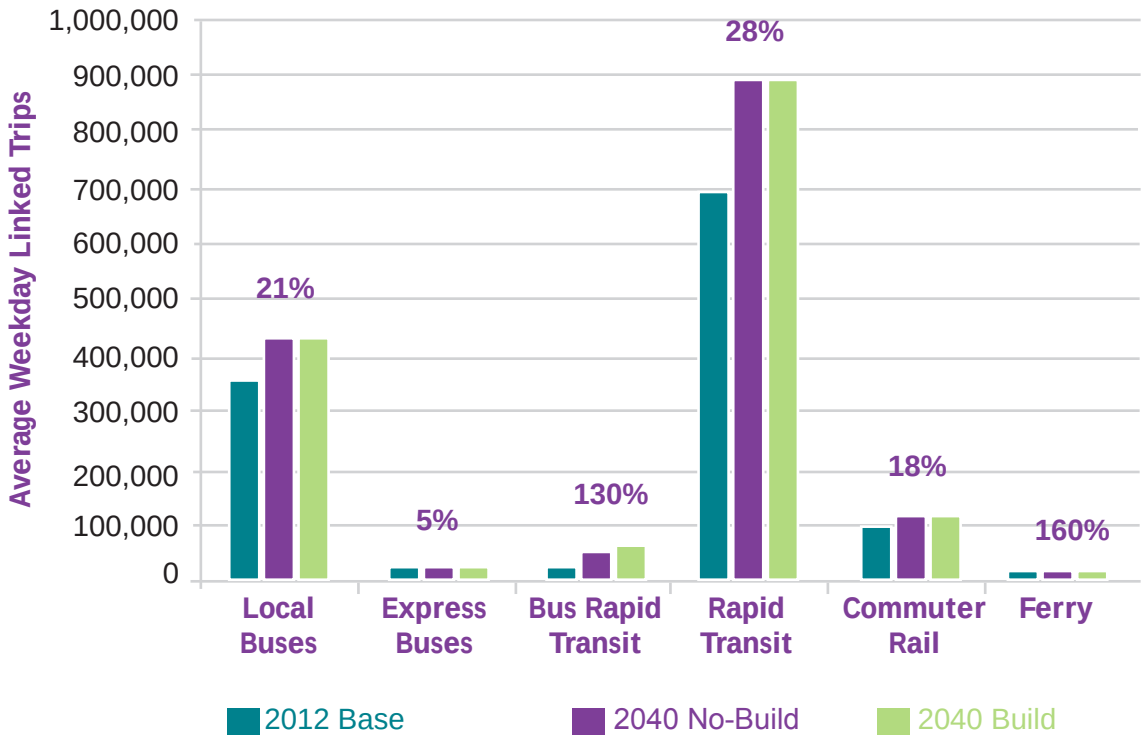



Source: CTPS Travel Demand Model

## TRANSIT

As in the highway assignment portion of the model framework, transit ridership forecasts were not constrained by existing and proposed transit service capacity. This produced a true level of demands on highway and transit facilities. In the Base Year, the model set estimated 905,000 linked transit trips on a typical weekday. With an observed average transfer rate of 1.35, this translates to 1,221,500 unlinked trips. In the 2040 No-Build condition, growth of more than 27 percent was estimated for these transit trips. Two factors contributed to this growth: assumed growth in overall population and associated demographic shift (more 0-vehicle households), and changes in transit service supply (Green Line extension to Union Square, Fairmount Line service improvements, etc.). Figure 5.3 shows how these additional transit trips are estimated to be allocated across various transit modes.

**FIGURE 5.3**
**Increases in Transit Trips by Mode**




Source: CTPS Travel Demand Model

In addition to overall growth in transit trips because of transit-conducive demographic growth, there is mode-specific growth that warrants further discussion. The number of

linked trips on the bus rapid transit system is forecasted to grow by 35,600 trips (130 percent) in the 2040 No-Build condition. This is based on forecasted congestions on roadway corridors where BRT services are offered, such as those to South Boston and the corridor south heading to Dudley Square and an extension of the Silver Line service from South Station and the Airport to Chelsea.

Rapid transit lines also are expected to grow significantly, from 700,000 trips in 2012 to 896,000 in 2040, a 28 percent increase. This is a result of new rapid transit services: – the Green Line extension in Somerville and Medford, service enhancements for the Blue Line, and capacity expansions in a number of park-and-ride locations along the rapid transit service corridors. A sizeable portion of existing population growth is not served by premium transit services (BRT, rapid transit, or commuter rail), such as high-density population along local bus routes 23 and 28. These areas will continue to grow, resulting in a substantial increase in local bus trips (21 percent). There is a new Inner Harbor ferry service proposed between Charlestown-East Boston-South Boston, as well as ferry service to the new casino in Everett. This added capacity may have attracted new ferry trips, rising from 4,500 in 2012 to 11,700 in 2040.

The 2040 Build condition should reflect the expected impact that the region's transportation investments may have on the system. A set of improvement projects and programs was selected for this Build condition from the low-cost Operation-and-Management (O&M) investment scenario. The following programs were identified to receive funding during the life cycle of this LRTP: Complete Street, Bicycle/Pedestrian, Intersection Improvement, and Community Transportation/Parking/Clean Air Mobility. Specific projects under these programs are in various stages of development, and are discussed in other sections of the LRTP. Among major infrastructure/capacity projects included in the Build condition, the Phase 2 Green Line extension resulted in a slight increase in trips for rapid transit mode, between 2040 Build and No-Build conditions.

## HIGHWAY

Although auto mode share is forecasted to decline compared to transit and nonmotorized modes, the model estimated a net increase in several metrics from highway assignments. This is because a large portion of the trip-making population will continue to depend on automobiles; which results in growth of total vehicle trips (from 10.2 million to 10.6 million, or 4.6 percent), and total VMT (from 69.5 million to 75 million, or 7.9 percent). With this increased level of automobile and other vehicle (non-transit) activities, roadway links will continue to be congested. This is reflected in the larger growth in total vehicle hours of travel (VHT) as compared to VMT. VHT is estimated to grow from 2.3 million in the 2012 Base Year to 2.6 million under 2040 No-Build conditions, leading to a decrease in average speed on roadway links (-2.8 percent). Freight trucks traverse the same roadway facilities as passenger autos, and their share of VHTs is estimated to grow at a faster rate of almost 19 percent. This needs to be addressed in the MPO's transportation investment program, as freight mobility is vital to the region's economic growth.

The cumulative effects of major highway capacity projects on vehicle travel, as analyzed in the 2040 Build condition, is minimal. With more roadway capacities introduced, there is an increase in VMTs, and a corresponding slight decrease in VHT, both less than one percentage point. A decrease in truck VHT is estimated, from 447,300 in No-Build to 430,900 in Build condition. This reduction in vehicle travel time between Build and No-Build conditions is expected, as the Build condition consisted of few large infrastructure projects from the adopted low-cost O&M Investment Programs.

## NONMOTORIZED TRAVEL

Travel activities in this category consist of walking and bicycling trips occurring between, and within, traffic analysis zones (TAZs). These trips are a function of existing and assumed future land-use patterns; more compact and mixed-use land-use scenarios lead to a greater number of bicycle and pedestrian trips. With the MPO's adopted Stronger Region land-use scenario, nonmotorized trips are forecasted to grow by 34 percent between Base year and the 2040 No-Build conditions. The LRTP's Bicycle/Pedestrian and Complete Streets programs could add 3,400 pedestrian and bicycle trips per day in the Build condition.

# 6 CHARTING PERFORMANCE

## OVERVIEW OF PERFORMANCE-BASED PLANNING

### *Background of Performance-Based Planning*

Increasingly, over the past two decades, transportation agencies have been utilizing "performance management"—a strategic approach that uses performance data to support decisions to help achieve desired outcomes for their multimodal transportation systems. Performance management is credited with improving project and program delivery, informing investment decision making, focusing staff on leadership's priorities, and providing greater transparency and accountability to the public.

Performance-based planning and programming (PBPP) refers to transportation agencies' application of performance management in their planning and programming processes. For MPOs, this includes a range of activities and products undertaken by a transportation agency, together with other agencies, stakeholders, and the public as part of the 3C Metropolitan Transportation Planning Process. This includes developing:

- Long-range transportation plans (LRTPs)
- Other plans and processes (including those that are federally required, such as Strategic Highway Safety Plans, Asset Management Plans, the Congestion Management Process, Transit Agency Asset Management Plans, and Transit Agency Safety Plans, as well as others that are not required)
- Programming documents, including state and metropolitan Transportation Improvement Programs (STIPs and TIPs)

The goal of PBPP is to ensure that transportation investment decisions—both long-term planning and short-term programming—are based on their ability to meet established goals.

The cornerstone of Moving Ahead for Progress in the 21st Century's (MAP-21) highway program transformation is this movement toward performance- and outcome-based results. States will invest resources in projects to achieve individual targets that collectively will make progress toward national goals.

## *Requirements of Performance-Based Planning*

The US Secretary of Transportation, in consultation with states, MPOs, and other stakeholders, established performance measures for fatalities and serious injuries to fulfill the Highway Safety Improvement Program; proposed performance measures for pavement conditions for Interstate and National Highway System (NHS) bridge conditions, and general performance of the Interstate and NHS; and drafted performance measures to assess traffic congestion and on-road mobile source emissions. States and MPOs will set performance targets to support these measures; and state and metropolitan plans will describe how program and project selection would help to achieve the targets.

## *Status of Performance-Based Planning*

The Boston Region MPO's transition to performance-based planning is underway in anticipation of MAP-21 performance-measure requirements. The MPO has:

- Established goals and objectives that align with national goals
- Developed performance measures
- Analyzed some performance measure trends over time to identify priorities and prioritized investments that advance its goals and objectives

The following sections of this chapter demonstrate how transportation investments over the next 25 years would advance the MPO's goals and objectives. Using PBPP, the MPO will track progress and adjust priorities, if necessary, to ensure this advancement.

# DEMONSTRATING PROGRESS TOWARD GOALS AND OBJECTIVES

MPO investments over the life of the LRTP commit funding to specific projects and reserve future funding for different project types through investment programs. In reporting the benefits of specific projects, MPO staff conducted project-level assessments to determine each project's impact in advancing MPO goals through performance measures.

In order to estimate the impact of future projects to be funded through investment programs, MPO staff used sketch-planning and travel demand modeling techniques to forecast progress toward MPO goals through performance measures. For the Intersection Improvements, Complete Streets, Bicycle and Pedestrian, and Community Transportation programs, MPO staff first analyzed a sample of past investments to determine typical project costs and benefits. MPO staff then used these assumptions to estimate the impact of future investments, and anticipated progress toward goals and objectives.

## *Safety*

The set of LRTP projects and programs advance the MPO's safety goal to provide safe transportation for all modes by prioritizing improvements at high-crash locations. High-crash locations are those with the highest crash severity based on fatalities, injuries, and property damage.

### HIGH-CRASH LOCATIONS

Overall, safety is improving in the region. Between 2006 and 2012, traffic fatalities declined by 11 percent, and included fewer automobile, truck, pedestrian, and bicycle fatalities. Similarly, total traffic crashes and injuries declined by 21 percent and 27 percent, respectively.

Despite these overall gains, crashes and injuries for pedestrians and bicyclists specifically rose during this same period. Bicyclists and pedestrians remain vulnerable to injury; between 2006 and 2012, roughly two-thirds of pedestrian and bicycle crashes resulted in injury. In addition, there are still a number of high-crash locations throughout the Boston MPO region, including nearly 80 of the Top-200 Crash Locations statewide.

LRTP investments propose safety improvements at approximately 120 high-crash locations, including multiple truck, bicycle, and pedestrian high-crash locations to reduce fatalities and serious injuries in the region.

Major Infrastructure investments consist of 12 projects that would implement safety improvements at 26 high-crash locations, including seven (7) truck high-crash locations. The Route 128 Add-a-Lane project will widen 3.25 miles of I-95 in Needham and Wellesley to install an additional 12-foot travel lane and 10-foot shoulder in each direction. This will address serious safety issues. Adding a fourth full-time travel lane will eliminate using the breakdown lane during peak periods. Adding collector roads between Highland Avenue and Kendrick Streets will provide safer weaving movements between the interchanges.



LRTP intersection investments will provide safety improvements for automobiles, trucks, bicyclists, and pedestrians at 16 locations. Within the FFY 2016–20 time band, intersection improvements at Derby Street, Whiting Street (Route 53) and Gardner Street in Hingham and Middle Street, Libbey Industrial Parkway and Tara Drive in Weymouth will address two high crash locations. Beyond 2020, allocation of nearly $445 million to the Intersection Improvement Program would allow approximately 31 projects to improve safety at 14 high-crash locations in the future.



The combination of Complete Streets projects to be implemented in the FFYs 2016–20 TIP and future projects to be identified through the Complete Streets program beyond 2020 would implement safety improvements at nearly 70 high-crash locations. Within the FFYs 2016–20-time band, 13 corridor investments will provide safety improvements for automobiles, trucks, bicyclists, and pedestrians. Nine of the 13 Complete Streets projects improve safety at one or more high-crash locations.

In addition, these 13 corridors will provide safe and continuous accommodations for non-motorized users by adding 24 miles of new bicycle facilities and more than six miles of new sidewalk. For example, reconstructing Massachusetts Avenue in Lexington will add new bicycle lanes throughout this 0.7-mile section of the corridor, enhancing safe access to the Minuteman Commuter Bikeway. The Gateway East project along Route 9 in Brookline will provide added safety for bicyclists by implementing cycle tracks that physically separate the bicycle lane from the travel lane to reduce conflicts between motorists and bicyclists. In addition, reserving nearly $920 million for the Complete Streets Program in 2021−40 would apportion approximately 70 projects to improve safety at nearly 50 high-crash locations in the future.

## System Preservation

Virtually all the projects and programs in the LRTP advance the MPO's system preservation goal to maintain the transportation system by improving pavement condition, bridge condition, or sidewalk infrastructure, or by prioritizing projects that improve emergency response or ability to respond to extreme conditions.

## PAVEMENT CONDITION



Recent trends indicate that pavement condition has remained constant between 2008 and 2012, yet arterials with substandard pavement condition continue to account for a disproportionate share of the roadway lane miles. While arterials comprise 62 percent of the monitored roadways, they account for 90 percent of roadways that are in poor condition.

The proposed projects and programs would improve approximately 240 lane miles of substandard pavement, primarily along arterial corridors in the region. The combination of Complete Streets projects to be implemented in the FFYs 2016–20 TIP and future projects to be identified through the Complete Streets program beyond 2020 would address more than 180 lane miles of substandard pavement. Specific corridor reconstruction projects include Ferry Street in Everett, Route 1A (Main Street) in Walpole, and Route 30 (Main Street) in Southborough. The Intersection Improvement Program would also address some substandard pavement by improving more than 10 lane miles of such pavement at arterial intersections beyond 2020.

Major Infrastructure investments to modernize or expand major arterials would resurface or reconstruct more than 40 lane miles of substandard pavement through projects like reconstruction of Highland Avenue and Needham Street in Newton and Needham and Middlesex Turnpike Improvements, Phase III in Bedford, Billerica and Burlington.

## BRIDGE CONDITION

An analysis of the condition of bridges in the Boston region indicates that between 2007 and 2014, the percentage of structurally deficient bridges increased from six (6) to nine (9) percent, functionally obsolete bridges remained constant at 19 percent, and posted bridges declined from seven (7) to four (4) percent.



Although the MassDOT Bridge Program (not included in the MPO's target program) is the primary funding source for replacement or rehabilitation of substandard bridges, LRTP investments would contribute modestly to bridge preservation by addressing an estimated 25 substandard bridges. Major Infrastructure investments would address 13 substandard bridges through projects like the reconstruction of Rutherford Avenue in Boston and Route 128 Add-a-Lane in Needham and Wellesley. The remaining substandard bridges would be addressed through the Complete Streets Program in the 2021–40-time bands.

## SIDEWALK INFRASTRUCTURE CONDITION

Outdated and inadequate information on sidewalk data prevents reporting a baseline condition for sidewalk infrastructure in the region; however there are gaps and barriers throughout the network in need of repair.

LRTP investments would improve more than 160 miles of sidewalk, primarily along arterial corridors like Route 27 in Natick or Massachusetts Avenue in Lexington, and out-of-compliance intersections in the region. More than 100 miles of improved sidewalk would be implemented through Complete Streets Program funding from 2021–40.

## EMERGENCY RESPONSE

The MPO's All-Hazards Planning application highlights the need to improve emergency response and the ability to respond to extreme conditions by displaying transportation infrastructure vulnerable to climate change and other hazards, evacuation routes, and emergency support locations. Although the MPO is not responsible for emergency response nor has the ability to respond to extreme conditions, it remains a priority in transportation investment decisions in order to improve the region's resilience in the future.

LRTP investments will improve emergency response or ability to respond to extreme conditions for more than 70 projects. Through the Complete Streets Program, corridor improvements would upgrade bridges and culverts to adapt transportation infrastructure that is vulnerable to climate change and other hazards. In addition, Intersection

Improvement Program investments would improve emergency response by updating intersections along evacuation routes and those in close proximity to emergency support locations.

## *Capacity Management/Mobility*

To advance the MPO's Capacity Management/Mobility goal of utilizing existing facilities more efficiently and increasing healthy transportation options, LRTP investments aim to address MPO-identified bottleneck locations, improve transit access and reliability, and expand the bicycle and pedestrian network.

### MPO-IDENTIFIED BOTTLENECK LOCATIONS

As part of the LRTP Needs Assessment, MPO staff analyzed several congestion measurements for both current and future conditions based on travel time, travel speed, and volume/capacity ratios to identify the worst bottleneck locations in the region. Although staff identified numerous major infrastructure projects that would address MPO-identified bottleneck locations, less available funding over the life of the plan limited the number of these projects that the MPO could prioritize for funding. Yet, there are still two LRTP investments that would significantly improve mobility at MPO-identified bottleneck locations by adding roadway capacity:

- The Route 128 Add-a-Lane project will improve one MPO-identified express highway bottleneck location by widening 3.25 miles of I-95 in Needham and Wellesley
- Reconstruction of Route 18 (Main Street) in Weymouth will improve one MPO-identified arterial bottleneck location by widening a four-mile section of the corridor from two to four lanes



## TRANSIT ACCESS AND RELIABILITY

State transportation funding (non-federal aid) is the primary funding source for targeted expansion of the transit system. The MPO recognizes the importance and necessity of transit expansion, and LRTP investments will further extend the Green Line from College Avenue to Route 16/Mystic Valley Parkway in Medford and Somerville. The additional one-mile transit extension would improve access to existing centers of economic activity and services, and support non-single-occupant-vehicle travel.

Complete Streets investments also improve transit access and transit service by implementing traffic and operational improvements along corridors. In the FFYs 2016–20-time band, these investments will improve access to transit along 11 corridors that serve 18 bus routes, operating nearly 1,000 bus trips on a typical weekday. Reconstruction of Main Street (Route 30) in Southborough will add continuous sidewalks and bicycle lanes along the corridor to support existing MetroWest Regional Transit Authority bus service. In addition, reconstruction of Ferry Street in Everett will reduce delay for MBTA Route 110 service along the corridor through traffic signal upgrades.

## BICYCLE AND SIDEWALK NETWORK



LRTP investments will make significant progress in expanding the bicycle and pedestrian network to increase healthy transportation options and promote active modes. Over the next 25 years, MPO investments propose to add more than 170 miles of on-road bicycle facilities, nearly 90 miles of new sidewalks, and approximately 120 miles of off-road paths and trails. Most of the new bicycle and pedestrian network will be funded through the Complete Streets and Bicycle and Pedestrian Programs between 2021 and 2040. In addition, projects like Rutherford Avenue in Boston will incorporate a new shared-use path along the project corridor, and Route 126 (Pond Street) in Ashland will transform the corridor by adding sidewalks and bicycle lanes where no facilities currently exist.

## Transportation Equity

To advance the MPO's Transportation Equity (TE) goal of providing comparable transportation access and service quality among communities regardless of income level or minority status, the MPO targets investments to areas that benefit a high percentage of low-income and minority populations.

### MPO-IDENTIFIED TRANSPORTATION ISSUES IN TRANSPORTATION EQUITY AREAS

The proposed projects and programs in the LRTP target investments at approximately 100 TE areas that contain an above-average percentage of low-income and minority populations.

Major infrastructure investments like grounding McGrath in Somerville and improving Route 126 and Route 135 in Framingham will address MPO-identified transportation issues for TE populations. Grounding McGrath will help reconnect two TE areas, and improving Downtown Framingham will enhance MetroWest Regional Transit Authority service for many low-income and minority riders.

Complete Streets investments such as reconstructing Route 85 (Maple Street) in Marlborough, Ferry Street in Everett, and Route 129 (Lynnfield Street) in Lynn will improve safety and mobility for TE populations. Improvements will consist of upgraded sidewalks and improved crossings for pedestrians, and updated signals at intersections for better traffic flow for automobiles and buses. In addition, approximately 90 projects are expected to improve transportation in TE areas with funding set aside in the Complete Streets, Intersection Improvements, and Bicycle and Pedestrian programs beyond 2020.

## Clean Air/Clean Communities

The MPO's Clean Air/Clean Communities goal of creating an environmentally friendly transportation system prioritizes investments that reduce greenhouse gas (GHG) emissions and other transportation-related pollutants.



### GHG EMISSIONS

The proposed projects and programs in the LRTP are estimated to reduce GHG emissions by approximately 5,000 tons of $CO_2$ annually. These GHG emission

reductions are primarily derived from Complete Streets, Intersection Improvements and Major Infrastructure projects between FFYs 2016 and 2020. These investments reduce automobile delay through traffic signal improvements and encourage mode shift by expanding transportation options.

In addition, the Green Line Extension from College Avenue to Route 16 in Medford and Somerville would contribute to reducing GHG emission by supporting new transit trips previously made by automobile.

## *Economic Vitality*

The MPO's transportation investments advance economic vitality by prioritizing projects that support access to targeted development areas for multiple modes.



### ACCESS TO TARGETED DEVELOPMENT AREAS

One of MAPC's MetroFuture implementation strategies is to focus on economic growth, and coordinate transportation investments to guide such growth in the region.

During the past few years, MAPC has worked with the Executive Office of Housing and Economic Development (EOHED) and the Executive Office of Energy and Environmental Affairs (EOEEA) to identify local, regional, and state priority development and preservation areas in municipalities within the MPO region to identify those locations most suitable for added housing and places of employment, as well as the creation and preservation of open space.

The proposed projects and programs in the LRTP support this smart growth planning work by improving transportation access to approximately 90 targeted development areas across the region.

Major Infrastructure investments along six major arterials would improve access to residential and employment areas that are well suited to support continued economic

vitality and future growth. The reconstruction of Rutherford Avenue in Boston, Route 18 (Main Street) in Weymouth, and Highland Avenue and Needham Street in Newton and Needham will expand transportation options and enhance access to transit to facilitate new development. In addition, the Green Line Extension from College Avenue to Route 16 will extend rapid transit service to provide access to existing centers of economic activity and services, as well as support transit-oriented development.

Complete Streets investments will also improve multimodal access to targeted development areas well suited to support continued economic vitality and future growth. Within the FFYs 2016–20 time band of the LRTP, there are nine projects that support access to targeted development areas, including

- Reconstruction of Route 85 (Maple Street) in Marlborough that will support access for all modes to a 43D site located at the former Lucent site in Marlborough
- Reconstruction of Route 27 (North Main Street) that will provide bicycle, pedestrian, and automobile access to a 40R site located on the former Paperboard site at 182 North Main Street in Natick

In addition, approximately 70 projects are projected to support targeted development areas with funding set aside in the Complete Streets, Intersection Improvements, and Bicycle and Pedestrian programs beyond 2020.

## ECONOMIC IMPACT ANALYSIS

MPO staff used Transportation Economic Development Impact System (TREDIS) software to estimate traveler cost savings and the number of jobs created by the set of major investment projects programmed into the LRTP. Traveler cost savings accrue as users benefit from mobility and reliability improvements in the region's transportation network. TREDIS estimated these costs savings for households and businesses by comparing the relationship between vehicle miles traveled, vehicle hours traveled, and the fraction of congested roadway between the build and no-build scenarios. For the set of major investment projects, TREDIS estimated a total of $40.4 million (in 2015 dollars) in traveler cost savings for 2040, including $18.5 million in total savings for commute and personal-type trips, and $21.9 million in total savings for freight trips.

The estimated number of jobs created by the set of major investment projects fell into two categories:

- Temporary Construction Jobs: The number of construction jobs was estimated by TREDIS based on the type (highway or rail) and cost of each project. By definition, construction jobs exist only during the planning and construction stages of a transportation investment, and generally are not considered reflections of long-term economic development. For the planned period of construction of major investment projects from 2016 to 2030 (there are no major infrastructure jobs proposed for 2031 to 2024), TREDIS estimated creation of 350 construction jobs per year.

- Permanent Full-Time Jobs: The estimated number of permanent full-time jobs is a measure of long-term economic development, and is generated as a product of the full set of direct, indirect, and induced impacts of the major investment projects on the regional economy. TREDIS estimated the number of permanent full-time jobs by incorporating results of the traveler cost savings into a regional economic impact model. For the year 2040, TREDIS estimated that 150 permanent full-time jobs would be created by the set of major investment projects.

## NEXT STEPS IN PERFORMANCE-BASED PLANNING

Performance-based planning is an ongoing process and will evolve as the MPO monitors and evaluates its progress using performance measures. The MPO will advance performance-based planning through its core planning documents by:

- Continuing scenario planning to explore how various transportation investments support goals through the LRTP
- Considering performance-based planning needs and issues when deciding what activities to fund through the UPWP
- Tracking annual progress toward goals and objectives through the TIP

In FFY 2016, the MPO will continue to monitor system-level trends and propose performance targets to guide investment decisions. If, in its annual monitoring, the MPO sees it is not making progress toward its targets, then the organization would need to consider modifying investment or policy priorities, and weigh the tradeoffs involved. For example, allocating a greater share of funding to intersection improvements at high-crash locations may make significant progress toward reducing traffic fatalities and serious injuries; however, it also may impact the MPO's ability to meet system-preservation targets for pavement or bridge conditions. By continuously monitoring and evaluating its progress, the MPO will be able to make these difficult decisions across competing goals and objectives in a more informed manner, resulting in greater outcomes for all concerned.

# 7 TRANSPORTATION EQUITY

## THE TRANSPORTATION EQUITY PROGRAM

The purpose of the MPO's transportation equity (TE) program is to ensure that populations protected under various federal and state civil rights statutes, executive orders, and regulations (TE populations) are provided equal opportunity to participate fully in the MPO's transportation planning and decision-making process. The program also ensures that TE populations share equitably in the benefits and burdens of past, present, and planned future transportation projects, programs, and service. The TE program includes three types of activities: 1) outreach to TE populations; 2) systematic consideration of equity in the planning and programming process; and 3) analyses to identify TE populations and their transportation needs, and to estimate the equity impacts of MPO funding decisions.

Environmental Justice (EJ) Executive Order 12898 of February 11, 1994 laid the groundwork for the MPO's TE program. This executive order required each federal agency to achieve environmental justice by identifying and addressing any disproportionately high adverse human health or environmental effects—including interrelated social and economic effects—of its programs, policies, and activities on minority or low-income populations. The EJ executive order was intended not to create new mandates, but to encourage implementation of existing statutes, such as Title VI of the Civil Rights Act of 1964, which states that, "No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance." Executive Order 13166 of August 11, 2000 extended Title VI national origin protections to individuals with limited English proficiency (LEP). As recipients of federal funding, MPOs are subject to EJ and Title VI requirements.

Because the MPO's TE program grew out of EJ requirements, initially it was designed to serve minority and low-income populations (EJ populations). More recently, in response to Federal Transit Administration (FTA) and Federal Highway Administration (FHWA) LEP requirements and the extension of protections based on age, sex, and disability through the FHWA Title VI/Nondiscrimination program, the MPO is assessing how to expand its TE program to consider systematically the needs of additional protected populations.

# TRANSPORTATION EQUITY OUTREACH FOR THE LRTP

TE outreach is an integral part of the MPO's overall public participation program designed specifically to communicate with low-income and minority residents, the elderly, persons with disabilities, and persons with LEP. The purpose of TE outreach is to identify transportation needs of specific populations served by the TE program and promote their involvement in the planning process. Through this outreach, the MPO hopes to develop relationships that will heighten awareness and sow seeds of mutual understanding, appreciation, and trust to encourage broader participation of TE populations.

Outreach targets both individuals and organizations representing the interests of TE populations, such as social-service organizations, community-development corporations, regional employment boards, civic groups, business and labor organizations, transportation advocates, environmental groups, EJ and civil-rights groups, and the state's regional coordinating councils (RCCs)—recently formed through the Statewide Mobility Management Program to coordinate human-service transportation services.

The MPO maintains an email list of TE contacts to provide them general information about the MPO and its planning processes, and give them information about topics and events of specific interest to the communities served by the TE program. During the past year and a half, staff has worked to increase significantly the number of valid contacts on this list.

Initial TE outreach for the LRTP began in fall 2014 with a series of public meetings to solicit comments on the MPO's revised Public Participation Plan (P3) and inform members of the public about the MPO's TE program. These meetings were held in areas with high concentrations of minority, low-income, and LEP residents, including Framingham, Lynn, Quincy, and the Fields Corner neighborhood of Dorchester in Boston. The focus of these meetings was to provide information about and solicit input on the P3, which describes the public involvement process for the LRTP and other major MPO documents and activities. These meetings set the stage for specific LRTP public engagement, as the P3 provides information about the LRTP development schedule and the types and timing of opportunities for participation. Subsequent email notifications to the TE contacts kept them apprised of all public meetings for the LRTP and MPO-sponsored meetings at which the LRTP was discussed. Chapter 2 (Public Participation - Public Outreach Methods section) discusses the public meetings and other outreach opportunities specifically for this LRTP.

Notices for all MPO-sponsored public meetings are routinely translated into the three languages, other than English, that are most frequently spoken in the MPO area: Spanish, Portuguese, and Chinese. P3 public meeting notices also were translated into Vietnamese because the Fields Corner meeting was held at the VietAID Center as part of the MPO's effort to forge closer ties with specific organizations as a way of facilitating communication with their constituent populations. Although the TE email list is good for reaching many groups quickly, MPO staff sees personal contact as a more effective way to foster meaningful engagement in the future.

# TRANSPORTATION EQUITY AND THE PLANNING PROCESS

The MPO systematically integrates equity concerns into the transportation planning process in a number of ways. At the highest level, equity is part of the MPO's central vision statement, and therefore is reflected in the MPO's goals and objectives. Equity concerns are also integrated by considering feedback from all outreach activities, including TE outreach, and the ongoing public involvement that routinely occurs during development of the LRTP, TIP, UPWP, and other MPO studies.

In addition, equity is one of the factors the MPO considers when selecting studies for the UPWP, and it is integrated into the project selection criteria for the LRTP and TIP. Finally, as discussed below, staff performs equity analyses on the recommended projects in the draft LRTP to evaluate the effects on access, mobility, congestion, and air quality for TE populations, and determine whether the recommendations should be changed before a final LRTP is adopted.

# TRANSPORTATION EQUITY ANALYSES

## *Demographic Analyses*

The MPO analyzes demographic data to identify the geographic locations and concentration of protected populations. This is done to understand their transportation needs relative to existing and planned infrastructure, and to pinpoint areas where public outreach could be most beneficial and fruitful. For this LRTP, the analysis of benefits and burdens (equity analysis) was based on minority and low-income populations, as defined using federal guidance, census data, and geography.

### GEOGRAPHIC LEVEL OF ANALYSIS

The MPO region is divided into 1,943 Transportation Analysis Zones (TAZs) for the purposes of forecasting travel behavior using the MPO's regional travel demand model set. A TAZ is a unit of geography that is defined based on demographic information—population, employment, and housing—and the numbers of trips generated in, and attracted to, it. The full geographic area covered by the MPO's travel demand model set, which also includes municipalities adjacent to the MPO's 101 cities and towns, comprises 2,727 TAZs.

Using TAZ geography and thresholds established through federal guidance, the MPO has developed demographic profiles that identify areas with concentrations of minority and low-income populations for analyzing benefits and burdens. The MPO has also developed demographic profiles for areas with concentrations of LEP residents, the elderly, and people with disabilities. However, the MPO has yet to develop thresholds for these populations to identify specific areas for the purposes of performing an equity analysis.

## MINORITY AND LOW-INCOME THRESHOLDS

### *Minority Populations*

The MPO uses the US Census Bureau's racial and ethnic minority group definitions to determine minority status in the region. The census defines non-minority as persons who identify as white and not Hispanic or Latino. Minorities include:

- American Indian/Alaskan Native
- Asian/Native Hawaiian/Other Pacific Islander
- Black/African American
- Another race or multiple races
- Hispanic/Latino of any race

The FTA Title VI circular (FTA C 4702.1B) defines a predominantly minority area as one where the proportion of minority persons residing in that area exceeds the average proportion of minority persons in the MPO region. Using this definition, a minority TAZ is one in which the minority population is greater than 27.8 percent.

### *Low-Income Populations*

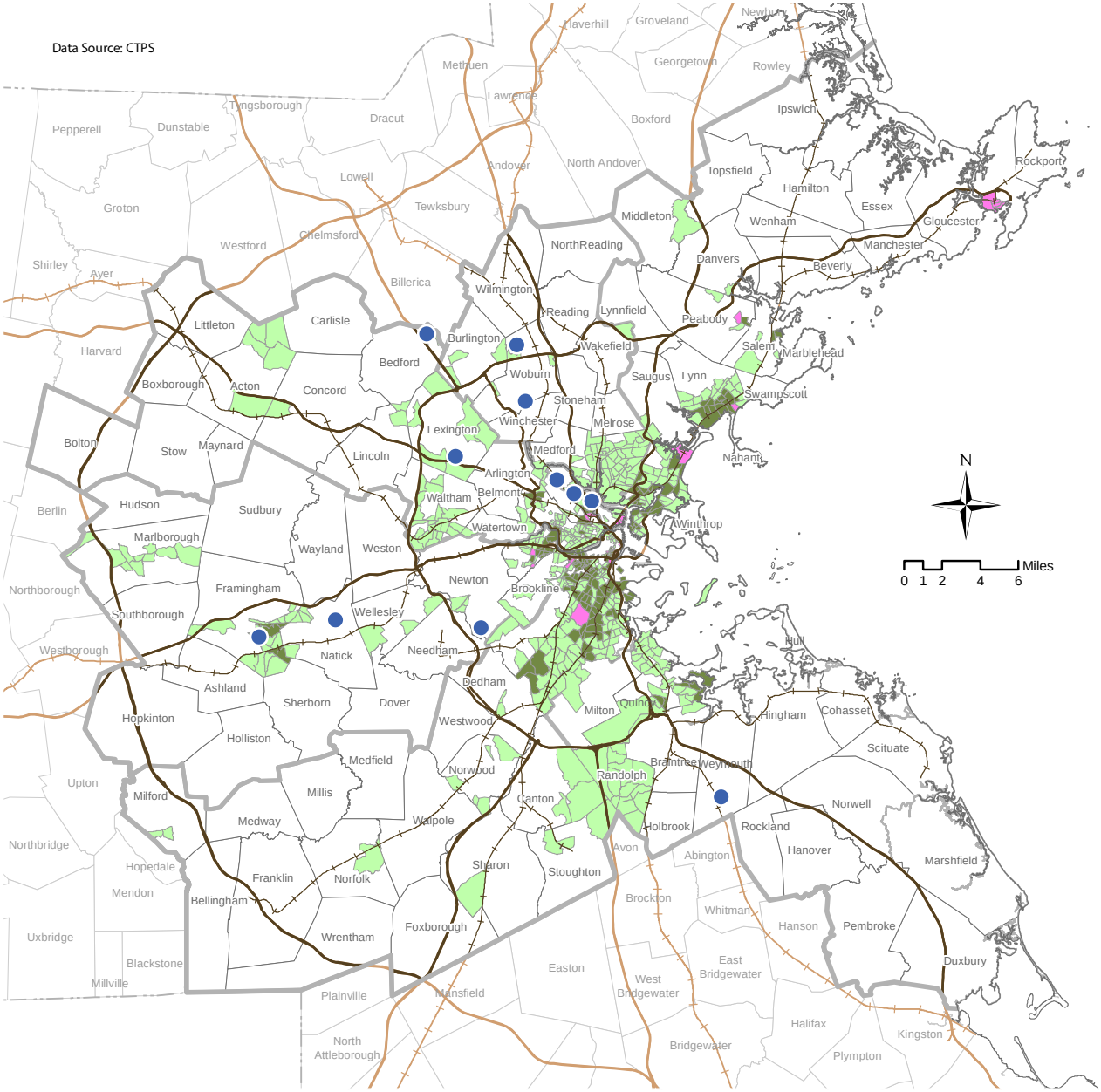
The FTA Title VI circular suggests that a low-income person be defined as one whose median household income is at or below the Department of Health and Human Services' poverty guidelines. However, the circular allows MPOs to develop their own definitions of low-income, as long as their thresholds meet or exceed the federal definition of low-income. The Boston Region MPO defines a low-income person as an individual living in a household with a median income that is less than or equal to 60 percent of the median household income in the MPO region. The MPO chose this threshold, which is higher than federal poverty guidelines, because the cost of living in the MPO region is higher than the national average.

According to the 2010 census, the median MPO household income was $70,829. Therefore, using the MPO's definition, a low-income TAZ is one in which the average median household income is less than or equal to $42,497.

### *Equity Analysis Zones*

The MPO uses the above definitions to identify equity analysis zones—TAZs that meet the threshold for minority and/or low-income—as the basis for its analysis of the benefits and burdens of transportation programs and projects. Figure 7.1 shows the MPO's equity analysis zones, of which 11 percent are low-income TAZs, 33 percent are minority, and 10 percent are both low-income and minority. Also included are the locations of major infrastructure projects recommended in this LRTP. Investments like grounding McGrath

# FIGURE 7.1
# Equity Analysis Zones




**Transportation Analysis Zones (TAZs) That Meet Equity Analysis Zone Criteria***

- Not minority or low-income
- Minority zone
- Low-income zone
- Both low-income and minority
- Plan Project

***Criteria for Equity Analysis Zones under Title VI (2010 Data)**

A TAZ in which the median household income in 2010 was equal to or less than 60% of the MPO median of $70,829 ($42,497) or in which the 2010 population was more than 27.8% minority.

Highway in Somerville, reconstructing Rutherford Avenue in Boston, and improving Route 126 and Route 135 in Framingham will address MPO-identified transportation issues for equity populations. Grounding McGrath will help reconnect two transportation equity areas. Reconstructing Rutherford Avenue will improve community access to the Orange Line and bus terminal and will enhance bus operations. Improving Downtown Framingham will enhance MetroWest Regional Transit Authority service for many low-income and minority riders.

For the purposes of analyzing the transportation system in 2040, the MPO assumed that the distributions of equity analysis zones would remain unchanged, and that the population growth rate for these zones would be the same as that forecast by MAPC for the overall population of the region. Based on these demographic projections, staff used the regional travel demand model set to forecast the unique distributions of trip flows for the differing transportation networks in the 2040 No-Build and Build alternatives.

## *Measuring Impacts*

To determine whether the benefits and burdens of projects, programs, and service are equitably distributed, the MPO has proposed a policy to measure the following types of disparities, in keeping with federal requirements:

- Disparate impact: a facially neutral policy or practice that disproportionately affects members of a group identified by race, color, or national origin, where the policy or practice lacks a substantial legitimate justification and where there exists one or more alternatives that would serve the same legitimate objectives, but with less disproportionate effects on the basis, of race, color, or national origin.
- Disproportionate burden: a neutral policy or practice that disproportionately affects low-income populations more than non-low income populations. A finding of disproportionate burden requires evaluation of alternatives and mitigation of burdens where practicable.

The MPO's proposed policy sets thresholds to distinguish an acceptable level of impact from a level of impact that has a meaningful effect for the factors analyzed. For LRTP equity analyses that are completed using the regional travel demand model set, the MPO has proposed the following thresholds:

- A disparate burden would exist if minority TAZs were projected to sustain more than 20 percent additional burden than nonminority TAZs. Therefore, a projected burden would be found if the analysis results for minority TAZs were more than 1.2 times the projected burden for nonminority TAZs.
- A disproportionate burden would exist if low-income TAZs were projected to sustain more than 20 percent additional burden than non-low-income TAZs. Therefore, a projected burden would be found if the analysis results for low-income TAZs were more than 1.2 times the projected burden for non-low-income TAZs.

- A disparate benefit would exist if minority TAZs were projected to receive less than 80 percent of the benefit that nonminority TAZs receive. Therefore, a projected benefit would be found if the analysis results for minority TAZs were more than 0.80 times the projected burden for nonminority TAZs.
- A disproportionate benefit would exist if low-income TAZs were projected to receive less than 80 percent of the benefits that non-low-income TAZs receive. Therefore, a projected benefit would be found if the analysis results for low-income TAZs were less than 0.80 times the projected burden for nonminority TAZs.

Staff proposed a 20 percent threshold based on the belief that a 10 percent differential would be meaningful, plus the model's 10 percent margin of error. The full disparate impact/disproportionate burden policy will undergo public review and comment before it is adopted by the MPO.

## *Equity Analysis Methods*

MPO staff used the travel demand model to perform two types of equity analyses (discussed below) each of which calculated differences between the No-Build and Build[1] alternatives for equity analysis zones (minority TAZs and low-income TAZs) and the difference for non-equity analysis zones (nonminority TAZs and non-low-income TAZs). For each analysis, the rate of change from the No-Build to the Build alternatives was compared for minority versus nonminority TAZs to determine whether there was a disparate impact and for low- versus non-low-income TAZs to determine whether there was a disproportionate burden.

For the 2040 Build alternative, only major infrastructure projects (those on the recommended list of projects discussed in Chapter 5 and shown in Figure 7.1) were modeled. Specific projects in the O&M-type investment programs are not identified in the LRTP, as they will be selected through the TIP programming process. Because most bike and pedestrian improvements will be part of the O&M-type investment programs, they were not captured in the LRTP equity analysis. However, the TIP project-selection process seeks to minimize burdens and maximize benefits for protected populations, and many projects in the TIP go through the National Environmental Policy Act (NEPA) process, which includes an EJ evaluation.

### ACCESSIBILITY ANALYSIS

For the purposes of this analysis, accessibility was based on both the ability to reach desired destinations and the ease of doing so. This analysis investigated the number of employment opportunities, health care facilities, and higher education facilities that could be reached from equity analysis zones and non-equity analysis zones along with average

1 The No-Build alternative includes projects that are currently under construction, advertised for construction, or programmed in the first year of the 2015-2018 TIP. The Build alternative includes the projects that are recommended in this LRTP.

transit and highway travel times to these destinations. Analysis of transit travel times included destinations within a 40-minute transit trip, while analysis of highway travel times included destinations within a 20-minute auto trip.

Staff used the following factors to examine differences in accessibility between the 2040 No-Build network and the 2040 Build network:

- Average travel time to industrial, retail, and service jobs within a 40-minute transit trip and a 20-minute auto trip
- Number of industrial, retail, and service jobs within a 40-minute transit trip and a 20-minute auto trip
- Average travel time to hospitals, weighted by number of beds, within a 40-minute transit trip and a 20-minute auto trip
- Number of hospitals, weighted by number of beds, within a 40-minute transit trip and a 20-minute auto trip
- Average travel time to two- and four-year institutions of higher education, weighted by enrollment, within a 40-minute transit trip and a 20-minute auto trip
- Number of two- and four-year institutions of higher education, weighted by enrollment, within a 40-minute transit trip and a 20-minute auto trip

## MOBILITY, CONGESTION, AND AIR-QUALITY ANALYSIS

For the purposes of this analysis, mobility is defined as the ability to move from place to place, and congestion is defined as the level at which transportation system performance becomes unacceptable because of traffic congestion. The MPO's mobility and congestion analysis focused on the average door-to-door travel time and average vehicle-miles traveled (VMT) under congested conditions. The air quality-analysis focused on carbon monoxide, a pollutant that results primarily from incomplete combustion of fossil fuels and accumulates in localized areas creating hot spots that negatively affect human health.

Staff used the following mobility, congestion, and air-quality factors in the equity analysis:

- VMT per square mile – number of vehicle-miles traveled (VMT) per square mile of dry land within a TAZ
- Congested VMT – the volume of vehicle-miles traveled within a TAZ on highway links with a volume-to capacity ratio of 0.75 or higher
- Carbon monoxide (CO) per square mile – the number of kilograms of carbon monoxide emitted per square mile of dry land within a TAZ
- Transit production time[2] – average door-to-door travel time for all transit trips produced in the TAZ

2 Productions and attractions are used in transportation modeling to identify types of trip ends and are loosely related to origins and destinations.

- Highway production time – average door-to-door travel time for all highway trips produced in the TAZ
- Transit attraction time – average door-to-door travel time for all highway trips attracted to the TAZ
- Highway attraction time – average door-to-door travel time for all highway trips attracted to the TAZ

# TRANSPORTATION EQUITY ANALYSIS RESULTS

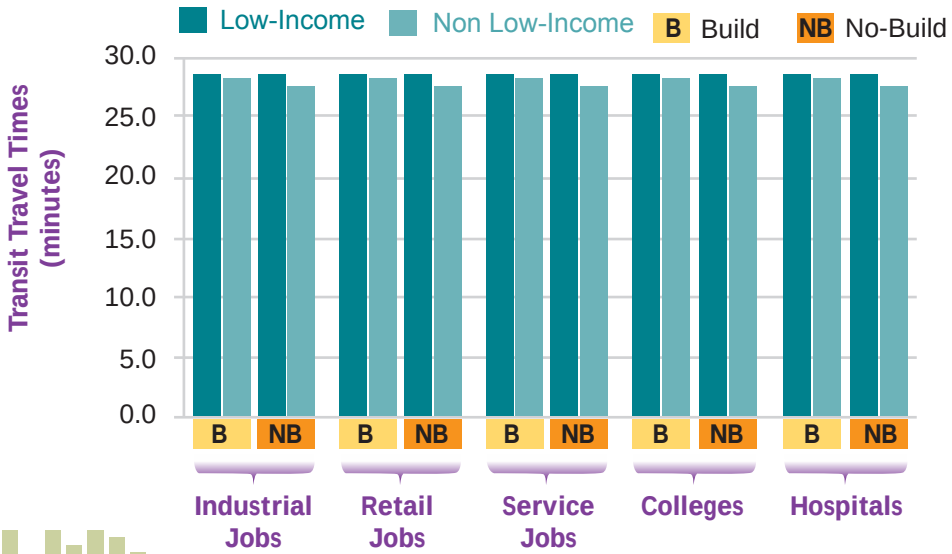
## *Accessibility Results*

The accessibility analysis first compared the change in transit and highway travel times to various types of employment between the 2040 No-Build and Build alternatives for low-income, non-low-income, minority, and nonminority TAZs, respectively.

The second part of the accessibility analysis compared the ratio of the change from the 2040 No-Build to the Build alternative for low-income versus non-low-income TAZs to determine whether there was a disproportionate burden, and for minority versus nonminority TAZs to determine whether there was a disparate impact for each type of employment evaluated. The results of the accessibility analyses are illustrated in the following figures and tables.

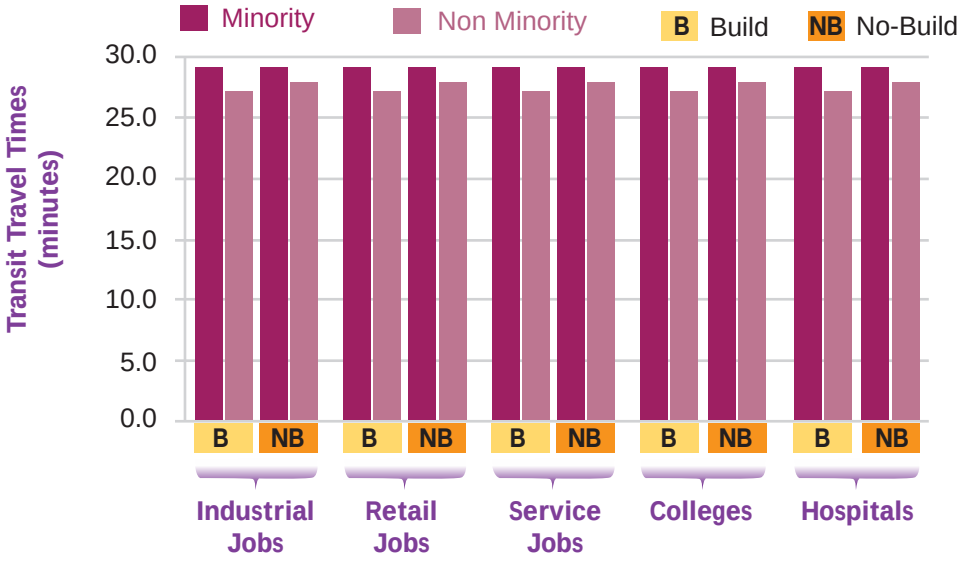
Figures 7.2 and 7.3 show that average transit travel times to employment destinations are lower for non-low-income and non-minority TAZs than for low-income and minority TAZs, respectively; but the changes for each type of equity analysis zone between the 2040 No-Build and Build alternatives are not statistically significant.

**FIGURE 7.2**
**Average Transit Travel Times to Destinations for Equity Analysis Zones (Low-Income) in the 2040 No-Build and 2040 Build Networks**




Source: Central Transportation Planning Agency.

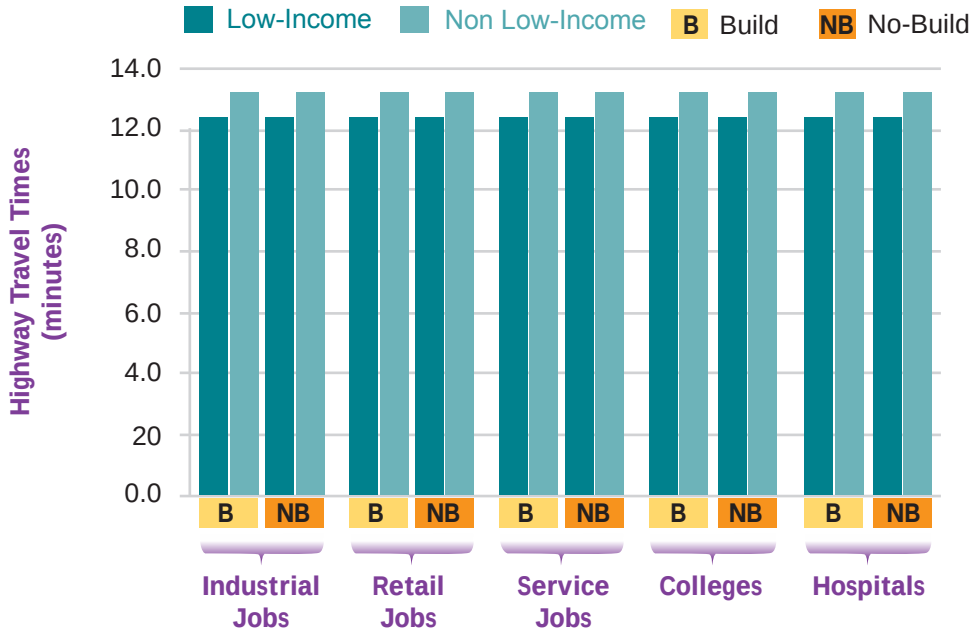
## FIGURE 7.3
## Average Transit Travel Times to Destinations for Equity Analysis Zones (Minority) in the 2040 No-Build and 2040 Build Networks




Source: Central Transportation Planning Agency.

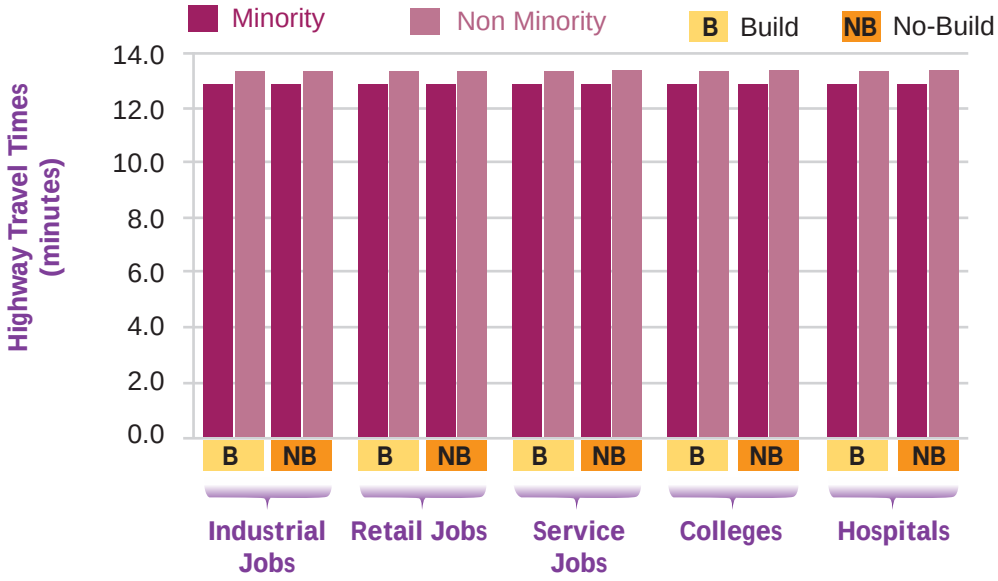
Figures 7.4 and 7.5 show that average highway travel times to employment destinations are slightly lower for low-income and minority TAZs than for non-low-income and non-minority TAZs, respectively, but the changes for each type of equity analysis zone between the 2040 No-Build and Build alternatives are not statistically significant.

## FIGURE 7.4
## Average Highway Travel Times to Destinations for Equity Analysis Zones (Low-Income) in the 2040 No-Build and 2040 Build Networks




Source: Central Transportation Planning Agency.

## FIGURE 7.5
## Average Highway Travel Times to Destinations for Equity Analysis Zones (Minority) in the 2040 No-Build and 2040 Build Networks




Source: Central Transportation Planning Agency.

Tables 7.1 and 7.2 show that there are neither disproportionate burdens nor disparate impacts in average transit and highway travel times to employment destinations, as all differences fall within the MPO's disproportionate burden/disparate impact threshold.

## TABLE 7.1
## Benefits and Burdens Analysis for Average Transit Travel Times to Employment Destination Types

| | No-Build | Build | Pct. Travel-Time Increase | No-Build | Build | Pct. Travel-Time Increase | No-Build | Build | Pct. Travel-Time Increase[a] |
|---|---|---|---|---|---|---|---|---|---|
| | Industrial | | | Retail | | | Service | | |
| **Population** | | | | | | | | | |
| Low-Income | 28.7 | 28.7 | 0.0% | 28.7 | 28.7 | 0.0% | 28.7 | 28.7 | 0.0% |
| Non Low-Income | 28.3 | 28.3 | 0.0% | 28.3 | 28.3 | 0.0% | 28.3 | 28.3 | 0.0% |
| Ratio | -- | -- | 0.00 | -- | -- | 0.00 | | | 0.00 |
| Burden Threshold | -- | -- | -- | -- | -- | | | | >1.20 |
| **Result: No Disproportionate Burden** | | | | | | | | | |
| **Population** | | | | | | | | | |
| Minority | 29.1 | 29.1 | 0.0% | 29.1 | 29.1 | 0.0% | 29.1 | 29.1 | 0.0% |
| Non-Minority | 28.0 | 28.0 | 0.0% | 28.0 | 28.0 | 0.0% | 28.0 | 28.0 | 0.0% |
| Ratio | -- | -- | 0.00 | -- | -- | 0.00 | -- | | 0.00 |
| Burden Threshold | -- | -- | -- | -- | -- | -- | | | >1.20 |
| **Result: No Disparate Impact** | | | | | | | | | |

[a]All changes are within the model's margin of error.
Source: Central Transportation Planning Agency.

## TABLE 7.2
## Benefits and Burdens Analysis for Average Highway Travel Times to Employment Destination Types

| | Industrial | | | Retail | | | Service | | |
|---|---|---|---|---|---|---|---|---|---|
| | No-Build | Build | Pct. Travel-Time Increase | No-Build | Build | Pct. Travel-Time Increase | No-Build | Build | Pct. Travel-Time Increase[a] |
| **Population** | | | | | | | | | |
| Low-Income | 12.4 | 12.4 | 0.0% | 12.4 | 12.4 | 0.0% | 12.4 | 12.4 | 0.0% |
| Non Low-Income | 13.2 | 13.2 | 0.0% | 13.2 | 13.2 | 0.0% | 13.2 | 13.2 | 0.0% |
| Ratio | -- | -- | 0.00 | -- | -- | 0.00 | | | 0.00 |
| Burden Threshold | -- | -- | -- | -- | -- | | | | >1.20 |
| **Result: No Disproportionate Burden** | | | | | | | | | |
| **Population** | | | | | | | | | |
| Minority | 12.9 | 12.9 | 0.0% | 12.9 | 12.9 | 0.0% | 12.9 | 12.9 | 0.0% |
| Non-Minority | 13.3 | 13.3 | 0.0% | 13.3 | 13.3 | 0.0% | 13.3 | 13.3 | 0.0% |
| Ratio | -- | -- | 0.00 | -- | -- | 0.00 | -- | | 0.00 |
| Burden Threshold | -- | -- | -- | -- | -- | -- | | | >1.20 |
| **Result: No Disparate Impact** | | | | | | | | | |

[a]All changes are within the model's margin of error
Source: Central Transportation Planning Agency.

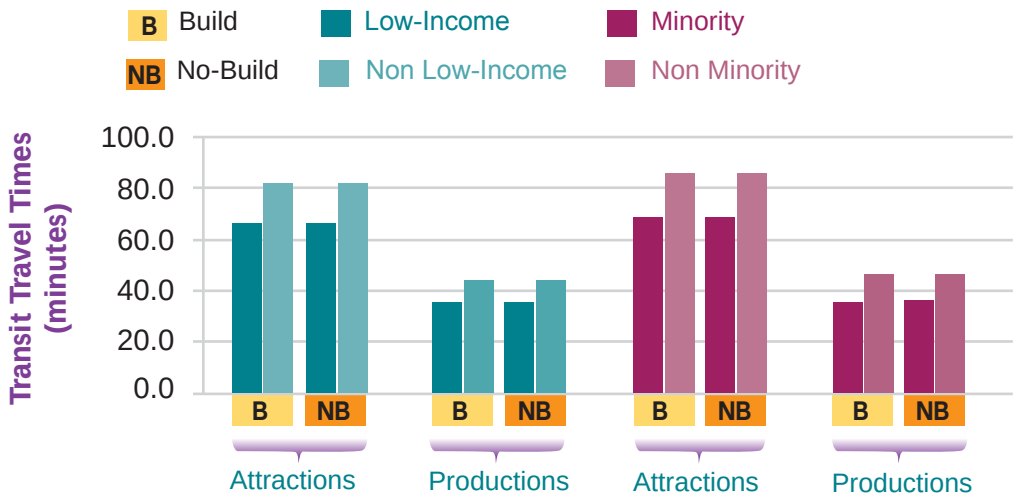
## *Mobility and Congestion Results*

The mobility and congestion analyses first compared the change in average door-to-door travel time, congested VMT, and VMT per square mile for all transit and highway trips produced in, or attracted to, equity analysis zones between the 2040 No-Build and Build alternatives for low-income, non-low-income, minority, and nonminority TAZs, respectively.

The second part of the mobility and congestion analysis compared the ratio of the change from the 2040 No-Build to the Build alternatives for low- versus non-low-income TAZs to determine whether there was a disproportionate burden, and for minority versus nonminority TAZs to determine whether there was a disparate impact for each of the factors evaluated. The results of the mobility and congestion analyses are illustrated in the following figures and tables.

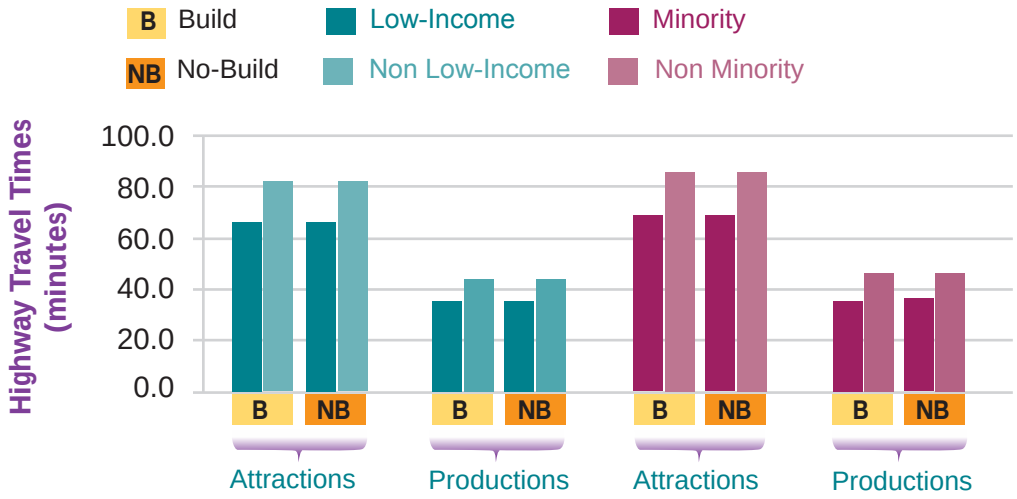
Figures 7.6 and 7.7 show that average transit and highway travel times for attractions and productions are shorter for low-income and minority TAZs than for non-low-income and non-minority TAZs, respectively, in both alternatives; but the changes for each type of equity analysis zone between the 2040 No-Build and Build alternatives are not statistically significant.

## FIGURE 7.6
## Average Transit Travel Times for Equity Analysis Zones in the 2040 No-Build and 2040 Build Networks




Source: Central Transportation Planning Agency.

## FIGURE 7.7
## Average Highway Travel Times for Equity Analysis Zones in the 2040 No-Build and 2040 Build Networks




Source: Central Transportation Planning Agency.

Tables 7.3 and 7.4 show that there are neither disproportionate burdens nor disparate impacts in average transit and highway travel times.

## TABLE 7.3
## Benefits and Burdens Analysis for Average Transit Travel Time

| | No-Build | Build | No-Build | Build | Percentage Travel-Time Increase [a] |
|---|---|---|---|---|---|
| | Attractions | | Productions | | |
| **Population** | | | | | |
| Low-Income | 63.8 | 65.0 | 34.3 | 35.0 | 1.8% |
| Non Low-Income | 74.0 | 75.2 | 39.8 | 40.5 | 1.6% |
| Ratio | | | | | 1.14 |
| Burden Threshold | | | | | >1.20 |
| **Result: No Disproportionate Burden** | | | | | |
| **Population** | | | | | |
| Minority | 66.4 | 67.6 | 35.8 | 36.4 | 1.8% |
| Non-Minority | 76.1 | 77.3 | 41.0 | 41.6 | 1.6% |
| Ratio | | | | | 1.15 |
| Burden Threshold | | | | | >1.20 |
| **Result: No Disparate Impact** | | | | | |

[a] All changes are within the model's margin of error.
Source: Central Transportation Planning Agency.

## TABLE 7.4
## Benefits and Burdens Analysis for Average Highway Travel Time

| | No-Build | Build | Percentage Travel-Time Increase | No-Build | Build | Percentage Travel-Time Increase [a] |
|---|---|---|---|---|---|---|
| | Attractions | | | Productions | | |
| **Population** | | | | | | |
| Low-Income | 66.4 | 66.5 | 0.0% | 35.7 | 35.8 | 0.0% |
| Non Low-Income | 82.2 | 82.3 | 0.1% | 44.2 | 44.3 | 0.1% |
| Ratio | | | 0.35 | | | 0.35 |
| Burden Threshold | | | | | | >1.20 |
| **Result: No Disproportionate Burden** | | | | | | |
| **Population** | | | | | | |
| Minority | 69.5 | 69.5 | 0.0% | 35.8 | 36.4 | 1.8% |
| Non-Minority | 86.1 | 86.1 | 0.0% | 46.3 | 46.4 | 0.1% |
| Ratio | | | 0.00 | | | 1.13 |
| Burden Threshold | | | | | | >1.20 |
| **Result: No Disparate Impact** | | | | | | |

[a] All changes are within the model's margin of error.
Source: Central Transportation Planning Agency.

Figures 7.8 and 7.9 show that average VMT per square mile is greater for low-income and minority TAZs than for non-low-income and non-minority TAZs, respectively, for

both alternatives, and that average congested VMT is less for low-income and minority TAZs than for non-low-income and non-minority TAZs, respectively, for both alternatives. However, the changes for each type of equity analysis zone between the 2040 No-Build and Build alternatives are not statistically significant.

## FIGURE 7.8
## Average VMT for Equity Analysis Zones in the 2040 No-Build and 2040 Build Networks




Source: Central Transportation Planning Agency.

## FIGURE 7.9
## Average Congested Vehicle Miles Traveled for Equity Analysis Zones in the 2040 No-Build and 2040 Build Networks




Source: Central Transportation Planning Agency.

Tables 7.5 and 7.6 show disproportionate burdens and disparate impacts for average VMT, and a disproportionate burden for congested VMT. However, because the changes between the 2040 No-Build and Build alternatives for each type of equity/non-equity analysis zone comparison are within the margin of error of the model, it is unlikely that the ratio of the changes is meaningful.

The MPO will carefully monitor these possible burdens and impacts over time and, if necessary, address them at the program level through the TIP project selection process and equity analyses.

## TABLE 7.5
## Average Vehicle Miles Traveled

| | No-Build | Build | Percentage Increase [a] |
|---|---|---|---|
| **Population** | | | |
| Low-Income | 261,156 | 263,048 | 0.72% |
| Non Low-Income | 146,043 | 145,905 | -0.09% |
| Ratio | | | -7.66 |
| Burden Threshold | | | >1.20 |
| **Result: Disproportionate Burden [b]** | | | |
| **Population** | | | |
| Minority | 196,710 | 197,452 | 0.38% |
| Non-Minority | 139,224 | 138,973 | -0.18% |
| Ratio | | | -2.09 |
| Burden Threshold | | | >1.20 |
| **Result: Disparate Impact [b]** | | | |

[a] All changes are within the model's margin of error.
[b] Because the changes themselves are within the margin of error of the model, this comparison probably does not show a meaningful difference.
Source: Central Transportation Planning Agency.

## TABLE 7.6
## Benefits and Burdens Analysis for Congested Vehicle Miles Travelled

| | No-Build | Build | Percentage Increase [a] |
|---|---|---|---|
| **Population** | | | |
| Low-Income | 12,493 | 12,832 | 2.72% |
| Non Low-Income | 28,843 | 29,103 | 0.90% |
| Ratio | | | 3.01 |
| Burden Threshold | | | >1.20 |
| Result: Disproportionate Burden [b] | | | |
| **Population** | | | |
| Minority | 18,761 | 18,961 | 1.07% |
| Non-Minority | 31,266 | 31,569 | 0.97% |
| Ratio | | | 1.10 |
| Burden Threshold | | | >1.20 |
| Result: No Disparate Impact | | | |

[a] All changes are within the model's margin of error.
[b] Because the changes themselves are within the margin of error of the model, this comparison probably does not show a meaningful difference.
Source: Central Transportation Planning Agency.

### *Air Quality Results*

Carbon monoxide emissions are essentially the same in the 2040 build network as in the 2040 No-Build network for all zones.

## FUTURE TRANSPORTATION EQUITY ANALYSES

Although the equity analyses conducted for this LRTP look only at impacts on minority and low-income populations, the MPO plans to increase the number of protected populations covered in the future. The FHWA Title VI/Nondiscrimination Program requires MPOs also to consider and analyze equity impacts based on age, sex, and disability. In the coming year, staff will investigate data sources and analytical techniques to determine the most effective and appropriate ways to incorporate these populations into equity analyses.

In addition, the FFY 2016 UPWP will fund a study to evaluate methods for performing more sophisticated equity analyses on the TIP. Such analyses would help to ensure the equitable distribution of benefits and burdens for projects that are not individually listed in the LRTP because they will be funded through O&M-type programs and will be selected through TIP programming.

# 8 AIR-QUALITY CONFORMITY DETERMINATION AND GREENHOUSE GAS ANALYSIS

## INTRODUCTION

This chapter presents information about the air quality analyses that are required by both federal and state legislation. The first section discusses analysis results of the air-quality conformity determination for projects in the LRTP, as required by federal regulations (40 CFR Part 93) and Massachusetts Conformity Regulations (310 CMR 60.03). It specifically addresses carbon monoxide emissions in the required maintenance area (see description below). The second section outlines the legislation and regulations requiring carbon dioxide ($CO_2$) emission reductions by the MPO as required by the Massachusetts Global Warming Solutions Act and it's requirements for the Transportation Sector and the Massachusetts Department of Transportation (310 CMR 60.05). It specifically addresses emissions of carbon dioxide at the state level.

## AIR-QUALITY CONFORMITY DETERMINATION

### *Introduction*

The 1990 Clean Air Act Amendments (CAAA) require metropolitan planning organizations within nonattainment and maintenance areas to perform air-quality conformity determinations prior to the approval of LRTPs and TIPs, and at such other times as required by regulation. A nonattainment area is one that the United States Environmental Protection Agency (EPA) has designated as not meeting certain air-quality standards. A maintenance area is a nonattainment area that now meets the standards and has been redesignated as maintaining the standard. A conformity determination is a demonstration that a region's plans, programs, and projects are consistent with the State Implementation Plan (SIP) for attaining the air-quality standards. The CAAA requirement to perform a conformity determination ensures that federal approval and funding go to transportation activities that are consistent with air-quality goals. In addition to containing analyses of the air-quality conformity determination for the projects in the LRTP, this section also includes the regulatory framework, conformity requirements, planning assumptions, mobile-source emission budgets, and conformity consultation procedures related to the determination.

## LEGISLATIVE BACKGROUND

The 1970 Clean Air Act defined a one-hour national ambient air-quality standard (NAAQS) for ground-level ozone. The 1990 CAAA further classified degrees of nonattainment of the one-hour standard based on the severity of monitored levels of the pollutant. The entire commonwealth of Massachusetts was classified as being in serious nonattainment for the one-hour ozone standard, with a required attainment date of 1999; this was later extended first to 2003, then to 2007.

In 1997, the EPA proposed a new, eight-hour ozone standard to replace the one-hour standard, effective June 15, 2005. Research shows that ozone can affect human health at lower levels than previously thought, and for longer exposure times than one hour. The new standard was challenged in court, and after a lengthy legal battle; the courts upheld the standard, which was finalized in June 2004. The eight-hour standard is 0.08 parts per million (ppm), averaged over eight hours and not to be exceeded more than once per year. Nonattainment areas were again further classified based on the severity of eight-hour values. Massachusetts as a whole was classified as being in moderate nonattainment for the eight-hour standard, but it was separated into two nonattainment areas—Eastern Massachusetts and Western Massachusetts.

The Eastern Massachusetts Ozone Nonattainment Area included all of Barnstable, Bristol, Dukes, Essex, Middlesex, Nantucket, Norfolk, Suffolk, and Worcester counties. Because of this nonattainment classification, the CAAA required the Commonwealth to reduce its emissions of volatile organic compounds (VOCs) and nitrogen oxides (NOx), the two major precursors of ozone formation, to achieve attainment of the eight-hour ozone standard by 2009.

In addition, on April 1, 1996, the cities of Boston, Cambridge, Chelsea, Everett, Malden, Medford, Quincy, Revere, and Somerville were classified as being in attainment for carbon monoxide (CO) emissions. As part of the LRTP, an air-quality conformity analysis still must be completed for these communities, as they have a carbon monoxide maintenance plan approved as part of the SIP. The 2010 CO motor-vehicle emission budget established for the Boston CO attainment area with a maintenance plan is 228.33 tons of CO per winter day.

As of April 22, 2002, the community of Waltham was re-designated as being in attainment for CO, with an EPA-approved limited-maintenance plan. In areas that have approved limited-maintenance plans, federal actions requiring conformity determinations under the transportation conformity rule are considered to satisfy the “budget test” (since budgets are not treated as being constraining in these areas for the length of the initial maintenance period). Any requirements for future “project-level” conformity determinations for projects located within this community will continue to use a “hot-spot” analysis to ensure that any new transportation projects in this CO attainment area do not cause or contribute to CO nonattainment.



In March 2008, EPA published revisions to the eight-hour ozone NAAQS that established a level of 0.075 ppm in the Federal Register (FR) (March 27, 2008; 73 FR 16483). In 2009, the EPA announced it would reconsider this standard because it fell outside of the range recommended by the Clean Air Scientific Advisory Committee. However, the EPA never took final action on the reconsideration so the standard would remain at 0.075 ppm. After reviewing data from Massachusetts monitoring stations, the EPA sent a letter on December 16, 2011, proposing that only Dukes County would be designated as being in nonattainment for the new, proposed 0.075 ozone standard. Massachusetts concurred with these findings.

On Monday, May 21, 2012, the final rule (77 FR 30088) was published in the Federal Register, defining the 2008 NAAQS at 0.075 ppm, the standard that was promulgated in March 2008. A second rule (77 FR 30160), published on May 21, 2012, revoked the 1997 ozone NAAQS, which was to become effective one year after the 2008 NAAQS became effective (July 20, 2012). Also on Monday, May 21, 2012, the air-quality designation areas for the 2008 NAAQS were published in the Federal Register. In this Federal Register, the only area in Massachusetts that was designated as being in nonattainment for ozone was Dukes County. All other counties were classified as unclassifiable/attainment. Therefore, the Boston Region MPO is not required to perform a conformity determination for ozone for this LRTP.

All the Massachusetts MPOs and MassDOT continue to meet the requirements of air quality conformity according to the Code of Federal Regulations, and as evaluated through inter-agency consultation. Specifically:

On March 6, 2015, (80 FR 12264, effective April 6, 2015) EPA published the Final Rulemaking, “Implementation of the 2008 National Ambient Air Quality Standards (NAAQS) for Ozone: State Implementation Plan Requirements; Final Rule.” This rulemaking removed transportation conformity to the 1997 Ozone NAAQS (the standard was the subject of a 12/23/14 DC Circuit Court decision).

Link to Final EPA Rulemaking: http://www.gpo.gov/fdsys/pkg/FR-2015-03-06/pdf/2015-04012.pdf

Since the RTPs have been developed, reviewed, and will be approved after April 6, 2015, air quality conformity determinations to the 1997 Ozone NAAQS are no longer required, as those standards and all associated area designations have been permanently

replaced by the 2008 NAAQS, which (with actually a stricter level of allowable ozone concentration than the 1997 standards) no longer designate Massachusetts as a non-attainment area(s) for ozone except for Dukes County as discussed above.

Through the Interagency air quality consultation process (involving U.S. DOT, EPA, DEP, MassDOT, and the MPOs) the latest EPA rulemakings, the referenced court decision, ozone standards and area designations were all reviewed. Specific transportation conformity requirements in Massachusetts for this LRTP are as follows:

- No conformity determination is required for the 2008 Ozone NAAQS, as Dukes County (the only designated non-attainment area) is classified as an "isolated rural nonattainment area" and therefore only needs to evaluate transportation conformity when the Martha Vineyard Commission has a "regionally significant" project that would trigger conformity.
- The Boston carbon monoxide attainment area with a current maintenance plan in place (with a carbon monoxide motor vehicle emission budget) will prepare a carbon monoxide air quality analysis for the Boston Area (see below).
- The Lowell, Waltham, Worcester and Springfield Areas are classified attainment with a limited maintenance plan in place. No regional air quality analysis is required in limited maintenance plan areas as emissions may be treated as essentially not constraining for the length of the maintenance period because it is unreasonable to expect that such areas will experience so much growth in that period that a violation of the carbon monoxide NAAQS would result. Therefore, in areas with approved limited maintenance plans, Federal actions requiring conformity determinations under the transportation conformity rule are considered to satisfy the "budget test." All other transportation conformity requirements under 40 CFR 93.109(b) continue to apply in limited maintenance areas, including project level conformity determinations based on carbon monoxide hot spot analyses under 40 CFR 93.116.

In addition, the MPO is required to implement the SIP's transportation control measures (for example, the Central Artery/Tunnel (CA/T) project mitigation commitments).

In consideration of the comments received during the public comment period of this LRTP, combined with MassDOT's greenhouse gas (GHG) reporting requirements for the Commonwealth's Global Warming Solutions Act (310 CMR 60.05), MassDOT will conduct a "conformity-related" emissions analysis for ozone precursors, consistent with the 1997 NAAQS standards (currently superseded by the 2008 NAAQS). This emissions analysis will be for informational purposes only (as it is currently NOT federally required), and will be contained in a separate air quality document (also to include GHG emissions analysis, as discussed below) that will be completed at the end of August 2015 – the results of which will then be available to the MPOs, the Massachusetts Executive Office of Energy and Environmental Affairs (and affiliate agencies), and all other interested parties.

## CONFORMITY REGULATIONS

Designated MPOs are required to perform conformity determinations by nonattainment or maintenance area for their LRTPs and TIPs. Section 176 of the CAAA defines conformity to a SIP as conforming to the plan's purpose of eliminating or reducing the severity and number of violations of the NAAQS and achieving expeditious attainment of standards. Regarding the activities outlined in the LRTP and TIP, the Boston Region MPO must certify that no activity will:

- Cause or contribute to any new violation of any standard in any area
- Increase the frequency or severity of any existing violation of any standard in any area
- Delay the timely attainment of any standard or any required interim emission reductions or other milestones in any area

The EPA issued final conformity regulations in the November 24, 1993, Federal Register, and the Massachusetts Department of Environmental Protection (DEP) issued conformity regulations that became effective December 30, 1994. They stated requirements for determining conformity of LRTPs, TIPs, and individual projects. The federal conformity regulations were amended several times through August 2010. Components of the required conformity analysis are listed below and are explained in detail subsequently.

- Conformity Criteria
- Horizon years
- Latest planning assumptions
- Latest emission model used
- Timely implementation of transportation control measures (TCMs)
- Conformity in accordance with consultation procedures and SIP revisions
- Public participation procedures
- Financially constrained document

### *Procedures for Determining Regional Transportation Emissions: The Conformity Test*

The conformity test must be consistent with emission budgets described in the SIP. This conformity determination will show the LRTP's consistency with the CO emission budget for the Boston, Cambridge, Chelsea, Everett, Malden, Medford, Quincy, Revere, and Somerville maintenance areas.

## *Conformity Determination Criteria*

This conformity determination has been prepared in accordance with 40 CFR Part 93, Transportation Conformity Rule Amendments: Flexibility and Streamlining: Final Rule. It shows that the LRTP has been prepared following all guidelines and requirements of the Rule.

### HORIZON YEAR REQUIREMENTS

The horizon years for regional model analysis were established to comply with 40 CFR 93.106(a) of the Federal Conformity Regulations. Listed below are the years for which emissions are calculated:

- 2020 – Milestone Year and Analysis Year: Used to show conformity with the CO budget in the Boston nonattainment area
- 2030 – Analysis Year
- 2040 – Horizon Year: Last forecast year of the LRTP

### LATEST PLANNING ASSUMPTIONS

Section 93.110 of the Federal Conformity Regulations outlines requirements for the most recent planning assumptions that must be in place at the time of conformity determination. Assumptions must be derived from current estimates and future projections of population, household, employment, travel, and congestion data developed by the MPO staff. Analysis for the LRTP is based on US census data and information obtained from MAPC, MassDOT, and other sources. Listed below are the sources of data used for model calibration in this analysis:

- Population, households, and household size: Year 2010 data at a community level received from the US Census Bureau. Community to TAZ-level distribution is based on Census 2010 allocation.
- Employment: MAPC purchased employment data from a commercial vendor, InfoUSA, and shared it with CTPS. InfoUSA uses a firm-based, multi-tiered, serial collection and update method. The InfoUSA 2010 dataset represented a base upon which CTPS built an employment database referred to as the Eastern Massachusetts Site-Level Employment Database for 2010. CTPS classifies employment data into three types: basic, retail, and service.
- Household income, resident workers, and vehicle ownership: Data was obtained from Summary File 3 data for Massachusetts from the 2010 US Census of Population and Housing.
- Household workers: 2010 data were obtained from Census Transportation Planning Package Part 1 for Massachusetts from the 2010 US Census of Population and Housing.

- Traffic volumes: Roadway volume counts and some speed data have been collected. Highway traffic volume data is obtained from MassDOT 2010 Traffic Volumes for the Commonwealth of Massachusetts. Traffic counts taken for external stations and screen lines were used.
- Population, household, and employment forecasts: Population, households and employment by type are major inputs to the future-year travel-model process, as they are variables upon which trip generation is based. The land-use scenario for the forecast years is developed in cooperation with MAPC and MassDOT. Forecasts of households and employment for 101 cities and towns in the Boston Region MPO and for the 63 cities and towns outside of the Boston Region MPO were developed by MAPC in close coordination with MassDOT. An assumption using these forecasts seeks to channel regional growth and development by targeting the majority of growth to denser areas with already available water, sewer, and transit infrastructure. This scenario assumes that a greater percentage of residents will be living within walking distance of transit facilities and major activity centers.
- Project-level data: Obtained from the responsible implementing agency.

## TRANSIT SERVICE POLICY ASSUMPTIONS

The transit service assumptions used in ridership modeling for the LRTP were based on MBTA service in the spring of 2012. The model calibration was performed using the following data:

- Ridership and Service Statistics, MBTA Blue Book, 2012
- MBTA Systemwide Passenger Survey, 2008–09

## EMISSION INVENTORY ASSUMPTIONS

For the LRTP, conformity is determined in relation to the SIP mobile-source CO emission projections that have been set for the nine cities in the Boston area that are classified as being in attainment for CO. An emissions attainment inventory for CO of 501.53 tons per winter day was established for all sources of CO emissions (mobile, industrial, and all other sources) for the re-designation year 1993. Of the 501.53 tons, 305.43 tons per winter day were allocated for mobile sources. In addition to the attainment year inventory, the EPA required that emissions projections for every five years through 2010 be developed for all sources to ensure that the combination of all CO emissions would not exceed the 501.53 tons per winter day maximum allowance in the future. The mobile-source emissions projection of 228.33 tons per winter day was set for 2010. Emissions from those nine towns in the Boston area may not exceed the amount in the last year of the maintenance plan (2010).

The Boston Region MPO estimated results for the nine towns collectively using the Boston Region MPO's regional travel demand model set, based on the latest planning assumptions for the conformity analysis.

## LATEST EMISSIONS MODEL

Factors used for calculating emissions changes were determined using the EPA's latest emissions model, Motor Vehicle Emissions Simulator (MOVES) 2014. Emission factors for motor vehicles are specific to each model year, pollutant type, temperature, and travel speed. MOVES 2014 requires a wide range of input parameters, including inspection and maintenance program information and other data, such as fuel formulation and supply, speed distribution, vehicle fleet mix, and fleet age distribution. Inputs used for 2020 through 2040 were received from the DEP; and include information about programs that were submitted to the EPA as the strategy for the Commonwealth to attain ambient air-quality standards.

## TIMELY IMPLEMENTATION OF TRANSPORTATION CONTROL MEASURES

Transportation control measures (TCMs) were required in the SIP in revisions submitted to the EPA in 1979 and 1982 and in those submitted as part of the CA/T project. The TCMs included in the 1979 and 1982 submissions were accomplished through construction or implementation of ongoing programs.

The TCMs submitted as part of the CA/T project mitigation have been included in the conformity of the LRTP as recommended or completed projects with the exception of the following three projects:

- Completion of a final design of the Red Line–Blue Line Connector from the Blue Line at Government Center to the Red Line at Charles Station
- Fairmount Line Improvements
- Enhanced Green Line extended beyond Lechmere Station to Medford Hillside and Union Square

MassDOT worked with the DEP to address these projects and continues to keep the Boston Region MPO informed of their status through monthly reports at the MPO's regularly scheduled meetings. The Boston Region MPO will continue to include these projects in the LRTP and TIP until the process has been completed, assuming that any interim projects or programs will provide equal or better emissions benefits. When the process has been completed, the MPO will amend the LRTP and future TIPs and their conformity determinations to include any changes (including any interim projects or programs).

## *A Status Report of the Uncompleted SIP Projects*

The status of these projects has been updated using the SIP Transit Commitments Status Report, which was submitted by MassDOT to DEP in July 2015. Highlights of the report are presented below. For a more detailed description of the status of these projects, please visit MassDOT's website at the following link:

https://www.massdot.state.ma.us/planning/Main/PlanningProcess/StateImplementationPlan/SIPTransitCommitmentSubmissions.aspx.

***Red Line-Blue Line Connector –*** Final Design – SIP Required Completion by December 2011

*Project Status*

MassDOT initiated a process to amend the SIP to permanently and completely remove the obligation to perform final design of the Red Line–Blue Line Connector. To that end, MassDOT officially sought approval from DEP to support a SIP amendment process. MassDOT is not proposing to substitute any new projects in place of the Red Line–Blue Line Connector commitment, given the absence of any air-quality benefits associated with the current Red Line–Blue Line commitment (final design only). Correspondence from MassDOT to DEP formally initiating the amendment process was submitted on July 27, 2011, and is posted on the MassDOT website.

On September 13, 2012, DEP held two hearings (at 1:00 PM and 5:00 PM) to take public comment on MassDOT's proposed amendments to 310 CMR 7.36, Transit System Improvements, including eliminating the requirement to complete final design of the Red Line–Blue Line Connector. Between the two hearings, there were 16 attendees, 10 of whom gave oral testimony. All those who spoke at the hearings were in favor of DEP not removing the commitment. DEP accepted written testimony until September 24, 2012.

On August 23, 2013, EPA sent a letter to FHWA providing an update on Massachusetts Air Quality Conformity. In that letter, EPA noted that the Red Line–Blue Line Connector Design project had not met the completion date on December 2011, but that MassDOT was not obligated to implement interim emission-reduction projects because no emission reductions are associated with the design project.

On October 8, 2013, the DEP approved a request made by MassDOT in July 2011 to revise 310 CMR 7.36 to remove the requirement for MassDOT to complete the design of the Red Line/Blue Line Connector. This revision to the State Implementation Plan must now also be approved by EPA. The text of the revision is available on the MassDOT website at:

http://www.massdot.state.ma.us/Portals/17/docs/sip/October13UpdatedSIPReg.pdf.

On December 1, 2014, EPA published a proposed rule to approve a State Implementation Plan (SIP) revision submitted by the Commonwealth of Massachusetts in the Federal

Register on November 6, 2013. This proposal, if finalized, would remove the design of the Red Line/ Blue Line Connector as a requirement in the SIP.

*Funding Source*

MassDOT is proposing to nullify this commitment

***Fairmount Line Improvements Project –*** SIP Required Completion by December 2011

*Project Status*

The Four Corners and Newmarket Stations opened for service on July 1, 2013. The Talbot Avenue Station opened in November 2012.

A station at Blue Hill Avenue has been the subject of significant community controversy during the past-five years. The redesign of the station is now moving forward, and is 60 percent complete. The 90 percent design plans were received in July 2015 and 100 percent plans will be submitted in fall 2015. Construction is scheduled to begin in spring 2016, and the station to open in summer 2018.

MassDOT and the MBTA prepared a Petition to Delay and an Interim Emission Offset Plan to be implemented for the duration of the delay of the Fairmount Line Improvements project. MassDOT estimated the reduced emissions that are expected to be generated by implementing the new Fairmount Line station and, with input from Fairmount Line stakeholders, proposed offset measures. MassDOT estimated that the potential offset measures would meet emissions-reduction targets. The measures include shuttle bus service from Andrew Square to Boston Medical Center and increased service on bus Route 31, which serves Dorchester and Mattapan. These measures were implemented on January 2, 2012, and currently are in place.

*Funding Source*

The Commonwealth

***Green Line Extension to Somerville and Medford Project –*** SIP Required Completion by December 2014

*Project Status*

State-level environmental review (Massachusetts Environmental Policy Act (MEPA)) was completed in July 2010. Federal-level environmental review (National Environmental Policy Act (NEPA) documents were submitted to the Federal Transit Administration in September 2011, and a public hearing was held on October 20, 2011. A Finding of No Significant Impact (FONSI) was issued by the Federal Transit Administration (FTA) on July 9, 2012.

On January 5, 2015, the US Secretary of Transportation and the MBTA signed the Full Funding Grant Agreement (FFGA) for the Green Line Extension project, approving $996,121,000 of FTA New Starts funding to support design and construction of the

project. The execution of the FFGA was the result of many years of planning, design and pre-construction efforts by MassDOT and the MBTA, in collaboration with the FTA and its Project Management Oversight Consultant. The federal funding is scheduled to be paid between FFY 2015 and FFY 2022. As noted in the current MassDOT Capital Investment Plan (released January 2014), MassDOT and the MBTA will use Commonwealth funds in addition to federal funding to support the design and construction activities.

To tailor the project-delivery method to best mitigate the larger project risks, MassDOT and MBTA are implementing a four-phased project-delivery plan:

*Phase 1* is using the traditional design-bid-build approach to deliver the contract for widening the Harvard Street and Medford Street railroad bridges and demolishing the 21 Water Street building. The contract award occurred in December 2012, and the Notice to Proceed was issued on January 31, 2013.

The MBTA has also added some retaining wall construction to the Phase 1 contract that had previously been programmed for Phase 4 in that area. By constructing this work under the Phase 1 contract, this retaining/noise wall should be completed in time to better support and facilitate track relocation as part of the construction of Phase 4. The addition of this work has extended the end date of the Phase 1 contract by six months to October 2015, and as of this writing, the contractor is on track to complete it by then. In Medford at Harvard Street, the new T2 track installation was completed in July 2015.




*Phase 2/2A* will extend service from the (new) Lechmere Station to the Washington Street and Union Square Stations and relocate the bus facility and vehicle storage at Lechmere Station. The projected completion date for Phase 2/2A initial Green Line service is likely mid-2018.

*Phase 3* will construct the vehicle-maintenance facility and storage facility. As the full yard and maintenance facility are not needed to support the initial passenger service to Washington Street and Union Square, this phase has been scheduled for completion approximately six months ahead of the date for revenue service to College Avenue.

*Phase 4* will provide service from Washington Street Station (completed as part of Phase 2, above) to College Avenue Station, which was targeted to be completed in June 2020, roughly a year ahead of the FFGA completion date. Although enabling construction

is already underway in this segment, the design of this package is being revised to incorporate value engineering scope changes. This reworking will extend the period to complete the 100% final design for pricing and may extend the bidding and award into early 2016, as opposed to the planned November 2015 Notice to Proceed (NTP) date.

*New Green Line Vehicles:* The MBTA Vehicle Procurement contract to purchase 24 Type 9 Vehicles was awarded to CAF USA Inc. in the amount not to exceed $118,159,822 at the MassDOT Board Meeting held on May 14, 2014. The NTP for this contract was issued on September 4, 2014.

CAF is in the process of developing drawing packages for the Preliminary Design, and the MBTA Project Team and the Contractor CAF continue to hold technical working sessions and project meetings. In addition, weekly project management meetings are held between MBTA and CAF to discuss project status, short-term schedules and priorities as well as monthly project status meetings where all project issues, schedules, deliverables and milestones are reviewed and discussed.

The first vehicle is to be delivered no later than 36 months from NTP. The pilot car delivery is scheduled for September 2017. The pilot car will receive comprehensive testing for six months followed by delivery of the remaining 22 vehicles, the last car to be delivered by July 2018. All vehicles are expected to be in service in early 2019.

*Somerville Community Path:* Originally the Green Line Extension project included just the design of the extension of the Somerville Community Path from south of Lowell Street to the Inner Belt area of Somerville. In May 2014, MassDOT and the City of Somerville announced an agreement to add construction of the Community Path, including a connection to the Cambridge/Northpoint area, to the scope of the program. The Path Extension is not part of the SIP commitment.

*Potential Challenges*

MassDOT has met the first four interim milestones associated with the Green Line Extension project—filing an Expanded Environmental Notification Form, procuring multiple design consultants, and publishing both Draft and Final Environmental Impact Reports. The project has transitioned from planning and environmental review phases to design, engineering, and construction.

In the 2011 SIP Status Report, MassDOT reported that the Green Line Extension project would not meet the legal deadline of December 31, 2014. At that time, MassDOT projected a period for the introduction of passenger service on the Green Line Extension. The points within the period are associated with different probabilities, as shown below:

- 10% Probability of Not Exceeding – Autumn 2018
- 90% Probability of Not Exceeding – Summer 2020

FTA's projected completion date is June 2021, which includes one year of schedule contingency beyond the MBTA's Target date. Presently, the Green Line Extension team

anticipates that the completion date of Phase 4 will be extended from June 2020 to late summer/early fall 2020.

MassDOT and the MBTA continue to seek measures to accelerate the project timeline wherever possible. The receipt of the FFGA was a key milestone, as it allowed completion of the bidding process and the start of construction for the bulk of the Phase 2/2A and Phase 4 work.

Although the goal of the phased project delivery approach is to complete components in an incremental way, the timeline for overall project completion listed above represents a substantial delay beyond the current SIP deadline of December 31, 2014. Consequently, this schedule triggers the need to provide interim emission reduction offset projects and measures for the period of the delay (beginning January 1, 2015). Working with the Central Transportation Planning Staff, MassDOT and the MBTA calculated the reductions of VOC, CO, and NOx—reductions equal to or greater than the reductions projected for the Green Line Extension itself, as specified in the SIP regulation—that will be required for the period of the delay.

In June 2012, MassDOT released a list of potential mitigation ideas received from the public that could be used as offset measures. In the summer and fall of 2012, MassDOT solicited public comments on these potential measures. The MBTA created an internal working group to determine a final portfolio of interim mitigation measures to implement by December 31, 2014, the legal deadline for the implementation of the Green Line Extension.

This work resulted in a recommendation to implement the following three interim mitigation measures, which collectively would meet the emissions reduction target for the project:

- Additional off-peak service along existing routes serving the GLX corridor, including the Green Line, and bus routes 80, 88, 91, 94 and 96
- Purchase of 142 new hybrid electric vehicles for THE RIDE
- Additional park-and-ride spaces at the Salem and Beverly intermodal facilities

The Petition to Delay, submitted to DEP on July 22, 2014, expands further on the analysis and determination of the interim offset measures. These measures went into effect in the beginning of 2015. In a letter dated July 16, 2015, DEP conditionally approved MassDOT's request to delay the Green Line Extension project and the implementation of the above interim mitigation measures. Both the 2014 Petition to Delay and the July 2015 Conditional Approval are available on MassDOT's website.

*Funding Source*

The Commonwealth

***Russia Wharf Ferry Terminal***

*Project Status*

Former MassDOT Secretary Richard Davey approved construction of the permitted ferry facility and a $460,000 ferry-service startup subsidy in October 2012. The 2005 facility plans and specifications were revised to meet the latest MassDOT Highway Division standards. The bid package was issued in the fall of 2013. A contractor was selected and the Notice to Proceed was issued in April 2014. Pre-construction activities progressed, but contractual issues have led MassDOT to decide to rebid the contract and complete the facility in 2015. There is no regularly scheduled passenger water transportation service in this area, nor are there any plans to provide such a service. The City of Boston, however, is undertaking design and engineering work to address the Old Northern Avenue Bridge's vessel-clearance constraint, and is purchasing two ferry vessels for Inner Harbor use, which could include this ferry terminal as a destination.

*Funding Source*

The Commonwealth

## CONSULTATION PROCEDURES

Conformity regulations require the MPO to make a conformity determination according to consultation procedures outlined in state and federal regulations and to follow public involvement procedures established by the MPO under federal metropolitan transportation-planning regulations.

Both state and federal regulations require that the Boston Region MPO, MassDOT, DEP, EPA, and the Federal Highway Administration (FHWA) consult on the following issues:

- Selection of regional emissions analysis models, including model development and assessment of project design factors for modeling
- Selection of inputs to the most recent EPA-approved emissions factor model
- Selection of CO hot-spot modeling procedures, as necessary
- Identification of regionally significant projects to be included in the regional emissions analysis
- Identification of projects that have changed in design and scope
- Identification of exempt projects
- Identification of exempt projects that should be treated as nonexempt because of adverse air-quality impacts
- Identification of the latest planning assumptions and determination of consistency with SIP assumptions

These issues have all been addressed through consultation among the agencies listed above.

## PUBLIC PARTICIPATION PROCEDURES

Title 23 CFR Sections 450.324 and 40 CFR 90.105(e) requires that development of the LRTP, TIP, and related certification documents provide an adequate opportunity for public review and comment.

Section 450.316(b) establishes the outline for MPO public participation programs. The Boston Region MPO's public participation program was adopted in June 2007, revised in April 2010, and updated in May 2012 and October 2014. The development and adoption of this program conform to these requirements. The program guarantees public access to the LRTP and TIP and all supporting documentation; provides for public notification of the availability of the LRTP and TIP and the public's right to review the draft documents and comment on them; and provides a public review and comment period prior to adoption of the LRTP and TIP and related certification documents by the MPO.

On June 25, 2015 a public notice was sent to the MPO's email contact list inviting the recipients to comment on this draft document. On July 30, 2015, the Boston Region MPO voted to approve the draft LRTP and its Air-Quality Conformity Determination. This allowed many opportunities for public comment and MPO review of the draft document. These procedures comply with the associated federal requirements.

## FINANCIAL CONSISTENCY

Title 23 CFR Section 450.324 and 40 CFR 93.108 require the LRTP and TIP to "be financially constrained by year and include a financial plan that demonstrates which projects can be implemented using current revenue sources and which projects are to be implemented using proposed revenue sources." This Boston Region MPO's LRTP is financially constrained to projections of federal and state resources that are reasonably expected to be available during the appropriate period. Projections of federal resources are based on the estimated apportionment of the federal authorizations contained in Moving Ahead for Progress in the 21st Century (MAP-21), the transportation reauthorization bill, as allocated to the region by the state or as allocated among the various Massachusetts MPOs according to federal formulas or MPO agreement. Projections of state resources are based on the allocations contained in the current state Transportation Bond Bill and on historic trends. Therefore, this LRTP complies with federal requirements relating to financial planning.

## *Procedures for Determining Regional Transportation Emissions*

The federal conformity regulations set forth specific requirements for determining transportation emissions. The requirements and the procedures used for the LRTP are summarized below.

### DEMOGRAPHICS, EMPLOYMENT, AND TRANSPORTATION DEMAND

Specific sources of population, household, employment, and traffic information used in the LRTP are listed above in the Latest Planning Assumptions section. Tables 8.1 and 8.2, below, outline recommendations for specific projects for the period ending in 2040.

Only regionally significant projects are required to be included in the travel-demand modeling efforts. Federal conformity regulations define regionally significant as follows:

> "A transportation project (other than an exempt project) that is on a facility that serves regional transportation needs (such as access to and from the area outside of the MPO region; major activity centers in the region; major planned developments, such as new retail malls and sport complexes; and transportation terminals (as well as most terminals themselves) and would be included in the modeling of a metropolitan area's transportation network, including at a minimum all principal arterial highways and all fixed-guideway transit facilities that offer an alternative to regional highway travel."

In addition, specific projects are exempt from regional modeling emissions analysis. The categories of exempt projects include:

- Intersection channelization projects
- Intersection signalization projects at individual intersections
- Interchange reconfiguration projects
- Changes in vertical and horizontal alignment
- Truck size and weight inspection stations
- Bus terminals and transfer points

The Recommended Networks in this conformity determination are composed of projects proposed in the approved TIPs and LRTP, and projects in the MBTA capital budget. A list of the projects that meet these criteria and are included in the recommended transportation networks and this conformity determination is provided in Table 8.1 (projects under construction) and Table 8.2 (recommended LRTP and TIP projects). The list includes all regionally significant projects in the Boston Region MPO area.

## TABLE 8.1
## Regionally Significant Projects Included in the Regional Transportation Models for the Boston Region MPO Recommended LRTP Projects: Projects under Construction

| Analysis Year | Municipality | Project Name |
|---|---|---|
| 2020 | Needham and Wellesley | Rehabilitation/Replacement of 6 Bridges on I-95/Route 128 (Add-a-Lane – Contract V) |

## TABLE 8.2
## Regionally Significant Projects Included in the Regional Transportation Models for the Boston Region MPO Recommended LRTP Projects: Recommended Projects

| Analysis Year | Municipality | Project Name |
|---|---|---|
| 2020 | Bedford and Billerica | Middlesex Turnpike Improvements, from Crosby Drive North to Manning Road, Phase III |
| 2020 | Newton and Needham | Reconstruction of Highland Avenue, Needham Street & Charles River Bridge, from Webster Street to Route 9 |
| 2020 | Weymouth and Abington | Reconstruction and Widening on Route 18 (Main Street) from Highland Place to Route 139 |
| 2020 | Woburn | Reconstruction of Montvale Avenue, from I-93 Interchange to Central Street |
| 2020 | Woburn | Bridge Replacement, New Boston Street over MBTA |
| 2030 | Boston | Reconstruction of Rutherford Avenue, from City Square to Sullivan Square |
| 2030 | Framingham | Intersection Improvements at Route 126 and Route 135/MBTA & CSX Railroad |
| 2030 | Lexington | Route 4/225 (Bedford Street) and Hartwell Avenue |
| 2030 | Natick | Bridge Replacement, Route 27 (North Main St.) over Route 9 (Worcester St.) and Interchange Improvements |
| 2030 | Somerville and Medford | Green Line Extension Project (Phase 2), College Avenue to Mystic Valley Parkway/Route 16 |
| 2030 | Somerville | McGrath Boulevard Project |

### CHANGES IN PROJECT DESIGN AND CONSTRUCTION SCHEDULE SINCE THE LAST CONFORMITY DETERMINATION ANALYSIS

The Commonwealth requires that any changes in the mix of projects, project design, and construction schedule from the previous conformity determination for the region be identified. The last conformity determination was performed for the Boston Region FFYs 2015–18 TIP in July 2014. The mix of projects included in the conformity determination for this LRTP has changed with the development of a new LRTP. The status of uncompleted SIP projects has been updated. In addition, the new MOVES 2014 emission model was used for the projection of carbon monoxide emissions.

### MODEL-SPECIFIC INFORMATION

40 CFR Part 93.111 outlines requirements pertaining to the network-based transportation demand models. These requirements include the modeling methods and functional relationships that are to be used in accordance with accepted professional practice and are to be reasonable for purposes of estimating emissions. The Boston Region MPO used the methods described in the conformity regulations for the analysis in this LRTP.

### HIGHWAY PERFORMANCE MONITORING SYSTEM ADJUSTMENTS

As stated in EPA guidance, all carbon monoxide nonattainment areas must use the FHWA's Highway Performance Monitoring System (HPMS) to track daily vehicle-miles of travel (VMT) prior to attainment to ensure that the state is in line with commitments made in reaching attainment of ambient air-quality standards by the required attainment dates. MassDOT provided HPMS information to DEP. DEP used this information in setting the mobile-source budget for CO in all SIP revisions prior to 1997.

An HPMS adjustment factor was developed by comparing the 1990 CO emissions of the nine cities and towns (Boston and eight surrounding communities in the Boston maintenance area) resulting from the 1990 base-year model run to the 1990 HPMS-generated CO emissions data submitted as part of the SIP. The HPMS data were divided by the model data to determine the CO adjustment factor to be applied to all modeled CO emissions for future years. The CO HPMS adjustment factor is 0.71.

## *The Conformity Test*

### CONSISTENCY WITH THE EMISSION BUDGETS SET FORTH IN THE SIP

The Boston Region MPO conducted an air-quality analysis for the Boston Region MPO's LRTP. The purpose of the analysis is to evaluate the air-quality impacts on the SIP of the projects included in the LRTP. The analysis evaluated the change in CO emissions because of implementing the LRTP. The modeling procedures and assumptions used in this air-quality analysis follow the EPA's conformity regulations. They are also consistent with the procedures used by the DEP to develop Massachusetts's "1990 Base-Year

Emission Inventory," "1996 Reasonable Further Progress Plan," "Post-1996 Reasonable Further Progress Plan," and "1996 Rate of Progress Report." All consultation procedures were followed to ensure that a complete analysis of the LRTP was performed and was consistent with the SIP.

The primary test for showing conformity with the SIP is demonstrating that the emissions generated by projects in this LRTP is consistent with the emission budget set forth in the SIP. The CO mobile-source attainment inventory for 1993 for the nine cities in the Boston area reclassified as being in attainment is 305.43 tons per winter day. The projection of mobile sources for the Boston maintenance area is 228.33 tons per winter day for 2010. Estimates of CO emissions for the nine cities in the Boston maintenance area for various years are shown in Table 8.3. The CO emissions are less than the CO emission budget in each year.

**TABLE 8.3**
**Winter CO Emissions Estimates for the CO Maintenance Area for the Nine Cities in the Boston Area**

| Year | Boston Region MPO Build Emissions | Emission Budget | Difference (Build Minus Budget) |
|---|---|---|---|
| 2020 | 34.56 | 228.33 | -193.77 |
| 2030 | 23.32 | 228.33 | -205.01 |
| 2040 | 18.90 | 228.33 | -209.43 |

Note: Emissions are cited in tons per winter day.

## *Conclusion*

The Clean Air Act Amendments of 1990 established air-quality conformity requirements for transportation plans, programs, and projects. The EPA published a final rule in the November 24, 1993, Federal Register, with several amendments through 2010, providing procedures to be followed by the US Department of Transportation in determining conformity of transportation plans, programs, and projects with the SIP for meeting air-quality standards. Boston, Cambridge, Chelsea, Everett, Malden, Medford, Quincy, Revere, and Somerville are designated a maintenance area for the CO standard. Federal conformity regulations require that the impact of transportation plans, programs, and projects on maintenance areas be evaluated.

The Boston Region MPO conducted an air-quality analysis for projects in this LRTP. The purpose of the analysis was to evaluate the air-quality impacts of the LRTP projects on the SIP. The analysis evaluates the change in CO emissions based on implementing the LRTP. The modeling procedures and assumptions used in this air-quality analysis follow the EPA's and the Commonwealth's guidelines and are consistent with all present and past procedures used by the Massachusetts DEP to develop and amend the SIP.

Boston Region MPO has found the emission levels from the Boston area CO Maintenance Area, including emissions resulting from implementation of the LRTP, to be in conformance with the SIP according to state and federal conformity criteria. Specifically, the CO emissions for the build scenarios of the MPO's regional travel demand model set are less than the projections for analysis years 2020 through 2040 for the nine cities in the Boston CO Maintenance area.

In accordance with Section 176(c)(4) of the Clean Air Act as Amended in 1990, the Boston Region MPO has completed this review and hereby certifies that the LRTP, and its latest conformity determination, conditionally conforms with 40 CFR Part 93 and 310 CMR 60.03 and is consistent with the air-quality goals in the Massachusetts State Implementation Plan.

# GREENHOUSE GAS ANALYSIS

## *Greenhouse Gas Analysis Introduction*

The largest environmental threat the MPO faces is the need to reduce greenhouse gas (GHG) emissions that contribute to climate change, which if unchecked, could impair our transportation system and way of life. Climate change will likely have significant impacts on the Boston region if climate trends continue as projected. In order to minimize the negative impacts, the MPO is taking steps to decrease our carbon footprint and to simultaneously adapt our transportation system to minimize damage from natural hazards. The MPO strongly considers projects and strategies that protect and enhance the environment, promote energy conservation, and improve the quality of life in the region.



In addition, the Commonwealth has enacted regulations to reduce greenhouse gases from all sectors including transportation. This section outlines the legislation and regulation requiring emission reductions by the MPO. It also presents the process for documenting $CO_2$ emissions associated with this LRTP and other MPO's LRTPs in the Commonwealth.

## Legislative Requirements



Former Governor Deval Patrick signed the Global Warming Solutions Act (formally called the Climate Protection and Green Economy Act) in August 2008. The Act requires reductions of GHG emissions below 1990 levels by 25 percent by 2020, and 80 percent reduction by 2050. As part of the Global Warming Solutions Act (GWSA), the Executive Office of Energy and Environmental Affairs developed the Massachusetts Clean Energy and Climate Plan for 2020 that outlines programs to attain the 25 percent reduction by 2020. In that plan, a 7.6 percent reduction will be attributed to state transportation programs. One of the programs in the Massachusetts Clean Energy and Climate Plan is MassDOT's sustainability initiative, also known as GreenDOT. The GreenDOT Policy directive was developed in accordance with the GWSA. Its three goals are:

1. To reduce GHG emissions by reducing emissions from construction and operations, using more efficient fleets, implementing travel demand management programs, encouraging eco-driving, and providing mitigation for development projects
2. To promote healthy transportation modes by improving pedestrian, bicycle, and public transit infrastructure and operations
3. To support smart growth development by making transportation investments that enable denser, smart growth development patterns that can support reduced GHG emissions

Subsequently, the DEP established a regulation—Global Warming Solutions Act Requirements for the Transportation Sector and the Massachusetts Department of Transportation (310 CMR 60.05). The purpose of this regulation is to assist the Commonwealth in achieving their adopted GHG emission reduction goals by:

- Requiring MassDOT to demonstrate its GHG reduction commitments and targets are achieved
- Requiring each MPO to evaluate and track the GHG emissions and impacts of its LRTP and TIP

- Requiring each MPO, in consultation with MassDOT, to develop and utilize procedures to prioritize and select projects in its LRTP and TIP based on factors that include GHG emissions and impacts

## *The MPO's Role in Reducing Greenhouse Gas Emissions*

The Boston Region MPO is involved in helping to achieve the GreenDOT goals. The MPO is most directly involved in helping to achieve reductions through prioritizing and programming an appropriate balance of roadway, transit, bicycle, and pedestrian investments, and will assist in the third goal—supporting smart growth development patterns through the creation of a balanced multimodal transportation system. The Boston MPO's Clean Air and Clean Communities goal and related objectives are used as criteria in selecting projects for both the LRTP and TIP to further the MPO's vision for a sustainable, healthy, livable, and economically vibrant region. The MPO's goal will help MassDOT to achieve the GreenDOT goals. The MPO's objective is to reduce GHG emissions generated in the region by all transportation modes as outlined in the Global Warming Solutions Act.




The MPO is contributing to the statewide implementation of GreenDOT in a number of other ways:

- Alternative Modes of Travel – The MPO funds projects that provide people with transportation options other than single-occupancy vehicles (SOVs). Alternative modes to SOVs include transit, bicycling, walking, and carpooling.
- Reduction of Vehicle-Miles of Travel and Roadway Congestion – The MPO funds projects that reduce the need to drive and ease roadway congestion, therefore reducing emissions through its Community Transportation/Parking/Clean Air and Mobility Program.
- Alternative Fuel Sources – The MPO funds the use of alternative fuel sources, which can release less GHG than traditional fossil fuels.
- Smart Growth Policies – The MPO promotes Smart Growth Policies through its project selection criteria.

- Public Outreach – The MPO can also help by educating the public through its many avenues of outreach and by supporting future federal and state programs that reduce GHG emissions.

## *Documenting the MPO's Greenhouse Gas Reduction for GreenDOT Implementation*

MassDOT coordinated with MPOs and regional planning agency (RPA) staffs to implement GHG tracking and evaluate development of each MPO's 2012 LRTPs, which were adopted in September 2011. This collaboration has continued for the MPOs' 2016 LRTPs and 2016–19 TIPs. Working together, MassDOT and the MPOs have attained the following milestones:

- MassDOT and the Boston MPO are in the process of modeling and projecting long-range GHG statewide emissions that result from the transportation sector. Using the Boston Region MPO's regional travel demand model and the statewide travel demand model for the remainder of the state, GHG emissions will be projected for 2020 no-build and build conditions, and for 2040 no-build and build conditions. The results of this modeling will be available in a separate statewide air quality report at the end of August 2015. MPO staff will present the results to the MPO once it is completed.
- All of the MPOs will include a discussion of climate change and a statement of MPO support for reducing GHG emissions as a regional goal.

The Boston Region MPO and MassDOT will provide the Boston Region MPO with statewide estimates of $CO_2$ emissions based on the collective list of all recommended projects in all the Massachusetts LRTPs combined (and supplemented by $CO_2$ emission-reduction results for smaller, "off-model" projects supplied by the MPO). Emissions will be estimated using the new MOVES 2014 model, and will incorporate the latest planning assumptions including updated socio-economic projections for the Commonwealth.

The project mix from this, and all other LRTPs—modeled for both 2020 and 2040 using a build versus no-build analysis to determine $CO_2$ emissions attributed to all MPOs' mix of projects and smart-growth land-use assumptions—is expected to show a neutral shift toward meeting the statewide greenhouse gas emissions reduction goal of 25 percent less than 1990 levels by the year 2020, and 80 percent below 1990 levels by 2050. The reason for the anticipated neutral shift is that early indicators have shown that major infrastructure projects, both individually and collectively, would not trigger a significant change in GHG emission levels.

Working closely with MassDOT, the Boston Region MPO—via its planning activities—continues to make progress toward meeting the GHG reductions targets and complying with the GWSA's requirements. As part of this activity, the MPO will provide further public

information on the topic and continue to advocate for steps needed to accomplish the MPO's and Commonwealth's goals.

Many other types of projects that cannot be accounted for in the travel demand model (such as bicycle and pedestrian facilities, shuttle services, intersection improvements, etc.) are further analyzed for $CO_2$ reductions in the TIP development cycle. In order to monitor and evaluate the GHG impacts of TIP projects, MassDOT and the MPOs have developed approaches for identifying the anticipated GHG emission impacts of different project types. All TIP projects have been sorted into two main categories for analysis: projects with quantified impacts and projects with assumed impacts. Projects with quantified impacts consist of capacity-adding projects from the LRTP and projects from the TIP that underwent a Congestion Mitigation and Air Quality (CMAQ) spreadsheet analysis. Projects with assumed impacts include those that would be expected to produce a minor decrease or increase in emissions and that would be assumed to have no $CO_2$ impact. A detailed description of project evaluations included in the TIP is cited in Appendix C of the FFY 2016–2020 TIP (http://www.bostonmpo.org/Drupal/tip). The collective GHG reductions from the TIP projects are approximately 4,300 tons per year.

Working closely with MassDOT, the Boston Region MPO will continue to report on its actions to comply with the GWSA and help meet the GHG reduction targets. As part of this activity, the MPO will provide further public information on the topic and will advocate for steps needed to accomplish the MPO's and state's goals for greenhouse gas reductions.

The MPO acknowledges the importance of adaptation measures to moderate potential damage from climate change impacts. Its System Preservation goal helps by selecting projects that improve the ability of the transportation system to withstand extreme conditions. Projects that improve an evacuation route or an access route to an emergency support location earn higher ratings in the project evaluation process. Similarly, the evaluation process rewards projects that address sea-level rise and flooding, meet current seismic design standards, and protect critical infrastructure. These criteria will help identify future transportation investments to address the impacts of climate change.

# APPENDIX A
# SCENARIO PLANNING

## INTRODUCTION

As described in Chapter 2, the MPO used scenario planning to help shed light on the relative merits of two different approaches to congestion: Should the MPO continue to use a congestion-reduction approach by investing in major arterials and express highways? Or, should the MPO adopt a capacity-management approach by investing in smaller-scale, but more diverse and geographically dispersed, operations and management (O&M)-type projects? To answer these questions, staff compared three scenarios to a base-case scenario using both the regional travel demand model set and off-model analyses. Included in this appendix is a summary of the scenario-planning process that was undertaken as part of this LRTP development.

Results of the analysis helped the MPO finalize its goals and objectives and select a set of programs and projects to analyze to determine which ones to include in the LRTP. The MPO adopted the O&M approach to programming in the LRTP. This new policy direction signaled a pivotal change in the MPO's approach to programming transportation investments.

For the Long-Range Transportation Plan (LRTP), Charting Progress to 2040, the Boston Region MPO examined how allocating available dollars to various strategies would best address the region's transportation needs, while advancing the MPO's vision, goals and objectives. Themes of the MPO's goals are:

1. Safety
2. System Preservation
3. Capacity Management/Mobility
4. Clean Air/Clean Communities
5. Transportation Equity
6. Economic Vitality

To support the plan's development, MPO staff conducted scenario planning to help the MPO and the public weigh the benefits and tradeoffs of different investment strategies.

### Policy Question for Scenario Planning

The MPO considered two different approaches to addressing mobility needs during the next 25 years, focusing on a specific policy question related to a proposed objective within its Capacity Management and Mobility goal:

"Should the MPO give priority in a congestion reduction program to major arterials and express highways throughout the region which serve transit and/or existing population and places of employment?"

This policy would shape the MPO's approach to future transportation investments. One approach was to program primarily high-cost roadway projects, while another option concentrated on lower-cost, often multimodal types of investments. The purpose of this scenario planning was to help clarify the degree to which each of these approaches would help the MPO progress toward its goal of improving mobility, along with its other stated goals.

## Four Scenarios for Analysis

To shed light on the policy question cited above, the MPO established one base-case scenario and three alternatives. Each scenario reflected a different hypothetical investment approach that the MPO could follow over the next 25 years. These scenarios have several elements in common:

- All four scenarios look out to the LRTP horizon year of 2040.
- The socioeconomic (population, household, and employment) data is the same for all scenarios.
- By 2040, the population in the MPO's model region (164 communities) is expected to rise by 12.9 percent to approximately 4,854,000 people. Employment in the same region is expected to rise by 7.7 percent to approximately 2,579,000 jobs.
- All scenarios are financially constrained to the MPO's target funding and its share of federal major
- nfrastructure funding, which, assuming current dollars, is about $2 billion during the plan's 25-year life span.

The MPO gathered a large amount of information about the Boston region's transportation needs, both through analysis conducted by MPO staff and others, and via outreach to municipalities and groups in the region. MPO staff identified the following scenarios with these needs in mind. Although the scenarios focus on congestion management and mobility, each takes a different approach in addressing this goal.

2040 No-Build Scenario (Base Case): No improvements to the existing transportation network other than those that are currently under construction, advertised for construction, or included in the first year of the Federal Fiscal Years 2015−18 Transportation Improvement Program (TIP) of the Boston Region MPO and TIPs of adjacent MPOs.

Current-LRTP Scenario: Reflects the MPO's current spending patterns. Includes all of the projects listed in the Boston Region MPO's LRTP that are not yet funded, plus additional projects and programs (not listed in the LRTP). Assumes that unallocated funding from the current LRTP would be programmed over the next 25 years in the same proportions as the MPO has programmed its funding during the previous 10 years.

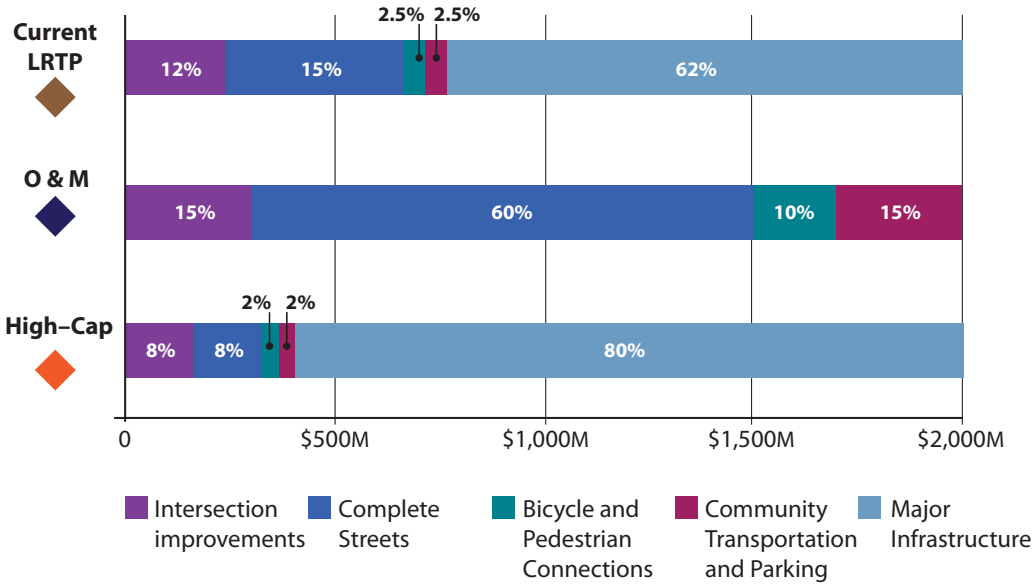
Operations and Management (O&M) Scenario: A congestion management approach focusing on lower-cost O&M improvements, such as intersection improvements and Complete Streets solutions, to improve mobility on the roadway network. Emphasizes capacity management through low-cost investments.

High-Capital Investment (High-Cap) Congestion Management Scenario: Includes a large percentage of high-cost capital infrastructure improvements, such as interchange upgrades and major bottleneck reconstructions. Includes a small percentage of lower-cost projects that do not add capacity to the region's transportation system.

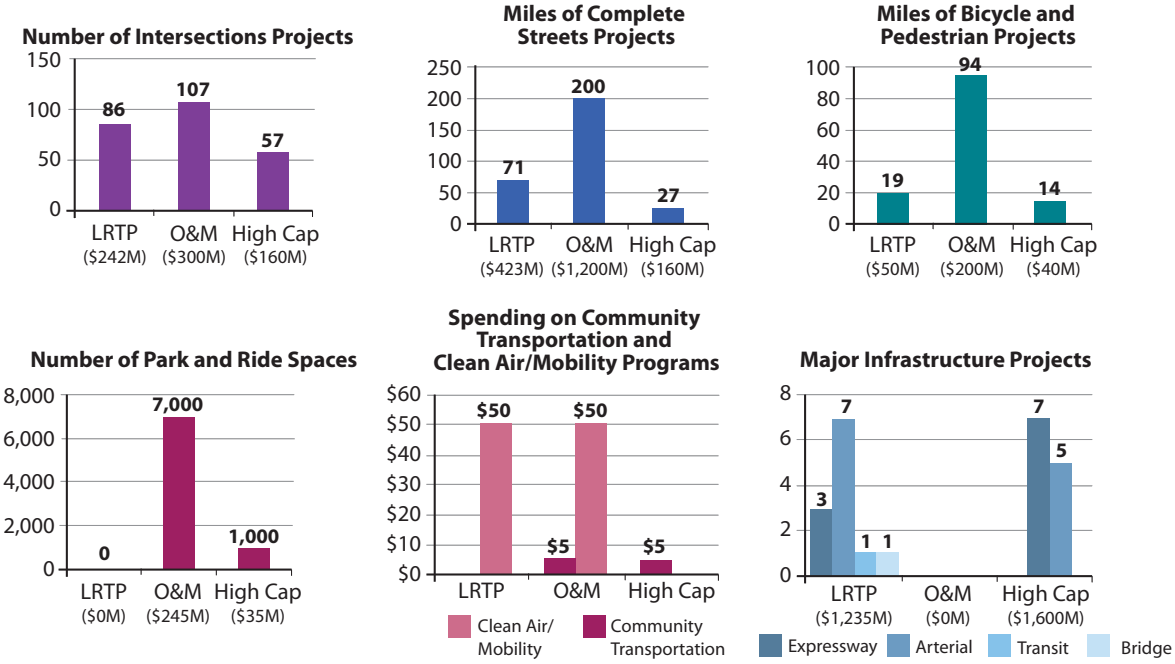
## Scenario Features

For the alternative scenarios, MPO staff allocated the $2 billion in available funding across five hypothetical programs. The programs (described on the following pages) would address in a thematic way one or more categories of identified transportation needs. The portion of funds allocated to a program depends upon each scenario's purpose and key characteristics.

### Funding Distribution




### Projects in Scenarios



# PROGRAMS FOR ADDRESSING TRANSPORTATION NEEDS

## INTRODUCTION

The five hypothetical programs included in the scenarios are described on the right. The descriptions provide information about how MPO staff estimated costs for types of projects that the program would fund. As shown on the previous page, each scenario allocates different portions of the $2 billion in LRTP funding to each program.

To gauge the scenarios' performance, staff selected a number of indicators that correspond to the MPO's goals. To measure programs and projects that could have a regional impact, add capacity to the system, or change an attribute of the system—for example, change the amount of delay or capacity, add an alternative travel option, and so forth—staff utilized the MPO's regional travel demand model set. Staff used off-model sketch-planning techniques to generate performance data for other projects, particularly those that are lower in cost and have smaller footprints.

### KEY: MPO GOALS

- **Safety**
- **System Preservation**
- **Capacity Management/ Congestion Reduction**
- **Clean Air/Clean Communities**
- **Transportation Equity**
- **Economic Vitality**



## INTERSECTION IMPROVEMENTS

**Description:** Modernizes existing signals or adds signals to improve safety and mobility. Improvements could also consist of turning lanes, shortened crossing distances for pedestrians, and striping and lighting for bicyclists. Improvements to sidewalks and curb cuts also will enhance accessibility for pedestrians. Updated signal operations will reduce delay and improve transit reliability.

Sample intersections for this program, which were used to estimate project benefits, were drawn from the TIP Universe of Projects, locations identified in past MPO studies, and the LRTP Needs Assessment. These projects were prioritized—first through determining if they are high-crash locations to address the MPO's safety goal, and then if they are located in high-priority-development, environmental justice, or Title VI areas.

**Estimated cost of intersection improvement projects:** Average of $2.8 million per intersection



## COMPLETE STREETS

**Description:** Modernizes roadways to improve safety and mobility for all users. Improvements could consist of continuous sidewalks and bicycle lanes, cycle tracks, and other bicycle facilities, as well as updated signals at intersections along a corridor. Improvements will reduce delay and improve transit reliability. Expanded transportation options and better access to transit will improve mobility for all and encourage mode shift.

**Estimated cost of Complete Streets projects:** $6 million per mile



## BICYCLE NETWORK AND PEDESTRIAN CONNECTIONS

**Description:** Expands the bicycle and pedestrian networks to improve safe access to transit, school, employment centers, and shopping destinations. Could include constructing new, off-road bicycle or multi-use paths, improving bicycle and pedestrian crossings, or building new sidewalks.

Sample bicycle and pedestrian projects for this program were selected using evaluated TIP projects, the MPO's Bicycle Network Evaluation, and bicycle travel market information from the 2011 Massachusetts Household Survey.

**Estimated cost of bicycle and pedestrian projects:** Varies (analysis uses available preliminary cost, or average of $2 million per mile)




## COMMUNITY TRANSPORTATION AND PARKING

**Description:** Includes a combination of the following types of projects:

- **Community Transportation:** Provides funding to launch locally developed transit services that support first-mile/last-mile connections to existing transit services and other destinations by purchasing shuttle buses and/or funding operating costs.
  **Estimated cost:** Assumed to cost $5 million over the 25-year life of the plan.
- **Park-and-Ride:** Targets funding to construct additional parking at transit stations that now are at capacity.
  **Estimated cost:** The average cost per parking space is $35,000.
- **Clean Air and Mobility Program:** Provides funding to projects (such as bike share projects or shuttle bus services) to improve mobility and air quality and promote mode shift.
  **Estimated cost:** Assumed to cost $50 million over the 25-year life of the plan.



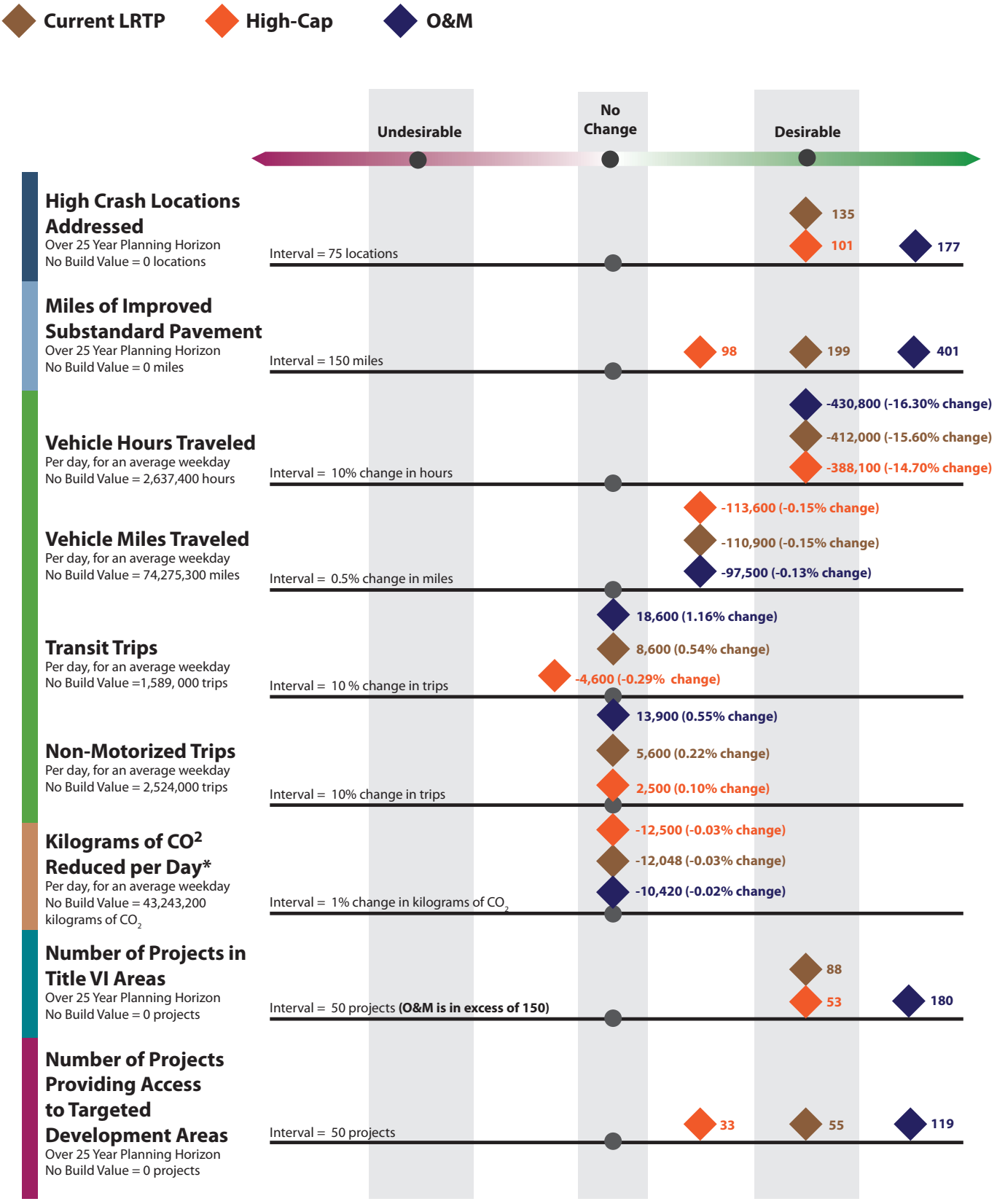
## MAJOR INFRASTRUCTURE

**Description:** Modernizes and/or expands major highways and arterials to reduce congestion and improve safety. Projects could include constructing expressway interchanges to eliminate weaving and reduce the likelihood of rollovers, adding travel lanes on expressways, or adding/removing grade separations on major arterials. The current LRTP also considers transit (Green Line Extension from College Avenue to Mystic Valley Parkway/Route 16) and bridge projects.

**Estimated cost per project:** Costs were associated with each project based on costs in current or past LRTPs, adjusted to current dollars, or costs from studies that were performed for selected locations, also adjusted to current dollars. Assumes eight interstate bottlenecks and five arterial projects.

## Scenario Results

The values for the alternative scenarios are shown relative to the values for the No-Build scenario. When scenario symbols are stacked, the scenarios with symbols toward the top of the stack perform better.




*Emission generated using MOVES 2010B

## Conclusions

The results of these scenarios provided insight on the MPO's policy question:

> "Should the MPO give priority in a congestion reduction program to major arterials and express highways through the region which serve transit and/or existing population and places of employment?"

The scenario planning results show how different sets of projects and programs would address the MPO's goals, including capacity management and mobility. The MPO used these results in conjunction with other information, such as the LRTP Needs Assessment and public feedback, to answer the policy question and develop projects and programs for investing federal funds over the next 25 years. The results showed that:

- The O&M scenario is the most effective at addressing a diverse set of MPO goals. It performs similar to or better than other scenarios that address Capacity Management and Mobility, which is the goal that members wanted to explore through this planning.
- More than any other, the O&M scenario perhaps provides greater opportunities to ensure geographic equity (money can be distributed throughout the region, as opposed to being concentrated in a few specific projects).
- Though all three scenarios performed well in safety—a top-rated MPO goal—the O&M scenario performed the best. The O&M scenario also performed significantly better than the other two scenario options in terms of improvements to substandard pavement, which addresses the MPO's system preservation goal.
- There is little difference between scenarios in terms of $C0_2$ reduction, and reductions are minor compared to the "No-build" scenario.
- Similarly, all alternative scenarios create desirable change in terms of vehicle hours traveled, but they do not differ much from one another. They generate slight desirable change in terms of vehicle miles traveled.
  In general, under the three scenarios, people are covering the same amount of distance, but spending less time traveling.

## Staff Policy Recommendation

Based on the conclusions from scenario planning, staff recommended that the MPO not adopt the objective of giving priority to a congestion reduction program as posed in the policy question above.
To complete the set of objectives in the Capacity Management/Mobility goal, staff recommended adopting the following revised objective:

> "Emphasize capacity management through low-cost investments; give priority to projects that focus on lower-cost O&M-type improvements such as intersection improvements and Complete Streets solutions."

The implications of this are that the MPO is moving toward a programmatic approach to allocating funding in the LRTP.

## What Happened Next?

Below were questions the MPO considered during its meetings as they finalized *Charting Progress to 2040*.

1. What percentage of funding should be allocated to each program (intersection improvements, complete streets, bicycle and pedestrian connections, community transportation and parking, and major infrastructure)?
2. Will highway funding be flexed to transit?
3. Will any funding be left unallocated?

# B APPENDIX UNIVERSE OF PROJECTS

## INTRODUCTION

One of the primary outcomes of the LRTP process is to create a list of major capital expansion projects and a set of programs for implementation during the next-25 years. Thus, the MPO created a Universe of Projects and Programs list to identify all potential projects and programs. This appendix contains that list for both highway and transit projects.

Each project is associated with one of the six established MPO programs:

1. Intersection Improvements
2. Complete Streets
3. Bicycle Network and Pedestrian Connections
4. Community Transportation and Parking
5. Major Infrastructure
6. Transit

The MPO used the “Universe” list to develop a draft list of projects and programs for public review and the final list to include in this LRTP. The Universe of Projects and Programs includes the following projects that:

- Already have been programmed in the LRTP and TIP (excluding the first year of the current TIP) for highway and transit modes
- Are identified as important for meeting the region’s transportation needs, as described in the MPO Needs Assessment
- Have emerged as recommended from studies conducted by the MPO and other entities in the region
- Are included in the current MBTA Program for Mass Transportation and in the MBTA Capital Investment Program, and others recommended by the MBTA

The projects in the Universe list are presented in three categories and sorted by program type. Table B.1 lists all major infrastructure projects that were included in the last LRTP, *Paths to a Sustainable Region*. Table B.2 lists all projects that add capacity to the transportation system or that cost more than $20 million. These projects must be listed in the LRTP before they can be programmed for construction in the TIP. Table B.3 lists all projects that do not add capacity to the transportation system and cost less than $20 million. These projects can be programmed directly in the TIP without being mentioned in the LRTP. They generally fall into one of the programs that are included in the LRTP and are listed above.

Information in each of the tables includes:

1. Project Type (the project falls into one of the following categories):
    - Arterial and Intersection
    - Bicycle and Pedestrian
    - Major Highway
    - Transit
    - Freight
    - Bridge
    - Enhancement
2. Investment Program (the project falls into one of the following programs):
    - Bottleneck
    - Intersection Improvement
    - Interchange
    - Major Infrastructure
    - Complete Streets
    - Bike Network
    - Pedestrian Connections
    - Major Infrastructure
    - Bridge
    - Transit Capacity
    - Freight Movement

- Ferry Services
- Clean Air and Mobility

3. PROJIS Number: projects in MassDOT's project-tracking system are given a number; projects not in the system have no number.
4. Project Proponent: project sponsor
5. Project Name
6. TIP/LRTP Status (one of the following):
   - Conceptual: a functional design report has not been submitted (the design status is pre-25% design)
   - Pre-TIP: any project in which a 25% functional design report has been submitted to MassDOT (design status can range from 25% to 100%)
   - Programmed in the LRTP
7. CTPS Study: past UPWP-funded studies or reports were conducted within the project area
8. Estimated Cost
9. Project Length in miles
10. Whether it is included in the 2015–2018 TIP

## TABLE B.1
## LRTP - Universe of Projects - Projects Listed in the Previous LRTP, *Paths to a Sustainable Region*

| Project Type | Investment Program | PROJIS | Proponent(s) | Project Name | TIP/LRTP Status | CTPS Study | Estimated Cost | Project Length | 2015-2018 TIP |
|---|---|---|---|---|---|---|---|---|---|
| Arterial and Intersection | Bottleneck | 5399 | Salem | Reconstruction of Bridge Street, from Flint Street to Washington Street | LRTP 2016-20 | N/A | $16,613,000 | 0.4 | N/A |
| Arterial and Intersection | Bottleneck | 601630 | Weymouth | Route 18 Widening | LRTP 2016-20 | N/A | $59,000,000 | 4.0 | X |
| Arterial and Intersection | Bottleneck | 604935 | Woburn | Montvale Avenue Widening | LRTP 2016-20 | N/A | $4,225,256 | | X |
| Arterial and Intersection | Major Infrastructure | 29492 | Bedford | Middlesex Turnpike Phase III | LRTP 2016-20 | N/A | $26,935,171 | | X |
| Arterial and Intersection | Major Infrastructure | 606226 | Boston | Reconstruction of Rutherford Avenue, from City Square to Sullivan Square | LRTP 2016-20 | N/A | $109,967,000 | 2.9 | N/A |
| Arterial and Intersection | Major Infrastructure | 606109 | Framingham | Intersection Improvements at Route 126/135/MBTA & CSX Railroad | LRTP 2026-30 | N/A | $115,000,000 | 0.2 | N/A |
| Arterial and Intersection | Major Infrastructure | 606635 | Newton, Needham (MassDOT) | Reconstruction of Highland Avenue, Needham Street & Charles River Bridge, from Webster Street to Route 9 | LRTP 2021-25 | N/A | $18,000,000 | 3.0 | N/A |
| Bicycle and Pedestrian | Bike Network | N/A | Stow, Hudson | Assabet River Rail Trail | LRTP 2016-20 | N/A | $16,285,600 | 3.6 | N/A |
| Bridge | | 604996 | Woburn | Bridge Replacement, New Boston Street over MBTA | LRTP 2016-20 | N/A | $8,297,198 | 0.3 | N/A |
| Major Highway | Bottleneck | N/A | Braintree (MassDOT) | I-93/Route 3 Interchange (Braintree Split) | LRTP 2031-35 | 2006 | $53,289,000 | N/A | N/A |
| Major Highway | Major Infrastructure | 605012 | Malden, Revere, Saugus (MassDOT) | Reconstruction & Widening on Route 1, from Route 60 to Route 99 | LRTP 2031-35 | N/A | $236,078,000 | 2.1 | N/A |
| Major Highway | Major Infrastructure | 605605 (608097; 608096) | Reading, Stoneham, Wakefield, Woburn (MassDOT) | "Interchange Improvements to I-93/I-95 ((1) Washington Street Bridge over I-95 (2) Improvements along Route 128/I-95 MB Add-a-Lane/Exit 38/Route 28 Reconfiguration (3) Modifications to Interchange 38 in Reading, Stoneham and Wakefield)" | LRTP 2026-30 | N/A | $339,100,000 | 16.5 | N/A |
| Major Highway | Major Infrastructure | 87790 | Canton, Dedham, Norwood (MassDOT) | Interchange Improvements at I-95/I-93 (Non-Federal Funds) | LRTP 2016-2020 | N/A | $177,414,000 | N/A | X |
| Major Highway | Major Infrastructure | 606146 | Canton, Norwood, Westwood (MassDOT) | Ramp Construction on I-95 (NB) and Improvements on Dedham Street/Canton Street (Non-Federal Funds) | LRTP 2013-2015 | N/A | $51,000,000 | N/A | X |
| Transit | Transit Capacity | N/A | MPO | Green Line Extension Phase II from College Avenue to Mystic Valley Parkway/Route 16 | LRTP 2016-2025 | N/A | $190,000,000 | N/A | X |

## TABLE B.2
## LRTP - Universe of Projects - Projects That Add Capacity to the System/Cost More than $20 million

| Project Type | Investment Program | PROJIS | Proponent(s) | Project Name | TIP/LRTP Status | CTPS Study | Estimated Cost | Project Length | 2015-2018 TIP |
|---|---|---|---|---|---|---|---|---|---|
| Arterial and Intersection | Bottleneck | N/A | Brookline, Newton | Route 9 Capacity Improvements | Conceptual | N/A | N/A | N/A | N/A |
| Arterial and Intersection | Bottleneck | 604619 | Lexington | Route 4/225 (Bedford Street) and Hartwell Avenue | Pre-TIP | N/A | $23,221,000 | N/A | N/A |
| Arterial and Intersection | Interchange | N/A | Revere (MassDOT) | Mahoney Circle Grade Separation | Conceptual | N/A | $60,000,000 | N/A | N/A |
| Arterial and Intersection | Interchange | N/A | Revere (MassDOT) | Route 1/Route 16 Connector | Conceptual | N/A | N/A | N/A | N/A |
| Arterial and Intersection | Interchange | N/A | Revere (MassDOT) | Route 1A/Route 16 Connector | Conceptual | N/A | N/A | N/A | N/A |
| Arterial and Intersection | Intersection Improvements | N/A | MassPort, MassDOT, MBTA, Boston | South Boston Transportation Study - Cypher Street extension from D Street to E Street and reconstruct and extend E Street from Cypher Street to Summer Street | Conceptual | 2015 | $9,700,000 | N/A | N/A |
| Arterial and Intersection | Intersection Improvements | N/A | MassPort, MassDOT, MBTA, Boston | South Boston Transportation Study - New Summer Street north/south connector to Northern Avenue/Haul Road/Drydock Avenue | Conceptual | 2015 | N/A | N/A | N/A |
| Arterial and Intersection | Intersection Improvements | N/A | MassDOT | Route 1 Intersection Signalization (Corridorwide) | Conceptual | N/A | N/A | N/A | N/A |
| Arterial and Intersection | Major Infrastructure | 602091 | Concord | Improvements & Upgrades to Concord Rotary (Routes 2/2A/119) | Pre-TIP | 1995 | $98,900,000 | N/A | N/A |
| Arterial and Intersection | Major Infrastructure | 607981 | Somerville (MassDOT) | McGrath Boulevard Project | Pre-TIP | N/A | $65,000,000 | N/A | N/A |
| Arterial and Intersection | Major Infrastructure | N/A | CTPS Study | Route 30 (Cochituate Road) in Framingham and Natick | Conceptual | 2013 | N/A | N/A | N/A |
| Arterial and Intersection | | N/A | Boston | Boardman Street at Route 1A | Conceptual | 1990 | $13,686,000 | 0.1 | N/A |
| Arterial and Intersection | | N/A | Milford | Veteran's Memorial Drive/Alternate Route | Conceptual | N/A | N/A | N/A | N/A |
| Arterial and Intersection | | N/A | Rockland | Completion of the S. Weymouth Naval Air Station - Widening Reservoir Park Drive and Hingham Street | Conceptual | N/A | N/A | N/A | N/A |
| Freight | Freight Movement | N/A | Boston | Charlestown Haul Road | Conceptual | N/A | N/A | N/A | N/A |
| Freight | Freight Movement | N/A | Boston | Conley Rail Service | Conceptual | N/A | N/A | N/A | N/A |
| Major Highway | Bottleneck | N/A | CTPS Study | Extend I-93 High-Occupancy Vehicle Lane into the City (Somerville) | Conceptual | N/A | N/A | N/A | N/A |
| Major Highway | Bottleneck | N/A | CTPS Study | I-495 Capacity Improvements (Littleton to Wrentham) | Conceptual | N/A | N/A | N/A | N/A |
| Major Highway | Bottleneck | N/A | CTPS Study | I-93 Capacity Improvements (Boston to Braintree) | Conceptual | N/A | N/A | N/A | N/A |
| Major Highway | Bottleneck | N/A | CTPS Study | I-95 Capacity Improvements (Canton to Foxborough) | Conceptual | N/A | N/A | N/A | N/A |
| Major Highway | Bottleneck | N/A | CTPS Study | Route 128 Capacity Improvements (Lynnfield to Peabody) | Conceptual | N/A | N/A | N/A | N/A |
| Major Highway | Bottleneck | N/A | CTPS Study | Route 128 HOV (Wellesley to Woburn) | Conceptual | N/A | N/A | N/A | N/A |
| Major Highway | Bottleneck | N/A | CTPS Study | Route 2 Capacity Improvements (Acton to Lexington) | Conceptual | N/A | N/A | N/A | N/A |
| Major Highway | Bottleneck | N/A | CTPS Study | Route 24 Capacity Improvements (Taunton to Randolph) | Conceptual | N/A | N/A | N/A | N/A |
| Major Highway | Bottleneck | N/A | CTPS Study | Interstate 93 Capacity Improvements (Somerville to Woburn) | Conceptual | N/A | N/A | N/A | N/A |
| Major Highway | Bottleneck | 604638 | Danvers, Peabody (MassDOT) | Mainline Improvements on Route 128 (Phase II) | Pre-TIP | N/A | $23,776,000 | 1.7 | N/A |
| Bridge | Interchange | 605313 | Natick | Bridge Replacement, Route 27 (North Main Street) over Route 9 (Worcester Street) and Interchange Improvements | Pre-TIP | N/A | $25,793,370 | N/A | N/A |
| Major Highway | Interchange | 607977 | Hopkinton, Westborough (MassDOT) | Reconstruction of I-90/I-495 Interchange | Pre-TIP | N/A | $220,000,000 | 2.0 | N/A |
| Major Highway | Interchange | N/A | Newton | New Route 128 Ramp to Riverside Station | Conceptual | N/A | N/A | N/A | N/A |
| Major Highway | Interchange | N/A | Wilmington | I-93/Route 125/Ballardvale Road | Conceptual | N/A | N/A | N/A | N/A |
| Major Highway | Interchange | 607727 | Beverly | Interchange Reconstruction at Route 128/Exit 19 at Brimbal Avenue (Phase II) | Pre-TIP | N/A | $23,000,000 | N/A | N/A |
| Major Highway | Interchange | N/A | Boston | Massachusetts Turnpike Back Bay Exit | Conceptual | N/A | N/A | N/A | N/A |
| Major Highway | Interchange | 603345 | Hudson, Marlborough (MassDOT) | Reconstruction on Routes I-290 and 495 and Bridge Replacement | Pre-TIP | N/A | $100,000,000 | 2.0 | N/A |
| Major Highway | Interchange | N/A | Randolph | I-93/Route 24 Interchange | Conceptual | N/A | N/A | N/A | N/A |

*(cont.)*

## TABLE B.2 (Cont.)
## LRTP - Universe of Projects - Projects That Add Capacity to the System/Cost More than $20 million

| Project Type | Investment Program | PROJIS | Proponent(s) | Project Name | TIP/LRTP Status | CTPS Study | Estimated Cost | Project Length | 2015-2018 TIP |
|---|---|---|---|---|---|---|---|---|---|
| Major Highway | Interchange | 601513 | Saugus (MassDOT) | Interchange Reconstruction at Walnut Street & Route 1 (Phase II) | Pre-TIP | N/A | $18,612,130 | 1.2 | N/A |
| Major Highway | Interchange | 607701 | Southborough, Westborough (MassDOT) | Improvements on Route 9 at I-495 Interchange, from Computer Drive/ Research Drive to Route 9/Crystal Road Intersection | Pre-TIP | N/A | $25,000,000 | 4.4 | N/A |
| Major Highway | Interchange | | Boston (MassDOT) | Allston Interstate 90 Massachusetts Turnpike Interchange Improvement Program | Pre-TIP | | $260,000,000 | | |
| Major Highway | Bridge | | Boston | South Boston Transportation Study - Northern Avenue Bridge reconstruction | Conceptual | | N/A | | |
| Major Highway | Major Infrastructure | 608128 | MassDOT | Boston-Southeast Expressway Modification (Southampton Interchange) | Conceptual | N/A | $143,750,000 | | N/A |
| Major Highway | Major Infrastructure | N/A | MassDOT | Route 3 South Express Toll Lanes | Conceptual | N/A | $800,000,000 | | N/A |
| Transit | Transit Capacity | N/A | CTPS Study | Build New Busways to Alewife Station (Cambridge) | Conceptual | N/A | N/A | N/A | N/A |
| Transit | Transit Capacity | N/A | CTPS Study | Construction of new commuter rail stations in Milford and/or Hopedale on the Franklin Line | Conceptual | 2012 | $126-150 million (capital) $3.1-4.3 (operating) | N/A | N/A |
| Transit | Transit Capacity | N/A | MassDOT/MBTA | South Station Expansion Project | Conceptual | N/A | N/A | N/A | N/A |
| Transit | Transit Capacity | N/A | MassDOT/MBTA | New Worcester Line Commuter Rail Station in Allston (West Station) | Conceptual | N/A | $200,000,000 | N/A | N/A |
| Transit | Transit Capacity | N/A | MassPort, MassDOT, MBTA | T Under D (South Boston) | Conceptual | N/A | N/A | N/A | N/A |
| Transit | Transit Capacity | N/A | MassPort, MassDOT, MBTA, Boston | South Boston Transportation Study - Extension of Silver Line to Dudley Square | Conceptual | 2015 | N/A | N/A | |
| Transit | Transit Capacity | N/A | Private - New Balance | Brighton Landing Commuter Rail Station | Pre-TIP | | $25,000,000 | N/A | |
| Transit | Transit Capacity | N/A | MassDOT/MBTA | Maintenance Facilities | Conceptual | N/A | N/A | N/A | N/A |
| Transit | Transit Capacity | N/A | MassDOT/MBTA | Orient Heights Maintenance Facility Renovation Phase III | Conceptual | N/A | N/A | N/A | N/A |
| Transit | Transit Capacity | N/A | Waltham | Fitchburg Commuter Rail - Multi-Modal Transit Center | | N/A | N/A | N/A | N/A |
| Transit | Transit Extension | N/A | MassDOT/MBTA | Urban Rail Service (DMU or EMU) "A" - Riverside to South Station via Worcester CR ROW | Conceptual | N/A | N/A | N/A | N/A |
| Transit | Transit Extension | N/A | MassDOT/MBTA | Urban Rail Service (DMU or EMU) "B" - Allston to North Station via Grand Junction ROW thru Cambridge | Conceptual | N/A | N/A | N/A | N/A |
| Transit | Transit Extension | N/A | MassDOT/MBTA | Urban Rail Service (DMU or EMU) "C" - Back Bay to the Convention Center (BCEC) via Worcester CR ROW | Conceptual | N/A | N/A | N/A | N/A |
| Transit | Transit Extension | N/A | MassDOT/MBTA | Urban Rail Service (DMU or EMU) "D" - Route 128 Station to South Station via Fairmount CR ROW | Conceptual | N/A | N/A | N/A | N/A |
| Transit | Transit Extension | N/A | MassDOT/MBTA | Urban Rail Service (DMU or EMU) "E" - Lynn to North Station via Newburyport/Rockport CR ROW | Conceptual | N/A | N/A | N/A | N/A |
| Transit | Transit Extension | N/A | MassDOT/MBTA | Urban Rail Service (DMU or EMU) "F" - Anderson/Woburn to North Station via Lowell CR ROW | Conceptual | N/A | N/A | N/A | N/A |
| Transit | Transit Extension | N/A | MassDOT/MBTA | Operate Weekday Commuter Rail Service to Foxboro | Conceptual | N/A | N/A | N/A | N/A |
| Transit | Transit Extension | N/A | MVPC | Bus on Shoulder | Conceptual | 2014 | N/A | | N/A |
| Transit | Transit Extension | N/A | Public Input | Improved Cross-Town or Circumferential Transit | Conceptual | N/A | N/A | N/A | N/A |
| Transit | Transit Extension | N/A | Public Input | Improved connections between North and South Station | Conceptual | N/A | N/A | N/A | N/A |
| Transit | Transit Modernization | N/A | Natick | Natick Center MBTA Commuter Rail Station Upgrades | Conceptual | N/A | N/A | N/A | N/A |
| Transit | Transit Modernization | N/A | Quincy | Quincy Center Multimodal MBTA Station | Conceptual | N/A | N/A | N/A | N/A |
| Transit | N/A | N/A | MassDOT/MBTA | Improved Inner Harbor Ferry | Conceptual | N/A | N/A | N/A | N/A |
| Transit | N/A | N/A | MassDOT/MBTA | Improved Ferry Service from South Shore Communities to Boston | Conceptual | N/A | N/A | N/A | N/A |
| Transit | Ferry Service | N/A | MassPort, MassDOT, MBTA, Boston | South Boston Transportation Study - New or expanded ferry service and water transportation infrastructure | Conceptual | 2015 | N/A | N/A | |
| Transit | Ferry Service | N/A | Winn Resort/ Revere | Water transportation vessels and dock facilities | Conceptual | | N/A | N/A | |

## TABLE B.3
## LRTP - Universe of Projects - Projects That Do Not Add Capacity to the System/Cost Under $20 million

| Project Type | Investment Program | PROJIS | Proponent(s) | Project Name | TIP/LRTP Status | CTPS Study | Estimated Cost | Project Length | 2015-2018 TIP |
|---|---|---|---|---|---|---|---|---|---|
| Arterial and Intersection | Complete Streets | 604123 | Ashland | Reconstruction on Route 126 (Pond Street), from the Framingham T.L. to the Holliston T.L. | Pre-TIP | N/A | $13,277,000 | 1.7 | N/A |
| Arterial and Intersection | Complete Streets | 606453 | Boston | Improvements on Boylston Street, from Intersection of Brookline Avenue & Park Drive to Ipswich Street | Pre-TIP | N/A | $6,555,000 | 0.6 | N/A |
| Arterial and Intersection | Complete Streets | 601274 | Boston | Reconstruction of Tremont Street, from Court Street to Boylston Street | Pre-TIP | N/A | $2,681,260 | 0.6 | N/A |
| Arterial and Intersection | Complete Streets | N/A | Chelsea | Reconstruction of Beacham and Williams Street, from Spruce Street to the Everett City Line | Conceptual | N/A | N/A | 0.5 | N/A |
| Arterial and Intersection | Complete Streets | 608007 | Cohasset | Corridor Improvements and Related Work on Justice Cushing Highway (Route 3A), from Beechwood Street to the Scituate Town Line | Pre-TIP | 2013 | $4,000,200 | 0.8 | N/A |
| Arterial and Intersection | Complete Streets | 606896 | CTPS Study | Route 203 (Gallivan Street in Boston) | Conceptual | 2012 | $11,500,000 | N/A | N/A |
| Arterial and Intersection | Complete Streets | 606897 | CTPS Study | Route 203 (Morton Street in Boston) | Conceptual | 2012 | $11,500,000 | N/A | N/A |
| Arterial and Intersection | Complete Streets | N/A | CTPS Study | Route 114 in Danvers | Conceptual | 2012 | N/A | | N/A |
| Arterial and Intersection | Complete Streets | N/A | CTPS Study | Reading - Main Street (Route 28) from South Street to Washington Street | Conceptual | 2013 | N/A | N/A | N/A |
| Arterial and Intersection | Complete Streets | 602310 | Danvers | Reconstruction on Collins Street, from Sylvan Street to Centre & Holten Streets | Pre-TIP | N/A | $7,300,000 | 0.9 | N/A |
| Arterial and Intersection | Complete Streets | N/A | Everett | Beacham Street | Conceptual | N/A | N/A | | N/A |
| Arterial and Intersection | Complete Streets | 607652 | Everett | Reconstruction of Ferry Street, South Ferry Street and a Portion of Elm Street | Pre-TIP | 2013 | $6,440,000 | 1.6 | N/A |
| Arterial and Intersection | Complete Streets | 601359 | Franklin | Reconstruction of Pleasant Street, from Main Street to Chestnut Street | Pre-TIP | N/A | $5,378,680 | 2.4 | N/A |
| Arterial and Intersection | Complete Streets | 604377 | Gloucester | Washington Street And Railroad Avenue | Pre-TIP | N/A | $4,600,000 | 1.3 | N/A |
| Arterial and Intersection | Complete Streets | 607309 | Hingham | Reconstruction and Related Work on Derby Street from Pond Park Road to Cushing Street | Pre-TIP | N/A | $3,840,661 | 0.8 | N/A |
| Arterial and Intersection | Complete Streets | 606501 | Holbrook | Reconstruction of Union Street (Route 139), from Linfield Street to Centre Street/ Water Street | Pre-TIP | N/A | $2,471,136 | 0.9 | N/A |
| Arterial and Intersection | Complete Streets | 606043 | Hopkinton | Signal & Intersection Improvements on Route 135 | Pre-TIP | N/A | $7,235,377 | 0.8 | N/A |
| Arterial and Intersection | Complete Streets | 601607 | Hull | Reconstruction of Atlantic Avenue and Related Work, from Nantasket Avenue to Cohasset Town Line | Pre-TIP | N/A | $5,175,277 | 1.3 | N/A |
| Arterial and Intersection | Complete Streets | 607409 | Lexington | Reconstruction on Massachusetts Avenue, from Marrett Road to Pleasant Street | Pre-TIP | 2008 | $4,899,166 | 0.7 | N/A |
| Arterial and Intersection | Complete Streets | 602077 | Lynn | Reconstruction on Route 129 (Lynnfield Street), from Great Woods Road to Wyoma Square | Pre-TIP | N/A | $3,457,578 | 1.0 | N/A |
| Arterial and Intersection | Complete Streets | 604810 | Marlborough | Route 85 | TIP - 2016 | N/A | $5,144,104 | 1.1 | X |
| Arterial and Intersection | Complete Streets | 607428 | Milford | Resurfacing & Intersection Improvements on Route 16 (Main Street), from Water Street to the Hopedale T.L. | Pre-TIP | N/A | $5,417,832 | 0.6 | N/A |
| Arterial and Intersection | Complete Streets | 608045 | Milford | Rehabilitation on Route 16, from Route 109 to Beaver Street | Pre-TIP | N/A | $2,700,000 | 0.6 | N/A |
| Arterial and Intersection | Complete Streets | 604206 | Milton | Rehabilitation of Central Avenue, from Brook Road to Eliot Street | Pre-TIP | N/A | $2,535,886 | 0.9 | N/A |
| Arterial and Intersection | Complete Streets | 605034 | Natick | Reconstruction of Route 27 (North Main Street), from North Avenue to the Wayland Town Line | Pre-TIP | N/A | $13,090,726 | 2.2 | N/A |
| Arterial and Intersection | Complete Streets | 601704 | Newton | Reconstruction & Signal Improvements on Walnut Street, from Homer Street to Route 9 | Pre-TIP | N/A | $4,648,360 | 1.3 | N/A |
| Arterial and Intersection | Complete Streets | 600932 | Newton | Reconstruction on Route 30 (Commonwealth Avenue), from Weston Town Line to Auburn Street | Pre-TIP | N/A | $2,208,000 | 1.2 | N/A |
| Arterial and Intersection | Complete Streets | N/A | CTPS Study | Washington Street - Chestnut Street to Church Street | Conceptual | 2015 | $15,000,000 | 2.0 | N/A |
| Arterial and Intersection | Complete Streets | 605708 | Sharon | Signal and Intersection Improvements on South Main Street | Pre-TIP | N/A | $2,984,345 | 0.8 | N/A |
| Arterial and Intersection | Complete Streets | 604989 | Southborough | Route 30 | TIP - 2017 | N/A | $6,345,000 | | N/A |
| Arterial and Intersection | Complete Streets | 602261 | Walpole (MassDOT) | Reconstruction of Route 1A (Main Street), from the Norwood Town Line to Route 27 | Pre-TIP | N/A | $15,886,000 | 2.1 | N/A |
| Arterial and Intersection | Complete Streets | 600671 | Walpole (MassDOT) | Reconstruction of Route 1A, from Common Street to the Norfolk Town Line | Pre-TIP | N/A | $15,000,000 | 1.9 | N/A |
| Arterial and Intersection | Complete Streets | 607777 | Watertown | Rehabilitation of Mount Auburn Street (Route 16) | Pre-TIP | N/A | $12,233,125 | 1.8 | N/A |



*(cont.)*

## TABLE B.3 (Cont.)
## LRTP - Universe of Projects - Projects That Do Not Add Capacity to the System/Cost Under $20 million

| Project Type | Investment Program | PROJIS | Proponent(s) | Project Name | TIP/LRTP Status | CTPS Study | Estimated Cost | Project Length | 2015-2018 TIP |
|---|---|---|---|---|---|---|---|---|---|
| Arterial and Intersection | Complete Streets | 608051 | Wilmington | Reconstruction on Route 38 (Main Street), from Route 62 to the Woburn City Line | Pre-TIP | N/A | $9,108,000 | 2.1 | N/A |
| Arterial and Intersection | Complete Streets | 607244 | Winthrop | Reconstruction and Related Work along Winthrop Street and Revere Street Corridor | Pre-TIP | N/A | $5,040,000 | 1.8 | N/A |
| Arterial and Intersection | Complete Streets | 607340 | Wellesley | Route 9 Corridor Enhancements | Pre-TIP | | $16,462,400 | 4.8 | |
| Arterial and Intersection | Complete Streets | 604745 | Wrentham | Reconstruction of Taunton Street (Route 152) | Pre-TIP | N/A | $3,945,871 | 0.9 | N/A |
| Arterial and Intersection | Intersection Improvements | 607748 | Acton | Intersection and Signal Improvements on State Route 2 and State Route 111 (Massachusetts Avenue) at Piper Road and Taylor Road | Pre-TIP | N/A | $520,000 | 0.1 | N/A |
| Arterial and Intersection | Intersection Improvements | N/A | Ashland | Intersection Improvements at Frankland Road and West Union Street (Route 135) | Conceptual | N/A | N/A | 0.1 | N/A |
| Arterial and Intersection | Intersection Improvements | 606117 | Boston | Traffic Signal Improvements at 11 Locations | Pre-TIP | N/A | $3,036,200 | 0.6 | N/A |
| Arterial and Intersection | Intersection Improvements | 605110 | Brookline | Intersection and Signal Improvements at Route 9 & Village Square (Gateway East) | TIP | N/A | $5,070,387 | | N/A |
| Arterial and Intersection | Intersection Improvements | N/A | Winn Resort/ Cambridge | Intersection Improvements at Land Boulevard/O'Brien Highway | Conceptual | | N/A | | |
| Arterial and Intersection | Intersection Improvements | N/A | CTPS Study | Franklin/West Street, Braintree Intersection improvements | Conceptual | 2013 | N/A | N/A | X |
| Arterial and Intersection | Intersection Improvements | N/A | CTPS Study | Marshfield - Careswell Street (Route 139) and Webster Street Intersection | Conceptual | 2012 | N/A | N/A | N/A |
| Arterial and Intersection | Intersection Improvements | N/A | CTPS Study | Milford - Route 140 at South Main Street | Conceptual | 2013 | | N/A | N/A |
| Arterial and Intersection | Intersection Improvements | N/A | CTPS Study | Reconstruct Intersection at Southern Artery (Route 3A) at Sea Street/Coddington Street and at McGrath Highway/Field Street, Quincy | Conceptual | 2012 | $750,000-1,0000,000 | N/A | N/A |
| Arterial and Intersection | Intersection Improvements | N/A | CTPS Study | Revere - Crescent Avenue and Winthrop Avenue Intersection | Conceptual | 2012 | N/A | N/A | N/A |
| Arterial and Intersection | Intersection Improvements | N/A | CTPS Study | Revere - Safety Improvements for Pedestrians at Park Avenue and Dale Street Intersection | Conceptual | 2013 | N/A | N/A | N/A |
| Arterial and Intersection | Intersection Improvements | N/A | CTPS Study | Intersection Improvements Turnpike Road (Route 9) at Central Street/Oak Hill Road in Southborough | Conceptual | 2012 | N/A | N/A | N/A |
| Arterial and Intersection | Intersection Improvements | 606002 | Duxbury | Signal Installation at Route 3 (NB & SB) Ramps & Route 3A (Tremont St) | Pre-TIP | N/A | $2,400,000 | 0.5 | N/A |
| Arterial and Intersection | Intersection Improvements | N/A | Duxbury | Intersection Improvements at Route 3A and Route 139 | Conceptual | N/A | N/A | 0.1 | N/A |
| Arterial and Intersection | Intersection Improvements | 605168 | Hingham | Intersection Improvements at Route 3A/Summer Street Rotary | Pre-TIP | N/A | $1,780,644 | 0.1 | N/A |
| Arterial and Intersection | Intersection Improvements | 600518 | Hingham (MassDOT) | Intersection Improvements at Derby Street, Whiting Street (Route 53) and Gardner Street | Pre-TIP | 2003 | $2,827,048 | 0.4 | N/A |
| Arterial and Intersection | Intersection Improvements | 607255 | Holbrook | Intersection improvements and related work at Weymouth Street/Pine Street/ Sycamore Street | Pre-TIP | 2011 | $1,016,544 | | N/A |
| Arterial and Intersection | Intersection Improvements | N/A | Holbrook | Intersection Improvements at South Franklin Street and King Road | Conceptual | N/A | N/A | 0.1 | N/A |
| Arterial and Intersection | Intersection Improvements | N/A | Hudson | Intersection Improvements at Lincoln Street and Cox Street and Packard Street | Conceptual | 2011 | N/A | 0.1 | N/A |
| Arterial and Intersection | Intersection Improvements | N/A | Hudson | Upgrades to the Route 85 and Route 62 Rotary | Conceptual | N/A | N/A | 0.1 | N/A |
| Arterial and Intersection | Intersection Improvements | N/A | Lynn | Intersection Improvements at Boston Street and Hamilton Street | Conceptual | N/A | N/A | 0.1 | N/A |
| Arterial and Intersection | Intersection Improvements | N/A | Lynn | Intersection Improvements at Route 1A Lynnway and Blossom Street | Conceptual | N/A | N/A | 0.1 | N/A |
| Arterial and Intersection | Intersection Improvements | N/A | Lynn | Intersection Improvements at Route 1A Lynnway and Market Street | Conceptual | N/A | N/A | 0.1 | N/A |
| Arterial and Intersection | Intersection Improvements | 604231 | Marlborough | Intersection & Signal Improvements on Route 20 (East Main Street/Boston Post Road) at Concord Road | Pre-TIP | N/A | $1,706,600 | 0.2 | N/A |
| Arterial and Intersection | Intersection Improvements | N/A | MassDOT | Route 1 Intersection Signalization (Corridorwide) | Conceptual | N/A | N/A | N/A | N/A |
| Arterial and Intersection | Intersection Improvements | N/A | Medfield | Intersection Improvements at Route 109 and Hartford Street | Conceptual | N/A | N/A | 0.1 | N/A |
| Arterial and Intersection | Intersection Improvements | N/A | Milton | Intersection Improvements at Blue Hills Parkway and Brook Road | Conceptual | N/A | N/A | 0.1 | N/A |
| Arterial and Intersection | Intersection Improvements | 605857 | Norwood | Intersection Improvements at Route 1 & University Avenue/Everett Street | Pre-TIP | 1999 | $3,780,000 | 0.2 | N/A |
| Arterial and Intersection | Intersection Improvements | 606130 | Norwood | Intersection Improvements at Route 1A & Upland Road/Washington Street & Prospect Street/Fulton Street | Pre-TIP | N/A | $3,275,390 | 0.2 | N/A |
| Arterial and Intersection | Intersection Improvements | N/A | Peabody | Signalize Intersection of Central Street and Tremont Street | Conceptual | N/A | N/A | 0.1 | N/A |

*(cont.)*

## TABLE B.3 (cont.)
## LRTP - Universe of Projects - Projects That Do Not Add Capacity to the System/Cost Under $20 million

| Project Type | Investment Program | PROJIS | Proponent(s) | Project Name | TIP/LRTP Status | CTPS Study | Estimated Cost | Project Length | 2015-2018 TIP |
|---|---|---|---|---|---|---|---|---|---|
| Arterial and Intersection | Intersection Improvements | N/A | Randolph | Route 28 (N. Main Street) and Liberty Street Intersections | Conceptual | N/A | N/A | 0.1 | N/A |
| Arterial and Intersection | Intersection Improvements | N/A | Randolph | Route 28 (N. Main Street) and West Street Intersection | Conceptual | N/A | N/A | 0.1 | N/A |
| Arterial and Intersection | Intersection Improvements | N/A | Somerville | Intersection Improvements at Cross Street and Pearl Street | Conceptual | N/A | N/A | 0.1 | N/A |
| Arterial and Intersection | Intersection Improvements | N/A | Somerville | Intersection Improvements at Powderhouse Boulevard and Packard Avenue | Conceptual | N/A | N/A | 0.1 | N/A |
| Arterial and Intersection | Intersection Improvements | N/A | Winn Resort/ Somerville | Intersection Improvements at (1) I-93 SB Off-Ramp/I-93 NB On-Ramp/Mystic Avenue (2) I-93 Off-Ramp/McGrath Highway (3) Mystic Avenue/McGrath Highway (4) Mystic Avenue/I-93 SB On-Ramp (5) Broadway/McGrath Highway (6) Mystic Avenue/I-93 NB On-Ramp | Conceptual | | N/A | | |
| Arterial and Intersection | Intersection Improvements | 607249 | Sudbury | Intersection Improvements at Route 20 and Landham Road | Pre-TIP | 2010 | $1,980,000 | 0.1 | N/A |
| Arterial and Intersection | Intersection Improvements | N/A | Sudbury | Intersection Improvements at Route 20 and Horsepond Road | Conceptual | N/A | N/A | 0.1 | N/A |
| Arterial and Intersection | Intersection Improvements | N/A | Sudbury | Intersection Improvements at Route 20 and Wayside Inn Road | Conceptual | N/A | N/A | 0.1 | N/A |
| Arterial and Intersection | Intersection Improvements | N/A | Waltham | Intersection Improvements at Lexington Street and Glen Meadow | Conceptual | N/A | N/A | 0.1 | N/A |
| Arterial and Intersection | Intersection Improvements | N/A | Waltham | Intersection Improvements at Moody Street and Maple Street and High Street | Conceptual | N/A | N/A | 0.2 | N/A |
| Arterial and Intersection | Intersection Improvements | N/A | Waltham | Intersection Improvements at Totten Pond Road and Lexington Street and Bacon Street | Conceptual | N/A | N/A | 0.5 | N/A |
| Arterial and Intersection | Intersection Improvements | N/A | Waltham | Intersection Improvements at Trapelo Road and Forest Street | Conceptual | N/A | N/A | 0.1 | N/A |
| Arterial and Intersection | Intersection Improvements | 601579 | Wayland | Signal and intersection improvements at Route 27 (Main Street) and Route 30 (Commonwealth Road) | TIP | 2008 | $2,479,451 | N/A | N/A |
| Arterial and Intersection | Intersection Improvements | 605721 | Weymouth | Intersection Improvements at Middle Street, Libbey Industrial Parkway and Tara Drive | Pre-TIP | 2003 | $937,326 | 0.1 | N/A |
| Arterial and Intersection | Intersection Improvements | N/A | Wilmington | Intersection Improvements at Salem Street (Route 62) and Middlesex Avenue and High Street | Conceptual | N/A | N/A | 0.1 | N/A |
| Arterial and Intersection | Intersection Improvements | 608067 | Woburn | Intersection Reconstruction at Route 3 and Bedford Road and South Bedford Street | Pre-TIP | N/A | $1,440,000 | N/A | N/A |
| Arterial and Intersection | N/A | N/A | Arlington | Reconstruct Massachusetts Avenue (Phase 2), from Pond Lane to Water Street | Conceptual | N/A | N/A | 0.3 | N/A |
| Arterial and Intersection | N/A | N/A | Bedford | Reconstruct South Road, from Washington Street (Elm Brook) to Summer Street | Conceptual | N/A | N/A | 0.9 | N/A |
| Arterial and Intersection | N/A | N/A | Bedford | Reconstruct Wiggins Avenue | Conceptual | N/A | N/A | 0.9 | N/A |
| Arterial and Intersection | N/A | N/A | Bellingham | Reconstruct Maple Street, from Route 126 to Route 140 | Conceptual | N/A | N/A | 2.8 | N/A |
| Arterial and Intersection | N/A | N/A | Bellingham | Reconstruct Pulaski Boulevard (Route 126), from South Main Street to the Blackstone Town Line | Conceptual | N/A | N/A | 0.7 | N/A |
| Arterial and Intersection | N/A | N/A | Bellingham | Reconstruct Route 126 (South Main Street), from Pulaski Boulevard to Route 140 | Conceptual | N/A | N/A | 4.6 | N/A |
| Arterial and Intersection | N/A | N/A | Bellingham | Reconstruct Hartford Avenue, from North Main Street (Route 126) to the Mendon Town Line | Conceptual | N/A | N/A | 1.6 | N/A |
| Arterial and Intersection | N/A | N/A | Bolton | Reconstruct Route 85 (Hudson Road) | Conceptual | N/A | N/A | 1.6 | N/A |
| Arterial and Intersection | N/A | 53001 | Boston | Northern Avenue Connector Roads (Phase 1) | Conceptual | N/A | N/A | N/A | N/A |
| Arterial and Intersection | N/A | N/A | Boston | South Huntington Avenue | Conceptual | N/A | N/A | 0.2 | N/A |
| Arterial and Intersection | N/A | N/A | Boston | Huntington Avenue | Conceptual | N/A | N/A | 1.3 | N/A |
| Arterial and Intersection | N/A | N/A | Boston | Huntington Avenue | Conceptual | N/A | N/A | 0.3 | N/A |
| Arterial and Intersection | Intersection Improvements | N/A | Winn Resort/ Boston | Intersection Improvements at (1) Alford Street/Main Street/Sever Street/Cambridge Street (2) Cambridge Street/I-93 NB Off-Ramp (3) Dexter Street/Alford Street (4) Rutherford Avenue/Route 1 | Conceptual | | N/A | | |
| Arterial and Intersection | N/A | N/A | Burlington | Route 62 (Wilmington Road) | Conceptual | N/A | N/A | 1.6 | N/A |
| Arterial and Intersection | N/A | N/A | Burlington | Wheeler Road | Conceptual | N/A | N/A | 0.7 | N/A |
| Arterial and Intersection | N/A | N/A | Burlington | South Bedford Street | Conceptual | N/A | N/A | 0.6 | N/A |
| Arterial and Intersection | N/A | N/A | Chelsea | Reconstruct Spruce Street, from Everett Avenue and Sixth Street | Conceptual | N/A | N/A | 0.2 | N/A |

*(cont.)*

## TABLE B.3 (cont.)
## LRTP - Universe of Projects - Projects That Do Not Add Capacity to the System/Cost Under $20 million

| Project Type | Investment Program | PROJIS | Proponent(s) | Project Name | TIP/LRTP Status | CTPS Study | Estimated Cost | Project Length | 2015-2018 TIP |
|---|---|---|---|---|---|---|---|---|---|
| Arterial and Intersection | N/A | N/A | Chelsea | Reconstruct Broadway, from City Hall Ave to the Revere City Line | Conceptual | N/A | $10,000,000 | 1.0 | N/A |
| Arterial and Intersection | N/A | N/A | Chelsea | Spruce Street/Second Street/Carter Street Improvements | Conceptual | N/A | $8,000,000 | 1.2 | N/A |
| Arterial and Intersection | Intersection Improvements | N/A | Winn Resort/ Chelsea | Intersection Improvements at (1) Route 16/Washington Avenue (2) Route 16/ Everett Avenue (3) Route 16/Webster Avenue | Conceptual | | N/A | | |
| Arterial and Intersection | N/A | N/A | Concord | Reconstruction of Route 117 (Fitchburg Turnpike) | Conceptual | N/A | N/A | 1.0 | N/A |
| Arterial and Intersection | N/A | N/A | Concord | Reconstruction of Route 62 (Main St), Phase 3 | Conceptual | N/A | N/A | 0.8 | N/A |
| Arterial and Intersection | N/A | N/A | Concord | Cambridge Turnpike | Conceptual | N/A | N/A | N/A | N/A |
| Arterial and Intersection | N/A | N/A | CTPS Study | Route 138 Corridor (Canton, Milton, Stoughton) | Conceptual | N/A | N/A | N/A | N/A |
| Arterial and Intersection | N/A | N/A | Danvers | Improve Railroad Crossing at the Intersection of Holten Street and Burroughs Street | Conceptual | N/A | N/A | 0.1 | N/A |
| Arterial and Intersection | N/A | N/A | Everett | Reconstruction of Main Street, from Sweetser Circle to the Malden City Line | Conceptual | N/A | N/A | 0.9 | N/A |
| Arterial and Intersection | Intersection Improvements | N/A | Winn Resort/ Everett | Intersection Improvements at (1) Revere Beach Parkway/Mystic View Road/Santilli Highway/Route 99 Connector Improvements (2) Route 16/Broadway/Main Street (3) Broadway/Beacham Street (4) Broadway/Horizon Way (5) Broadway/Lynde Street (6) Broadway/Thorndike Street (7) Bow Street/Mystic Street (8) Bow Street/ Lynde Street (9) Bow Street/Thorndike Street (10) Beacham Street/Robin Street (11) Broadway/Bowdoin Street (12) Broadway/Norwood Street/Chelsea Street (13) Ferry Street/Broadway | Conceptual | | N/A | | |
| Arterial and Intersection | N/A | N/A | Framingham | Reconstruct Route 126 (Hollis Street), from Irving Street to the Ashland town line | Conceptual | N/A | N/A | 1.2 | N/A |
| Arterial and Intersection | N/A | N/A | Framingham | Reconstruction of Route 126, from Route 9 to Lincoln Street | Conceptual | 2000 | N/A | 1.2 | N/A |
| Arterial and Intersection | N/A | N/A | Framingham | Route 9/Route 126 Interchange | Conceptual | N/A | N/A | N/A | N/A |
| Arterial and Intersection | N/A | N/A | Franklin | Reconstruct Chestnut Street, from Route 140 to Pleasant Street | Conceptual | N/A | N/A | 2.1 | N/A |
| Arterial and Intersection | N/A | N/A | Franklin | Reconstruct Summer Street, from Route 140 to Wrentham Town Line | Conceptual | N/A | N/A | 2.5 | N/A |
| Arterial and Intersection | N/A | 607774 | Franklin | Resurfacing and Intersection Improvements on Route 140, from Beaver Street to I-495 Ramps | Conceptual | N/A | $4,200,000 | N/A | N/A |
| Arterial and Intersection | N/A | N/A | Franklin | Reconstruct Washington Street, from Bellingham Town Line to Prospect Street | Conceptual | N/A | N/A | 1.7 | N/A |
| Arterial and Intersection | N/A | N/A | Gloucester | Gloucester Rotary | Conceptual | N/A | N/A | N/A | N/A |
| Arterial and Intersection | N/A | N/A | Hudson | South Street | Conceptual | N/A | N/A | 0.3 | N/A |
| Arterial and Intersection | N/A | N/A | Hull | Manomet Avenue | Conceptual | N/A | N/A | 1.0 | N/A |
| Arterial and Intersection | N/A | N/A | Hull | Samoset Avenue | Conceptual | N/A | N/A | 1.1 | N/A |
| Arterial and Intersection | N/A | 605743 | Ipswich | Resurfacing & Related Work on Central & South Main Streets | Pre-TIP | N/A | $2,624,154 | 0.6 | N/A |
| Arterial and Intersection | N/A | N/A | Lexington | Waltham St | Conceptual | N/A | N/A | N/A | N/A |
| Arterial and Intersection | N/A | N/A | Lexington | Hayden Ave | Conceptual | N/A | N/A | 1.0 | N/A |
| Arterial and Intersection | N/A | N/A | Littleton | Harvard Street | Conceptual | N/A | N/A | 1.6 | N/A |
| Arterial and Intersection | N/A | N/A | Lynn | Broad Street/Lewis Street/Route 129 | Conceptual | N/A | N/A | 6.7 | N/A |
| Arterial and Intersection | N/A | N/A | Lynn | Route 129 (Boston St./Washington St.) | Conceptual | N/A | N/A | 0.1 | N/A |
| Arterial and Intersection | N/A | N/A | Lynn | Route 1A Lynn (GE Bridge Nahant Rotary) | Conceptual | N/A | N/A | 2.4 | N/A |
| Arterial and Intersection | N/A | N/A | Marlborough | Route 85 North (Bolton Street) | Conceptual | 2001 | N/A | 2.0 | N/A |
| Arterial and Intersection | N/A | 604811 | Marlborough | Reconstruction of Route 20 (East Main Street), from Main Street Easterly to Lincoln Street | Pre-TIP | N/A | $2,252,930 | 0.3 | N/A |
| Arterial and Intersection | N/A | N/A | Medfield | South Street | Conceptual | N/A | N/A | 1.3 | N/A |
| Arterial and Intersection | N/A | N/A | Medford | Medford Square Phase 2 Improvements | Conceptual | N/A | N/A | 0.1 | N/A |

*(cont.)*

## TABLE B.3 (cont.)
## LRTP - Universe of Projects - Projects That Do Not Add Capacity to the System/Cost Under $20 million

| Project Type | Investment Program | PROJIS | Proponent(s) | Project Name | TIP/LRTP Status | CTPS Study | Estimated Cost | Project Length | 2015-2018 TIP |
|---|---|---|---|---|---|---|---|---|---|
| Arterial and Intersection | Intersection Improvements | N/A | Winn Resort/ Medford | Intersection Improvements at (1) Mystic Valley Parkway/Fellsway/Middlesex Avenue (2) Mystic Valley Parkway/Route 16 Connector (3) Mystic Valley Parkway/ Mystic Avenue | Conceptual | | N/A | | |
| Arterial and Intersection | N/A | N/A | Medway | Route 109 (Milford Street) | Conceptual | N/A | N/A | 2.4 | N/A |
| Arterial and Intersection | N/A | N/A | Melrose | Reconstruct Lebanon Street, from Main Street to the Malden City Line | Conceptual | N/A | N/A | 1.0 | N/A |
| Arterial and Intersection | N/A | N/A | Melrose | Reconstruct Swains Pond Avenue, from Maple Terrace to the Malden City Line | Conceptual | N/A | N/A | 0.1 | N/A |
| Arterial and Intersection | N/A | N/A | Melrose | Reconstruct Swains Pond Avenue, from Grove Street to Wheeler Avenue | Conceptual | N/A | N/A | 0.3 | N/A |
| Arterial and Intersection | N/A | N/A | Melrose | Wyoming Avenue | Conceptual | N/A | N/A | 0.7 | N/A |
| Arterial and Intersection | N/A | N/A | MPO Identified Need | Route 1A Salem to Revere | Conceptual | N/A | N/A | | N/A |
| Arterial and Intersection | N/A | N/A | MPO Identified Need | Route 107 Western Ave at | Conceptual | N/A | N/A | | N/A |
| Arterial and Intersection | N/A | N/A | MPO Identified Need | Route 114 Peabody, Salem | Conceptual | N/A | N/A | | N/A |
| Arterial and Intersection | N/A | N/A | MPO Identified Need | Route 16 Fresh Pond Parkway and Alewife Brook Parkway | Conceptual | N/A | N/A | N/A | N/A |
| Arterial and Intersection | N/A | N/A | MPO Identified Need | Memorial Drive Cambridge | Conceptual | N/A | N/A | N/A | N/A |
| Arterial and Intersection | N/A | N/A | MPO Identified Need | Route 3A Marshfield to Quincy | Conceptual | N/A | N/A | N/A | N/A |
| Arterial and Intersection | N/A | N/A | MPO Identified Need | Route 28 Milton to Randolph | Conceptual | N/A | N/A | N/A | N/A |
| Arterial and Intersection | N/A | N/A | MPO Identified Need | Route 138 Milton | Conceptual | N/A | N/A | N/A | N/A |
| Arterial and Intersection | N/A | N/A | MPO Identified Need | Route 9 Southborough to Newton | Conceptual | N/A | N/A | N/A | N/A |
| Arterial and Intersection | N/A | N/A | MPO Identified Need | Route 16 Holliston to Newton | Conceptual | N/A | N/A | N/A | N/A |
| Arterial and Intersection | N/A | N/A | MPO Identified Need | Route 20 Weston | Conceptual | N/A | N/A | N/A | N/A |
| Arterial and Intersection | N/A | N/A | MPO Identified Need | Route 60 Improvements Arlington | Conceptual | N/A | N/A | N/A | N/A |
| Arterial and Intersection | N/A | N/A | MPO Identified Need | Route 30 Framingham | Conceptual | N/A | N/A | N/A | N/A |
| Arterial and Intersection | N/A | N/A | MPO Identified Need | Route 99 Everett | Conceptual | N/A | N/A | N/A | N/A |
| Arterial and Intersection | N/A | N/A | MPO Identified Need | Route 129 Wilmington to Reading | Conceptual | N/A | N/A | N/A | N/A |
| Arterial and Intersection | N/A | N/A | MPO Identified Need | Route 135 Wellesley to Natick | Conceptual | N/A | N/A | N/A | N/A |
| Arterial and Intersection | N/A | N/A | Needham | Highland Avenue | Conceptual | N/A | N/A | 1.3 | N/A |
| Arterial and Intersection | N/A | N/A | Newton | Washington St., Phase 2 (Perkins Street to Commonwealth Avenue) | Conceptual | N/A | N/A | 0.5 | N/A |
| Arterial and Intersection | N/A | N/A | North Reading | Park Street Improvements | Conceptual | N/A | N/A | 0.7 | N/A |
| Arterial and Intersection | N/A | N/A | Randolph | Reconstruction of Oak Street, from Devine Road to North Street | Conceptual | N/A | N/A | 1.2 | N/A |
| Arterial and Intersection | N/A | N/A | Reading | Haverhill Street Reconstruction | Conceptual | N/A | N/A | 2.5 | N/A |
| Arterial and Intersection | N/A | N/A | Reading | Streetscape Improvements on Haven & High Streets | Conceptual | N/A | N/A | 0.7 | N/A |
| Arterial and Intersection | Intersection Improvements | N/A | Winn Resort/ Revere | Intersection Improvements at Route 16/Route 1A/Route 60 | Conceptual | | N/A | | |
| Arterial and Intersection | N/A | N/A | Rockland | VFW Drive, Weymouth Street, Hingham Street | Conceptual | N/A | N/A | 4.3 | N/A |
| Arterial and Intersection | N/A | N/A | Somerville | Broadway East Somerville CMAQ | Conceptual | N/A | N/A | 0.1 | N/A |
| Arterial and Intersection | N/A | N/A | Southborough | Cordaville Road/Route 85 Rehabilitation | Conceptual | N/A | N/A | 2.6 | N/A |
| Arterial and Intersection | N/A | N/A | Sudbury | Old Sudbury Road (Route 27) | Conceptual | N/A | N/A | 0.1 | N/A |
| Arterial and Intersection | N/A | N/A | Walpole | Walpole Central Business District | Conceptual | N/A | N/A | N/A | N/A |
| Arterial and Intersection | N/A | N/A | Walpole | Elm St Improvements | Conceptual | N/A | N/A | 1.5 | N/A |
| Arterial and Intersection | N/A | N/A | Waltham | Wyman Street | Conceptual | N/A | N/A | 1.0 | N/A |
| Arterial and Intersection | N/A | N/A | Woburn | Route 38 (Main St.) Traffic Lights | Conceptual | N/A | N/A | 0.9 | N/A |
| Arterial and Intersection | N/A | N/A | | Air Force Road Rehabilitation | Conceptual | N/A | N/A | 0.4 | N/A |
| Arterial and Intersection | N/A | N/A | | Main St Reconstruction and Pedestrian Improvement | Conceptual | N/A | N/A | 5.2 | N/A |

*(cont.)*

## TABLE B.3 (cont.)
## LRTP - Universe of Projects - Projects That Do Not Add Capacity to the System/Cost Under $20 million

| Project Type | Investment Program | PROJIS | Proponent(s) | Project Name | TIP/LRTP Status | CTPS Study | Estimated Cost | Project Length | 2015-2018 TIP |
|---|---|---|---|---|---|---|---|---|---|
| Bicycle and Pedestrian | Bike Network | 607738 | Bedford | Minuteman Bikeway Extension, from Loomis Street to the Concord T.L. | Pre-TIP | N/A | $4,006,200 | 2.0 | N/A |
| Bicycle and Pedestrian | Bike Network | N/A | Berlin, Hudson, Sudbury, Waltham, Wayland, Weston | Mass Central Trail "Wayside Trail" from Waltham to Berlin | Conceptual | 1997 | N/A | 24.4 | N/A |
| Bicycle and Pedestrian | Bike Network | N/A | Boston | Linking the Corridors | Conceptual | N/A | N/A | 2.0 | N/A |
| Bicycle and Pedestrian | Bike Network | 607888 | Boston | Multi-use Path Construction on New Fenway | Pre-TIP | N/A | $1,702,618 | 0.4 | N/A |
| Bicycle and Pedestrian | Bike Network | N/A | Boxborough | Route 111 Trail | Conceptual | N/A | N/A | 0.1 | N/A |
| Bicycle and Pedestrian | Bike Network | 606316 | Brookline | Pedestrian bridge rehabilitation over MBTA off Carlton Street | TIP | N/A | $1,776,396 | | N/A |
| Bicycle and Pedestrian | Bike Network | N/A | Brookline | Emerald Necklace Bicycle and Pedestrian Crossings at Route 9 | Conceptual | N/A | $1,680,000 | 0.2 | N/A |
| Bicycle and Pedestrian | Bike Network | N/A | Lexington | West Lexington Greenway | Conceptual | N/A | N/A | 4.4 | N/A |
| Bicycle and Pedestrian | Bike Network | N/A | Lynn, Malden, Revere & Saugus | Bike to the Sea (Northern Strand) | Conceptual | 1996 | N/A | 8.4 | N/A |
| Bicycle and Pedestrian | Bike Network | N/A | Medford | Mystic River Linear Park | Conceptual | N/A | N/A | 1.6 | N/A |
| Bicycle and Pedestrian | Bike Network | 607732 | Natick | Cochituate Rail Trail, Phase Two | Pre-TIP | 2000 | $5,417,832 | 2.4 | N/A |
| Bicycle and Pedestrian | Bike Network | N/A | Peabody and Salem | Riverwalk/Greenway, Peabody Square to Salem Train Depot | Conceptual | N/A | N/A | N/A | N/A |
| Bicycle and Pedestrian | Bike Network | N/A | Salem | Canal Street Bikeway | Conceptual | N/A | $2,368,000 | 1.5 | N/A |
| Bicycle and Pedestrian | Bike Network | N/A | Scituate | Scituate Greenway | Conceptual | N/A | N/A | 2.6 | N/A |
| Bicycle and Pedestrian | Bike Network | N/A | Scituate | Pathway for all of Scituate and linking Commuter Rail | Conceptual | N/A | N/A | 17.1 | N/A |
| Bicycle and Pedestrian | Bike Network | N/A | Sudbury | Bruce Freeman Rail Trail, Phase 2D | Conceptual | N/A | N/A | 4.4 | N/A |
| Bicycle and Pedestrian | Bike Network | N/A | Sudbury | Bruce Freeman Rail Trail, Phase 2E | Conceptual | N/A | N/A | 1.3 | N/A |
| Bicycle and Pedestrian | Bike Network | N/A | Woburn | Woburn Loop Bikeway Project | Conceptual | N/A | N/A | 0.8 | N/A |
| Bicycle and Pedestrian | Clean Air and Mobility | N/A | Inner Core | Hubway Expansion | Conceptual | N/A | N/A | N/A | N/A |
| Bicycle and Pedestrian | Pedestrian Connections | 604993 | Cambridge | Innovation Boulevard Streetscape & Pedestrian Improvements, Between Main Street & Binney Street (Phase I) | Pre-TIP | N/A | $1,500,000 | 0.3 | N/A |
| Bicycle and Pedestrian | Pedestrian Connections | 607901 | Dedham | Pedestrian Improvements along Elm Street & Rustcraft Road Corridors | Pre-TIP | N/A | $3,312,000 | N/A | N/A |
| Bicycle and Pedestrian | Pedestrian Connections | 607899 | Dedham | Pedestrian Improvements along Bussey Street | Pre-TIP | N/A | $2,592,000 | 1.5 | N/A |
| Bicycle and Pedestrian | Pedestrian Connections | 608006 | Framingham | Pedestrian Hybrid Beacon Installation at Route 9 and Maynard Road | Pre-TIP | N/A | $886,228 | N/A | N/A |
| Enhancement | N/A | N/A | Boston | Harbor Islands National Park Access | Conceptual | N/A | N/A | N/A | N/A |
| Enhancement | N/A | N/A | Boston | Harbor Islands National Park and Long Island Pier Reconstruction | Conceptual | N/A | N/A | 0.3 | N/A |
| Enhancement | N/A | N/A | Boston | Long Island Pier Reconstruction | Conceptual | N/A | N/A | 0.1 | N/A |
| Enhancement | N/A | N/A | Boston | Long Island Pier | Conceptual | N/A | N/A | 0.2 | N/A |
| Enhancement | N/A | N/A | Medford | Medford Square Parking | Conceptual | N/A | N/A | 0.4 | N/A |
| Enhancement | N/A | N/A | Medford | Medford Square Water Taxi Landing and Related Park Improvements | Conceptual | N/A | N/A | N/A | N/A |
| Freight | Arterial and Intersection | N/A | Winn Resort/ Everett | Lower Broadway Truck Route | Conceptual | | N/A | | |
| Major Highway | Interchange | 604862 | Bellingham | Ramp Construction and Relocation, I-495 at Route 126 | Pre-TIP | N/A | $15,000,000 | 0.6 | N/A |
| Major Highway | Interchange | N/A | MassDOT | Coney Street Interchange with Route 95 | Conceptual | N/A | N/A | 0.6 | N/A |
| Major Highway | Interchange | N/A | Newton | I-90/Interchange 17 | Conceptual | N/A | N/A | N/A | N/A |
| Major Highway | Interchange | 607940 | Newton | Improvements of Route 128/I-95 & Grove Street | Pre-TIP | N/A | $10,000,055 | N/A | N/A |
| Major Highway | Interchange | N/A | Rockland | Route 3/Union St. | Conceptual | N/A | N/A | N/A | N/A |
| Major Highway | Interchange | N/A | Weston | Route 30/I-90 Interchange | Conceptual | N/A | N/A | N/A | N/A |
| Major Highway | Interchange | 603739 | Wrentham | Construction of I-495/Route 1A Ramps | Pre-TIP | N/A | $4,002,192 | 0.1 | N/A |

*(end)*

# C APPENDIX
# PROJECT EVALUATION

## INTRODUCTION

The MPO applied its goals and objectives as criteria to qualitatively evaluate the major infrastructure and capacity-adding highway projects that are in the Universe of Projects and Programs list (which had been sufficiently well defined to allow for analysis). Assessing how well projects would address the MPO's goals and objectives helped the MPO identify priority projects for its major infrastructure program. Table C.1 shows the evaluated major infrastructure projects and Table C.2 provides a summary of the evaluated projects. A memorandum documenting the evaluation process also is included.

BOSTON REGION METROPOLITAN PLANNING ORGANIZATION

Stephanie Pollack, MassDOT Secretary and CEO and MPO Chairman
Karl H. Quackenbush, Executive Director, MPO Staff

# *TECHNICAL MEMORANDUM*

**DATE:** **April 15, 2015**
**TO:** **Boston Region MPO**
**FROM:** **Sean Pfalzer and William Kuttner**
**RE:** **Long-Range Transportation Plan Evaluation Criteria**

## 1 OVERALL SCORING SYSTEM

For the 2040 LRTP, 38 projects classed as “major infrastructure” were evaluated by MPO staff. Based on these evaluations, MPO staff recommended inclusion of 13 of these projects in the LRTP, four of which were already programmed in the current TIP. Each of these 38 projects was given a numerical score, and this score to a large extent determined which projects were recommended for inclusion in the LRTP.

Each project was given a “high,” “medium,” or “low” rating in each of six rating categories. Expressing these ratings as numerical values of three, two, or one point respectively, the scores were summed resulting in a single numerical score for each project. While the scores could range from 18 points (six “high” scores) down to only 6 points, the 38 Major infrastructure projects ranged between 14 and 7 points.

Of the 13 projects recommended for inclusion in the LRTP, all had 11 or more points. Five projects had scores of at least 11 but were not recommended for inclusion because their costs were beyond the funding capabilities of the MPO regardless of their high scores.

### 1.1 Six Rating Categories

The rating categories were established based on the MPO’s adopted goals and focused on the primary goals addressed by Major Infrastructure projects:

- Safety
- System Preservation
- Capacity Management and Mobility (3 sub-categories include impacts to automobiles, buses, and pedestrian/bicyclists)
- Economic Vitality

The value of a project for each of these six areas was in turn characterized by a number of different factors. The evaluation criteria were grouped into the appropriate rating areas. MPO staff also identified or developed appropriate quantitative data and indices to help inform the scoring. As far as practicable, these criteria and indices had to be applied to all projects so that comparisons could be made between fundamentally dissimilar projects. More information on the evaluation criteria is presented below.

## 1.2 Role of Judgment in Determining a Score

Even with a reasonably complete set of planning-level evaluation data, the use of judgment is unavoidable in deciding which of the three scores to give projects for each of the six rating categories. There is, however, a structure within which judgment is applied. This process can be seen as a balancing of three factors:

- The needs in the proposed project area
- The criteria the proposed project addresses
- The impact a project can have in addressing the identified needs and advancing MPO goals

Of these three factors, the needs are perhaps best understood because they are derived from existing conditions. The configurations of proposed improvements are at this point conceptual and the extent and intensity of anticipated improvements can only be surmised.

Costs are not mentioned explicitly in these three factors. As a general rule, however, more costly projects will often have a larger impact. For instance, the safety and capacity of an obsolete intersection can be improved by rebuilding it to modern standards. In some instances constructing some kind of grade separation might be warranted. The costs will inevitably be greater but the benefits should also be greater. MPO staff accounted for cost to inform the safety rating for projects in order to compare projects across purpose and scale.

# 2 DEVELOPING SCORES IN EACH CATEGORY

One of the difficulties of scoring projects is choosing a scoring convention that will allow a valid comparison of dissimilar projects. Furthermore, fair and usable scoring conventions need to be developed separately for each of the six rating categories.

In developing a score it is important to consider the amount of improvement a project might be expected to achieve. This kind of project impact has been represented in this analysis by characterizing candidate projects by a very general “project concept.” The six project concepts used here are:

- Adding new grade separation
- Reconstructing of a major interchange
- Reconstructing of a minor interchange
- Significant widening of a road
- Minor widening of a road
- Reducing roadway capacity

The amount of improvement to safety and capacity in and near the project area will to some degree depend on the project concept.

The balance of this memo considers the rating categories individually. The indices, factors, and judgments that could result in a high, medium, or low score being assigned to a particular project are described and discussed for each of the six rating categories.

## 2.1 Safety

MPO staff maintains extensive databases of regional crash history, and these were used to assess the safety improvement needs for interchanges, express highways, and regional arterials. Crash history is measured using the "equivalent property damage only" index, abbreviated as EPDO. Crashes resulting in a fatality are given ten points, crashes resulting in injury five points, and property-damage-only crashes are given only one point. Given the relative infrequency of accidents, using the most recent three years of EPDO data in the candidate project areas gives a reasonable idea of the safety needs at that location.

Using the project-area EPDO values, staff developed indices that relate the crash history to project costs and projected users. Regional safety "hot spots" are identified by EPDO and may be addressed by candidate projects. EPDO related to specific modes and vehicle classes are also calculated and reviewed. These EPDO-based metrics include:

- Cost per EPDO ("cost effectiveness"): Estimated project cost divided by the EPDO value

- Average annual EPDO per 100,000,000 vehicles ("crash rate" or "risk"): Average annual EPDO value divided by average annual traffic volumes per 100,000,000 vehicles: ((EPDO/3)/(AADT*330))*100,000,000

- EPDO concentrations
    - Top 200 Crash Cluster Locations (Total EPDO)

  - Highway Safety Improvement Program (HSIP) Cluster (Total EPDO)
  - MPO-identified Truck Cluster (Truck-involved EPDO)
  - HSIP Bicycle Cluster (bicycle-involved EPDO)
  - HSIP Pedestrian Cluster (pedestrian-involved EPDO)

Choosing a score in the safety category requires comparing the severity of the safety problem with the improvement impact of the candidate project. As a general rule, the lower score of the two factors was the final score:

Low: Either the need or the project benefit is low. Other factor may be higher

Medium: Either the need or the project benefit is medium. Other factor may be higher

High: Both the safety need and project benefit is high

In assessing the project impact the project concept offers some general guidance:

| | |
|---|---|
| • Adding new grade separation | Low to medium |
| • Reconstructing of a major interchange | Medium to high |
| • Reconstructing of a minor interchange | Low to high |
| • Significant widening of a road | Low to high |
| • Minor widening of a road | Low to high |
| • Reducing roadway capacity | Medium |

An example of an improvement with a high safety benefit would be one that eliminates peak-period use of breakdown lanes on express highways or eliminates dangerous weaving movements at major interchanges.

## 2.2 System Preservation

MPO staff was able to use the state Road Inventory File and other sources to develop quantitative data for most candidate projects. The measured criteria include:

- **Improves substandard pavement**
  - Pavement Condition (“fair” or “poor” pavement merit improvement)
  - Number of lane-miles improved

- **Improves substandard bridge**

  - Bridge Condition (structurally deficient or functionally obsolete merit improvement)
  - Number of substandard bridges addressed

- **Improves sidewalk infrastructure**
  - Number of sidewalk miles improved

- **Improves bicycle facilities**
  - Number of bicycle lane-miles improved

- **Improves emergency response or ability to respond to extreme conditions**
  - Improves access to an emergency support location
  - Implements climate change adaptation strategies

The system preservation score was a judgment based on reviewing all the measured factors. An index that collapsed all the above factors into a single number was not used.

## 2.3 Capacity Management/Mobility: Autos

As part of the LRTP Needs Assessment, MPO staff analyzed several congestion measurements for both current and future conditions based on travel time, travel speed, and volume/capacity ratios to identify the worst bottleneck locations in the region. These MPO-identified bottleneck locations from the Needs Assessment were used to assess mobility-related needs of both express highways and regional arterials. Staff then assessed the impact of the project on managing capacity and improving mobility. The category scoring generally followed this pattern:

Low: Project is not at an MPO-identified bottleneck location
MPO-identified bottleneck would receive limited or no benefit

Medium: MPO-identified bottleneck will be addressed to a medium degree
Non-bottleneck location is substantially improved

High: MPO-identified bottleneck location is substantially improved
New connection will improve mobility to a high degree

As in the safety category, levels of need and project benefit will vary across candidate projects, and judgment must be used to arrive at a score. A few examples can help illustrate this process.

Three projects that rated low, the I-290/I-495 interchange in Hudson, the Routes 126/135 junction in Framingham, and Middlesex Turnpike in Bedford were not MPO-identified bottleneck locations simply because other locations were significantly worse. Highland Avenue in Newton and Montvale Avenue in Woburn were also not MPO-designated bottlenecks. However, in these instances the improvements were considered great enough that the projects were given the score of "medium." Complete reconstructions of old interchanges can also earn the medium ranking in the same way.

The heavily used I-93/I-95 interchange in Woburn is near the top of the list of regional bottlenecks. The improvements to the interchange and nearby roadways proposed as part of project reconstruction will result in a major improvement to regional traffic flow. At the other extreme is rebuilding the Boston Street overpass over the Lowell commuter rail line near the Wilmington-Woburn city line creates a completely new access corridor to an industrial area thereby earning a "high" rating.

## 2.4 Capacity Management/Mobility: Buses

To determine the bus mobility rating for congestion management, MPO staff considered the level of bus service (MBTA and other local bus services) within the project area based on the number of routes and number of scheduled weekday bus trips. Then, using the auto mobility rating as the baseline, MPO staff assessed whether the bus service within area derived the same level of improvement as automobiles. The general scoring pattern for this category was:

Low: No bus service within the project area or bus service will not be improved
Limited bus service and small to medium improvement for bus service
Some bus service within the project area but little bus service improvement

Medium: Some bus service within the project area; and moderate service improvement
Significant bus service within the project area and smaller service improvement

High: Significant project area bus service and significant service improvement

Judgment was required where projects seemed to fall between scoring levels. An example is the proposed Boardman Street grade separation. This is a severe

arterial bottleneck causing delay to a large number of buses on some of the MBTA's longest bus routes. However, because speeding traffic on this part of Route 1A would only shorten the bus travel times by a small percentage, a "medium" score for bus mobility has been assigned to the project.

The Route 3 widening would be a major improvement in a corridor that is considered to only have moderate congestion, as compared with its connecting highway, the Southeast Expressway. Few MBTA buses would benefit from the Route 3 widening, so the bus mobility score is "low." Closer to downtown Boston, the Southampton Street interchange improvements would make a moderate impact at a location with severe congestion. Because more bus services would benefit, both auto and bus mobility improvements are rated "medium."

## 2.5 Capacity Management/Mobility: Pedestrians and Bicycles

For the two non-motorized modes, the mobility issues relate primarily to the completeness and ease-of-use of the system of paths, sidewalks, and roads available for non-motorized travel. In evaluating candidate projects, MPO staff evaluates to what degree, if any, a project:

- **Expands bicycle network, especially closing gaps in the system:**
  - Number of bicycle lane-miles added to the network
  - Bay State Greenway Priority 100 project element
  - High Priority Gap (flagged in the MPO's Network Evaluation Study)

- **Expands sidewalk network**
  - Number of sidewalks miles added to the network

- **Improves transit access and intermodal connections**
  - Access to transit stations are improved for bicyclists and/or pedestrians

The project scores for this category reflect these benefit judgments:

Low: Bicycle and pedestrian facilities are not applicable to the project
Bike/pedestrian facilities will be expanded to a low degree

Medium: Bike/pedestrian facilities will be expanded to a moderate degree
Project meets healthy transportation policy directive standards

High: Bike/pedestrian facilities will be expanded to a high degree
Project exceeds healthy transportation policy directive standards

## 2.6 Economic Vitality

While any major transportation improvement can be expected to contribute to economic vitality, the ratings in this category reflect to what degree the improvements support the land use objectives embraced by the MPO. A candidate project can support these objectives if it:

- **Provides access to target development area**
  - Vehicle, transit, bicycle, or pedestrian access improvements
- **Serves existing area of concentrated development**
  - High population and employment density for type of community
- **Facilitates new development**
  - Transportation project is tied to new development proposals

The project scores for this category reflect these benefit judgments:

Low: Project does not provide access to a targeted development area or area of concentrated development.

Medium: Project provides access to a targeted development area or area of concentrated development to a moderate degree or facilitates economic development

High: Project provides access to a targeted development area or area of concentrated development to at least a moderate degree, and it facilitates new development.

SP/WK/wk

# TABLE C.1
## Evaluated Major Infrastructure Projects for the LRTP

| Abbreviated Project Name | Project Cost | AADT | Safety | Cost per EPDO | EPDO per 100,000,000 vehicles | EPDO | Top 200 Crash Location (Total EPDO) | HSIP Cluster (Total EPDO) | Truck Polygon (Truck-involved EPDO) | HSIP Bicycle Cluster (Bike-involved EPDO) | HSIP Pedestrian Cluster (Ped-involved EPDO) | System Preservation | Improves substandard pavement | Improves substandard bridge | Improves sidewalk infrastructure | Improves bicycle facilities | Improves emergency response/Improves response to extreme conditions | Capacity Management/Mobility (Autos) | MPO-identified express highway bottleneck location | MPO-identified arterial bottleneck location | Capacity Management/Mobility (Buses) | Number of Bus Routes Served | Total Bus Trips Served Daily | Capacity Management/Mobility (Peds/Bikes) | Expands bicycle network | Bay State Greenway Priority 100 | High Priority Gap (Network Evaluation Study) | Expands sidewalk network | Improves transit access | Economic Vitality | Provides vehicle access to target development area | Provides transit access to target development area | Provides bicycle access to target development area | Provides pedestrian access to target development area | Mostly serves existing area of concentrated development | Partly serves existing area of concentrated development | Facilitates new development |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Allston Viaduct Realignment (Boston) | $460,000,000 | 174,000 | medium | $1,133,005 | 236 | 406 | | 3 | | | | high | | 7 | | | • | medium | | | medium | 9 | 421 | high | • | | | • | • | high | • | • | • | • | • | | • |
| Route 18 Widening (Weymouth) | $58,822,115 | 29,600 | high | $43,252 | 4641 | 1360 | 6 | 10 | 4 | | | high | 8 | 1 | 8 | | • | medium | | moderate | low | 1 | 127 | medium | 8 | | | | | high | • | | • | • | | • | • | • |
| Highland Ave (Newton) | $14,297,606 | 35,000 | high | $24,233 | 1703 | 590 | | 3 | 1 | | | high | 9 | 1 | 6 | | • | medium | | | low | 2 | 86 | medium | 6 | | | | • | high | • | | • | • | • | | • |
| Route 4/225 (Lexington) | $23,221,000 | 40,200 | high | $44,400 | 1314 | 523 | | 2 | | | | medium | 8 | | | | • | medium | | moderate | medium | 3 | 104 | high | 8 | | | 8 | • | medium | | | | | • | • | • |
| Rutherford Ave (Boston) | $109,967,000 | 48,200 | medium | $561,056 | 411 | 196 | | 1 | 1 | | | high | 9 | 3 | 6 | | • | low | | | low | 8 | 897 | high | 6 | | | | • | high | • | • | • | • | • | | • |
| McGrath (Somerville) | $56,563,000 | 38,000 | medium | $425,286 | 354 | 133 | | 2 | | 1 | 1 | high | 3 | 2 | 1.5 | | | low | | | low | 7 | 558 | high | 1.5 | | | | • | high | • | • | • | • | • | | • |
| Extend I-93 HOV Lane (Somerville to Woburn) | $550,000,000 | 202,000 | low | $239,234 | 1150 | 2299 | | 17 | 7 | | | high | | 6 | | | • | high | severe | | high | 8 | 492 | low | | | | | | medium | • | | | | | • | • |
| I-93/I-95 (Woburn) | $294,000,000 | 373,000 | high | $207,774 | 383 | 1415 | | 7 | 5 | | | medium | | 1 | | | • | high | severe | | medium | 3 | 92 | low | | | | | | medium | • | | | | | • | • |
| Route 27/9 (Natick) | $25,793,370 | 80,000 | high | $55,709 | 585 | 463 | 1 | 2 | | | | high | 1 | 1 | 1 | | • | medium | | | medium | 4 | | medium | 1 | | | | • | low | | | | | • | | |
| New Boston St (Woburn) | $9,706,549 | 14,000 | low | $9,706,549 | 7 | 1 | | | | | | low | | | | | | high | | | low | 0 | | high | 0.5 | | | 0.5 | • | high | • | | • | • | • | | |
| Route 1 Widening (Malden, Revere, Saugus) | $236,078,161 | 115,000 | medium | $666,887 | 311 | 354 | | 5 | 2 | | | low | | 1 | | | • | high | severe | | high | 6 | 250 | low | | | | | | medium | • | | | | • | | • |
| Braintree Split | $53,288,794 | 282,000 | high | $32,612.48 | 585 | 1634 | | 4 | 1 | | | medium | | 3 | | | • | high | severe | | medium | 5 | 283 | low | | | | | | low | | | | | | • | |
| Montvale Ave (Woburn) | $4,225,256 | 31,000 | high | $15,534 | 886 | 272 | 1 | 1 | | | | high | 1 | | 0.5 | | • | medium | | | low | 1 | 38 | medium | 0.5 | | | | • | low | | | | | | • | |
| Southampton Interchange (Boston) | $143,750,000 | 225,000 | medium | $123,709 | 522 | 1162 | | 1 | | | | medium | | 1 | | | • | medium | severe | | medium | 8 | 705 | medium | | | | | | medium | | | | | • | | |
| I-93/I-95 (Canton) | $186,700,000 | 240,000 | medium | $470,277 | 167 | 397 | | 4 | 2 | | | medium | | 2 | | | • | medium | | | low | 0 | | medium | • | | | • | • | high | • | | | | | • | • |
| Route 128 Add-a-Lane (Needham, Wellesley) | $150,000,000 | 188,000 | medium | $208,333 | 387 | 720 | | 4 | 1 | | | high | | 4 | | | | high | severe | | low | 1 | 50 | low | | | | | | low | | | | | | • | |
| Concord Rotary | $104,000,000 | 48,000 | medium | $594,286 | 368 | 175 | | 2 | 1 | | | high | 6 | 1 | | | • | high | | severe | low | 0 | | low | | | | | | low | | | | | | • | |
| Dedham St Ramp (Canton, Norwood, Westwood) | $50,961,567 | 5,000 | low | $1,456,045 | 707 | 35 | | | | | | low | | 1 | | | • | high | | | low | 0 | | medium | 1 | | | 1 | • | high | • | | | | • | • |
| Route 3 Widening | $800,000,000 | 159,000 | high | $365,297 | 1391 | 2190 | | 15 | 3 | | | high | | 9 | | | | medium | moderate | | low | 5 | 361 | low | | | | | | low | | | | | | • | |
| I-90/I-495 (Hopkinton) | $220,000,000 | 209,000 | medium | $660,661 | 161 | 333 | | 3 | 4 | | | high | | 4 | | | | medium | | | low | 0 | | low | | | | | | medium | • | | | | | • | |
| Middlesex, Phase III (Bedford, Burlington) | $26,935,171 | 14,300 | medium | $402,017 | 473 | 67 | | | | | | high | 3 | 1 | | | | low | | | low | 3 | 8 | medium | 3 | | | 3 | • | medium | • | | | | | • | • |
| Route 126/135 (Framingham) | $115,000,000 | 35,400 | medium | $542,453 | 605 | 212 | 1 | 1 | | 1 | 1 | low | 0.5 | | 0.5 | | • | low | | | medium | 7 | | medium | 0.5 | • | | | • | high | • | • | • | • | • | | • |
| I-95 Add-a-Lane (Woburn) | $32,900,000 | 164,000 | medium | $109,667 | 185 | 300 | | 2 | 1 | | | medium | | 2 | | | • | medium | severe | | low | 2 | 75 | low | | | | | | medium | • | | | | | • | |
| Cypher St Extension (Boston) | $9,700,000 | 1,000 | low | N/A | N/A | N/A | | | | | | low | 1 | | | | • | medium | | | low | | | low | | | | | | medium | | | | | • | | • |
| Mahoney Circle (Revere) | $60,000,000 | 56,000 | low | $588,235 | 184 | 102 | | 2 | 1 | | | low | 1 | | | | • | medium | | moderate | high | 10 | 451 | low | | | | | | medium | • | • | | | • | | |
| Route 9/I-495 (Southborough) | $25,000,000 | 135,000 | low | $342,466 | 55 | 73 | | 1 | | | | high | | 2 | | | | medium | | | low | 0 | | low | | | | | | medium | • | | | | • | | |
| Route 128, Phase II (Danvers, Peabody) | $23,776,000 | 102,000 | medium | $65,319 | 360 | 364 | | 3 | 1 | | | high | 7 | 2 | | | • | medium | | | low | 3 | 57 | low | | | | | | low | | | | | • | | |

## TABLE C.1 (Cont.)
## Evaluated Major Infrastructure Projects for the LRTP

| Abbreviated Project Name | Project Cost | AADT | Safety | Cost per EPDO | EPDO per 100,000,000 vehicles | EPDO | Top 200 Crash Location (Total EPDO) | HSIP Cluster (Total EPDO) | Truck Polygon (Truck-involved EPDO) | HSIP Bicycle Cluster (Bike-involved EPDO) | HSIP Pedestrian Cluster (Ped-involved EPDO) | System Preservation | Improves substandard pavement | Improves substandard bridge | Improves sidewalk infrastructure | Improves bicycle facilities | Improves emergency response/Improves response to extreme conditions | Capacity Management/Mobility (Autos) | MPO-identified express highway bottleneck location | MPO-identified arterial bottleneck location | Capacity Management/Mobility (Buses) | Number of Bus Routes Served | Total Bus Trips Served Daily | Capacity Management/Mobility (Peds/Bikes) | Expands bicycle network | Bay State Greenway Priority 100 | High Priority Gap (Network Evaluation Study) | Expands sidewalk network | Improves transit access | Economic Vitality | Provides vehicle access to target development area | Provides transit access to target development area | Provides bicycle access to target development area | Provides pedestrian access to target development area | Mostly serves existing area of concentrated development | Partly serves existing area of concentrated development | Facilitates new development |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Boardman St (Boston) | $13,686,000 | 59,500 | low | N/A | N/A | N/A | | | | | | low | 0.5 | | | | • | high | | severe | medium | 5 | 205 | low | | | | | • | medium | • | | | | | • | |
| Walnut Street Interchange (Saugus) | $19,500,000 | 136,000 | medium | $103,723 | 140 | 188 | | 1 | | | | low | | | 0.5 | | • | medium | | | low | 1 | 51 | medium | 1 | | 0.5 | • | low | | | | | | • | |
| Bridge St (Salem) | $16,613,152 | 17,800 | medium | $117,824 | 800 | 141 | | 1 | | | | medium | 1 | | 0.5 | | | low | | | low | 5 | 133 | low | | | | • | medium | • | | | • | • | | |
| Route 1/16 (Chelsea, Revere) | N/A | 40,200 | low | N/A | 193 | 77 | 1 | 2 | 1 | | | high | 5.25 | 1 | | | • | low | | moderate | low | 2 | 75 | low | | | | | medium | • | • | | | • | | |
| I-95 Capacity Improvements (Lynnfield, Reading) | $198,443,000 | 157,000 | low | $187,742 | 680 | 1057 | | 6 | 1 | | | low | | | | | • | high | severe | | low | 0 | | low | | | | | medium | • | | | | | • | • |
| I-290/495 (Hudson, Marlborough) | $100,000,000 | 162,500 | medium | $334,448 | 186 | 299 | | 2 | 1 | | | high | 2 | 1 | | | | low | | | low | 0 | | low | | | | | low | | | | | | | |
| Route 1A/16 (Revere) | N/A | 36,700 | low | N/A | 39 | 14 | 1 | 3 | 1 | | | medium | 1.5 | | | | • | low | | severe | low | 9 | 416 | low | | | | | medium | • | | | • | | | |
| Brimbal Ave, Phase II (Beverly) | $23,000,000 | 73,500 | low | $383,333 | 82 | 60 | | 1 | | | | medium | | 1 | | | • | low | | | low | 1 | | low | | | | | medium | • | | | | | • | • |
| I-90/Interchange 17 (Newton) | $4,000,000 | 141,000 | medium | $8,677 | 330 | 461 | | 4 | 1 | 1 | | low | | 3 | 0.5 | | • | medium | severe | | low | 12 | 528 | low | | | | | low | | | | | | • | |
| 128 Capacity Improvements (Peabody) | $24,634,000 | 110,000 | low | $98,536 | 230 | 250 | | 2 | | | | low | | 1 | | | • | high | severe | | low | 1 | 36 | low | | | | | low | | | | | | • | |
| Riverside Ramp (Newton) | N/A | 23,500 | low | N/A | 4 | 1 | | 2 | | | | low | | | | | | low | moderate | | low | 1 | 20 | low | | | | • | medium | • | | | | | • | • |
| Washington Street Bridge (Woburn) | $12,200,000 | 38,800 | low | $98,387 | 323 | 124 | | 1 | | | | low | | | 0.1 | | • | low | | | low | 0 | | medium | 0.1 | | | • | low | | | | | | • | |

# TABLE C.2
## Summary of Evaluated Major Infrastructure Projects for the LRTP

| Proponent(s) | Project Name | Project Cost | AADT | Safety | System Preservation | Capacity Management/Mobility (Autos) | Capacity Management/Mobility (Buses) | Capacity Management/Mobility (Peds/Bikes) | Economic Vitality | Total Rating | 5 or more low ratings | 4 or more low ratings | 3 or more low ratings | 2 or more low ratings | 2 or more high ratings |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Boston | Replacement of Allston I-90 Elevated Viaduct | $460,000,000 | 174,000 | 2 | 3 | 2 | 2 | 3 | 3 | 15 | | | | | • |
| Weymouth | Reconstruction & Widening on Route 18 (Main Street), from Highland Place to Route 139 | $58,822,115 | 29,600 | 3 | 3 | 2 | 1 | 2 | 3 | 14 | | | | | • |
| Newton & Needham | Reconstruction of Highland Avenue, Needham Street & Charles River Bridge | $14,297,606 | 35,000 | 3 | 3 | 2 | 1 | 2 | 3 | 14 | | | | | • |
| Lexington | Route 4/225 (Bedford Street) and Hartwell Avenue | $23,221,000 | 40,200 | 3 | 2 | 2 | 2 | 3 | 2 | 14 | | | | | • |
| Boston | Reconstruction of Rutherford Avenue, from City Square to Sullivan Square | $109,967,000 | 48,200 | 2 | 3 | 1 | 1 | 3 | 3 | 13 | | | | • | • |
| Somerville | McGrath Boulevard Project | $56,563,000 | 38,000 | 2 | 3 | 1 | 1 | 3 | 3 | 13 | | | | • | • |
| Somerville & Woburn | Extend I-93 HOV Lane into Somerville and/or Capacity Improvements to Route 128, Woburn | $550,000,000 | 202,000 | 1 | 3 | 3 | 3 | 1 | 2 | 13 | | | • | • | • |
| Reading, Stoneham, Wakefield, Woburn | Interchange Improvements to I-93/I-95 (Bridge Replacement and Related Work) | $294,000,000 | 373,000 | 3 | 2 | 3 | 2 | 1 | 2 | 13 | | | | • | |
| Natick | Bridge Replacement, Route 27 (North Main St.) over Route 9 (Worcester St.) | $25,793,370 | 80,000 | 3 | 3 | 2 | 2 | 2 | 1 | 13 | | | | | • |
| Woburn | Bridge Replacement, New Boston Street over MBTA | $9,706,549 | 14,000 | 1 | 1 | 3 | 1 | 3 | 3 | 12 | | | • | • | • |
| Malden, Revere, Saugus | Reconstruction & Widening on Route 1, from Route 60 to Route 99 | $236,078,161 | 115,000 | 2 | 1 | 3 | 3 | 1 | 2 | 12 | | | | • | • |
| Braintree | I-93/Route 3 Interchange (Braintree Split) | $53,288,794 | 282,000 | 3 | 2 | 3 | 2 | 1 | 1 | 12 | | | | • | • |
| Woburn | Reconstruction of Montvale Avenue, from I-93 Interchange to Central Street | $4,225,256 | 31,000 | 3 | 3 | 2 | 1 | 2 | 1 | 12 | | | | • | • |
| MassDOT | Southeast Expressway Modification (Southampton Interchange) | $143,750,000 | 225,000 | 2 | 2 | 2 | 2 | 2 | 2 | 12 | | | | • | |
| Canton, Dedham, Norwood | Interchange Improvements at I-95/I-93/University Avenue/I-95 Widening | $186,700,000 | 240,000 | 2 | 2 | 2 | 1 | 2 | 3 | 12 | | | | | |
| Needham & Wellesley | Rehab/Replacement of 6 Bridges on I-95/Route 128 (Add-a-Lane Contract 5) | $150,000,000 | 188,000 | 2 | 3 | 3 | 1 | 1 | 1 | 11 | | | • | • | • |
| Concord | Improvements & Upgrades to Concord Rotary (Routes 2/2A/119) | $104,000,000 | 48,000 | 2 | 3 | 3 | 1 | 1 | 1 | 11 | | | • | • | • |
| Canton, Norwood & Westwood | Ramp Construction on I-95 (NB) & Improvements on Dedham Street | $50,961,567 | 5,000 | 1 | 1 | 3 | 1 | 2 | 3 | 11 | | | • | • | • |
| MassDOT | Route 3 South Express Toll Lanes | $800,000,000 | 159,000 | 3 | 3 | 2 | 1 | 1 | 1 | 11 | | • | • | • | • |
| Hopkinton, Westborough | Reconstruction of I-90/I-495 Interchange | $220,000,000 | 209,000 | 2 | 3 | 2 | 1 | 1 | 2 | 11 | | | • | • | |
| Bedford, Billerica, & Burlington | Middlesex Turnpike Improvements, from Crosby Drive North to Manning Road (Phase III) | $26,935,171 | 14,300 | 2 | 3 | 1 | 1 | 2 | 2 | 11 | | | • | • | |
| Framingham | Intersection Improvements at Route 126/135/MBTA & CSX Railroad | $115,000,000 | 35,400 | 2 | 1 | 1 | 2 | 2 | 3 | 11 | | | | | |
| Reading, Stoneham, Wakefield | Improvements along Route 128/95, from North of Interchange of Interchange 37 to 40 | $32,900,000 | 164,000 | 2 | 2 | 2 | 1 | 1 | 2 | 10 | | | | • | |
| Boston | Cypher Street Extension | $9,700,000 | 1,000 | 1 | 3 | 2 | 1 | 1 | 2 | 10 | | | • | • | |
| Revere | Mahoney Circle Grade Separation | $60,000,000 | 56,000 | 1 | 1 | 2 | 3 | 1 | 2 | 10 | | | • | • | |
| Southborough, Westborough | Improvements on Route 9 at I-495 Interchange, from Computer Drive/Research Drive to Route 9 | $25,000,000 | 135,000 | 1 | 3 | 2 | 1 | 1 | 2 | 10 | | | • | • | |
| Danvers & Peabody | Mainline Improvements on Route 128 (Phase II) | $23,776,000 | 102,000 | 2 | 3 | 2 | 1 | 1 | 1 | 10 | | | • | • | |
| Boston | Boardman Street at Route 1A | $13,686,000 | 59,500 | 1 | 1 | 3 | 2 | 1 | 2 | 10 | | | • | • | |
| Saugus | Interchange Reconstruction at Walnut Street & Route 1 (Phase II) | $19,500,000 | 136,000 | 2 | 1 | 2 | 1 | 2 | 1 | 9 | | | • | • | |
| Salem | Reconstruction of Bridge Street, from Flint Street to Washington Street | $16,613,152 | 17,800 | 2 | 2 | 1 | 1 | 1 | 2 | 9 | | | • | • | |
| Chelsea & Revere | Route 1/Route 16 Connector | N/A | 40,200 | 1 | 3 | 1 | 1 | 1 | 2 | 9 | | • | • | • | |
| Lynnfield & Reading | I-95 Capacity Improvements, Lynnfield to Reading (used old LRTP project Beverly to Peabody) | $198,443,000 | 157,000 | 1 | 1 | 3 | 1 | 1 | 2 | 9 | | • | • | • | |
| Hudson & Marlborough | Reconstruction on Routes I-290 & 495 and Bridge Replacement | $100,000,000 | 162,500 | 2 | 3 | 1 | 1 | 1 | 1 | 9 | | • | • | • | |
| Revere | Route 1A/Route 16 Connector | N/A | 36,700 | 1 | 2 | 1 | 1 | 1 | 2 | 8 | | • | • | • | |
| Beverly | Interchange Reconstruction at Route 128/Exit 19 at Brimbal Avenue (Phase II) | $23,000,000 | 73,500 | 1 | 2 | 1 | 1 | 1 | 2 | 8 | | • | • | • | |
| Newton | I-90/Interchange 17 | $4,000,000 | 141,000 | 2 | 1 | 2 | 1 | 1 | 1 | 8 | | • | • | • | |
| Peabody | Route 128 Capacity Improvements: Exit 26 to Exit 28 | $24,634,000 | 110,000 | 1 | 1 | 3 | 1 | 1 | 1 | 8 | • | • | • | • | |
| Newton | New Route 128 Ramp to Riverside Station | N/A | 23,500 | 1 | 1 | 1 | 1 | 1 | 2 | 7 | • | • | • | • | |
| Woburn | Bridge Replacement & Related Work, W-43-028, Washington Street over I-95 | $12,200,000 | 38,800 | 1 | 1 | 1 | 1 | 2 | 1 | 7 | • | • | • | • | |

# D APPENDIX PUBLIC COMMENTS

## OVERVIEW OF CONTENTS

As a result of its extensive outreach activities while developing the LRTP, *Charting Progress to 2040*, the MPO received a substantial number of written and spoken comments, which are summarized in this appendix. Additional comments on the draft document received during the formal 30-day public review and comment period, which began on June 25, 2015 and closed on July 24, 2015 are summarized in Table D.1.

## COMMENTS RECEIVED DURING DEVELOPMENT OF THE LRTP

Chapter 2—Process for Developing *Charting Progress to 2040* provides an overview of the public outreach methods used in developing this LRTP. This section provides additional information from the public outreach venues as noted in Chapter 2.

### *Metropolitan Area Planning Council Subregional Outreach Meetings*

MPO staff attended meetings for all eight MAPC subregions, first in September through November 2014, then again in May and June 2015. In the first round of meetings, attendees commented on the vision, goals, and objectives, which are summarized below. Comments received in writing during this outreach period are also included in the summaries. In the second round of meetings, staff presented information about the ongoing LRTP development including scenario planning and project selection. The subregions submitted their written comments as part of the formal comment period.

#### COMMENTS LEADING TO REVISIONS ON THE VISION, GOALS, AND OBJECTIVES

Comments leading to revisions noted in blue (commenter noted if known)

MPO staff responses to comments noted in purple

### *Vision – revised vision*

- The vision must be more transformative, holistic, and reflect new technologies. Creative thinking should be used to find new solutions that address how technology like driverless cars and buses will play a role in future travel decisions
- Supports including transportation technologies – Arthur Strang of Cambridge
- Re-write the central vision statement so that it's central purpose, transportation, supports and is compatible with neighborhoods of work and the residential neighborhoods that make up cities and towns: "a transportation system that *supports the neighborhoods--work, residential and mixed-- of the Boston region. Transportation must be* safe, provide equitable access, excellent mobility, and varied transportation options-- in support of sustainable, healthy, livable, and economically vibrant *neighborhoods in the cities and towns of the* region." Support for other elements of the Draft Central Vision Statement. Fresh Pond Residents Alliance (suggested re-write of vision in *italics*)
- Incorporate the 8-80 philosophy when talking about accommodating a range of users. The 8-80 philosophy: if you create a city that's good for an 8-year old and an 80 year old, you will create a successful city for everyone. City of Cambridge

### *Congestion Reduction – revised goal*

- Communities are concerned about how the Congestion Reduction goal affects the need for more and better transit. There is fear that congestion reduction for all modes emphasizes highway-centric solutions. Rather than reduce delay for all modes, pedestrian and transit modes should be prioritized.

### *Transportation Options/Healthy Modes – revised goal and objectives*

- The mode-shift goal should be more aggressive and focus on mass transit to result in desirable changes in person miles traveled. The goal should promote autonomous, cheap, safe travel.
- The first three objectives are redundant and could be addressed by expanding the goal. Suggested re-wording of the 4th bullet to emphasize creation of a regional network – City of Cambridge
- Communities want increased transit choices, improved reliability, and transit that go beyond the needs of commuters.
    - Suburban communities want the MPO to support non-traditional transit, and expand the definition of transit to include carpooling and park and ride. There should also be support for last mile connections and reverse commute options.
    - Include private providers of public transportation. Public policy barely

acknowledges the impact or presence of motor coach companies when considering planning options.

- The elderly population should be included in equity; they have specific transportation needs.

## SUMMARY OF COMMENTS GENERATED AT SUBREGIONAL MEETINGS

### *Most frequent comments (heard 2 or more times)*

- The vision, goals, and objectives are very general and redundant.
  *Addressed as part of performance measure development*
- The goals and objectives should be tied to measurable outcomes, such as miles of new sidewalks or number of new bike facilities.
  *Addressed with performance measures*
- Regional equity should be part of the goals and objectives.
  *Addressed in project selection process*
- The goals and objectives favor the built-up urban core and do not address the needs of suburban communities.
  *Addressed in project selection process, as part of considering regional equity*
- Interest in weighting the goals – economic vitality and freight movement appears least important since it is the last goal listed.
  *Addressed if MPO prioritizes goals*

### *Other comments*

- Some goals, such as congestion reduction, can generate cost savings, if achieved by open-road tolling. There could be increased revenue and less use of the roads.
  *Potential UPWP study*
- Reducing freight delay conflicts with other goals. How does the MPO deal with conflicts of interest?
  *Addressed if MPO prioritizes goals, programs could allow funding for projects not listed in the LRTP*
- The economic development goal should direct economic development to downtowns. Consider value capture and ways to incentivize development around transit.
  *LRTP is coordinated with Metrofuture, the regional land use plan*
- Cost-effectiveness should be a goal. Project selection should consider how many people the project serves and the project's functional necessity.
  *Can be considered as part of performance based planning*

- Include the relation to housing development goals and Smart Growth.
  *LRTP is coordinated with Metrofuture, the regional land use plan*
- Goals and objectives should provide incentives for relieving bottlenecks.
  *Addressed through investment strategies for LRTP*

### *Public Priorities*

- Transportation Options/Healthy Modes is the most widely-supported priority goal.
- System preservation, safety, congestion reduction, and economic vitality/freight are all high priorities.
- Important objectives include planning for climate change and hazard mitigation.

## *SUMMARY OF WRITTEN SUBMITTED COMMENTS*

1. Pat Brown, Sudbury Resident
   - Add cost-effectiveness as a goal
     *Can be considered as part of performance based planning*
   - Economic Vitality should exchange places with transportation options/healthy modes if goals are listed in order of importance
     *Addressed if MPO prioritizes goals*
   - The objectives should be measureable
     *Addressed with performance measures*
   - Objective measurement is difficult for some of the objectives
     *Addressed with performance measures*
2. Arthur Strang, Cambridge Resident
   - How does the Olympics transportation plan factor into the LRTP
     *Item for consideration*
   - Add time and standard-time deviation-of-time to destination rather than only congestion
     *Addressed with performance measures*
   - Congestion on Alewife Brook Parkway and Fresh Pond Parkway is a result of the end of Route 2 - this also delays a number of bus routes
     *Identified need*

3. City of Cambridge
   *(Many suggestions are addressed as part of the performance-based planning and process, through a PM, an MPO action, or investment strategy)*

   - Objectives are very high level and could use further definition with specific targets
     *Addressed with performance measures*
   - Why do objectives touching on transit oriented development not explicitly state it?
     *Addressed with performance measures and coordination with Metrofuture, the regional land use plan*
   - Congestion reduction goal may have direct conflict with other goals; example: reducing congestion delay for all modes does not contribute to achieving mode shift. Place priority on pedestrian, bike, transit facilities to decrease single-occupant vehicle trips.
     *Addressed if MPO prioritizes goals*
   - Emphasize that funding should target more sustainable and healthier modes of transportation, particularly for low-income and minority populations.
     *MPO action through project selection*

4. Fresh Pond Residents Alliance

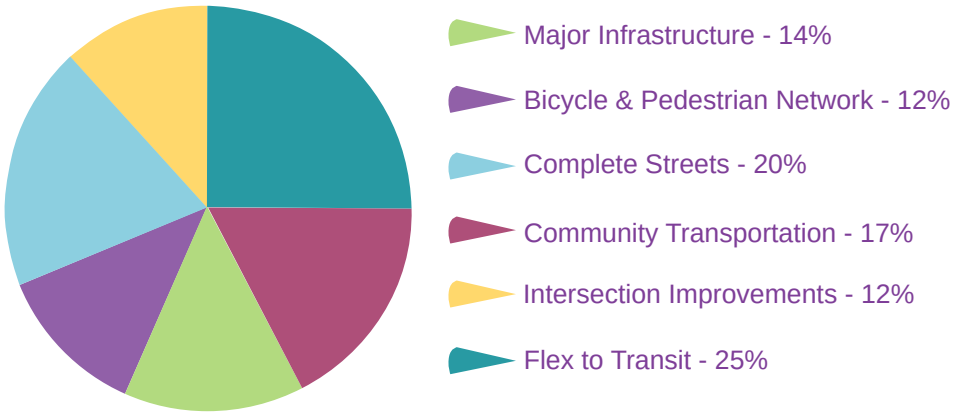
   - Priority Goals: “transportation options/healthy modes” and “congestion reduction.” Need for improved local and metropolitan connectivity

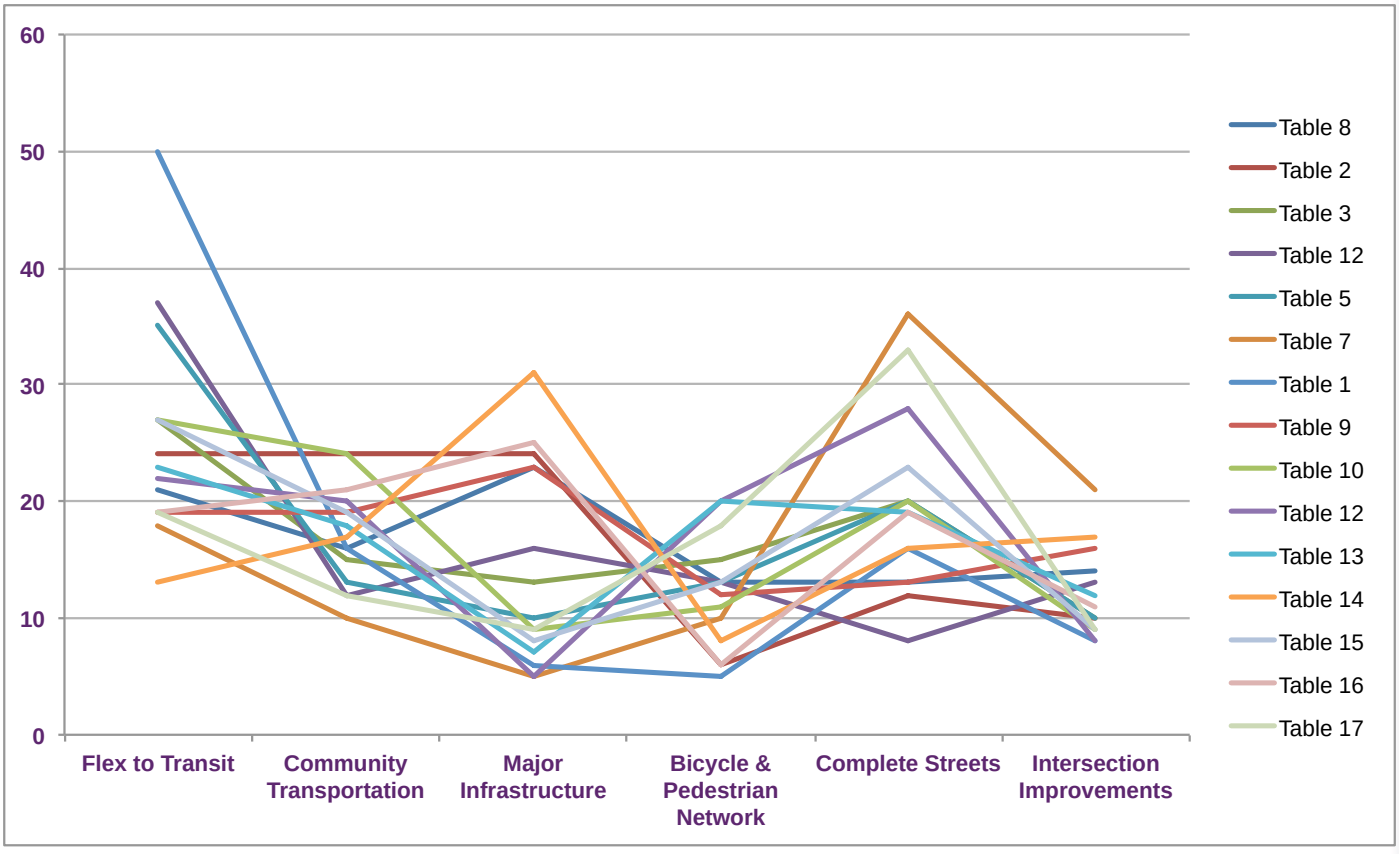


## *Metropolitan Area Planning Council Winter Council Meeting*

The MAPC Winter Council Meeting was devoted to discussing the LRTP, with a focus on prioritizing investments. Attendees were divided into 15 tables to participate in a budgeting activity, allocating the MPO’s $2 billion among six investment programs. Figure D.1 illustrates the average allocation among all tables.

## FIGURE D.1
## MAPC Winter Council Meeting:
## Overview of Budgeting Activity Results



## *Online Surveys*

### COMMENTS ON VISION, GOALS, AND OBJECTIVES

A survey was released between October and November 2014 to collect feedback on the MPO's draft vision, goals, and objectives. Respondents were asked their views about the vision, to rank the goals, and provide additional feedback on the objectives. A summary of survey results is provided below.

MPO staff responses to comments are noted in purple.

**FIGURE D.2**
**Public Ranking of Goals**
**(Raw scores in parentheses; a lower score indicates a higher priority.)**

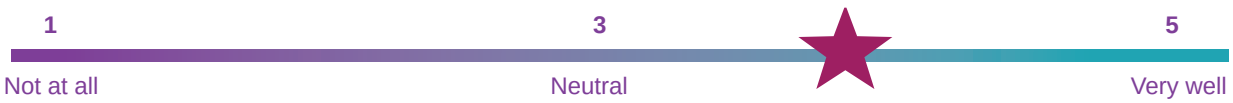
1. **Transportation Options/Healthy Modes (132)**
2. **Safety (175)**
3. **Greenhouse Gas (GHG)/Air Pollution/Environment (253)**
4. **System Preservation (263)**
5. **Transit Equity (265)**
6. **Congestion Reduction (267)**
7. **Economic Vitality and Freight Movement (317)**

When asked the following question:

> How well does the MPO's proposed vision for transportation in the region align with your own vision?

Members of the public on average felt the MPO's vision match their vision as well (3.9 out of 5).

(through November 18, 2014 with 66 respondents)




Source: Central Transportation Planning Staff.

### *Safety*

- Vehicular safety: reconfigure interchanges; construct medians or barriers along principle arterials and interstates; construct turn lanes at intersections. Better enforcement of speed limits.
  *Addressed in investment strategies, specific projects, UPWP activities, or by MassDOT and/or municipalities*

- Pedestrian and Bike safety: Pedestrian safety is a concern. Improve the sense of safety for walking and biking. Assist towns to more proactively promote bike lanes and safety improvements.
  *Addressed through investment strategies, specific projects, or UPWP activities, such as the Community Transportation Technical Assistance Program*

- Recognize that vehicular safety would improve with mode shift to transit.
  *Item for MPO consideration*

- Knowledge of and adherence to the laws by all travelers.
  *Item for MPO consideration*

### *Transportation Options/Healthy Modes*

- Restripe roadway shoulders where feasible to better accommodate bicycles.
  *Addressed through investment strategies, specific projects*

- Consider equity between motorized and human powered transportation.
  *Addressed with performance measures*

- Private providers of transit often provide greater levels of efficiency than publicly managed agencies. If there is truly a meaningful desire to provide the greatest level of passenger transportation at the lowest cost, motor-coach companies are here to assist.
  *Added objective to Transportation Options and Healthy Modes*

### *System Preservation*

- Improve cooperation among all governments and departments to improve maintenance.
  *Item for consideration in MPO processes and decision making*

- "Maintain and modernize capital assets" is vague. Transit capital assets are very old and need modernization.
  *Addressed with performance measures*

## *Congestion Reduction*

- Road focus: Construct additional travel lanes to congested corridors to alleviate bottlenecks; reconfigure interchanges to alleviate congestion and improve mobility. More traffic lights could be "No right turn on red between 7am-9pm" or similar, and have an allowance at night.
  *Can be addressed through investment strategies, specific project, UPWP activities, or by MassDOT and/or municipalities*

- Multi-modal focus: Prioritize projects with opportunity for multi-modal interconnectivity. Reduce the standard deviation of travel time to destination for all forms of transportation. Recognize methods already provided by private motor-coach companies.
  *Can be addressed through investment strategies, specific project, UPWP activities, or by MassDOT and/or municipalities*

- Mode-shift should be the first bullet, not the second. Reducing delays on roadways may increase auto-use and undermine mode shift.
  *Addressed if MPO prioritizes goals*

- Add credits for multi-passenger vehicles and tax rebates for bike commuters.
  *Item for MPO/MassDOT/Legislative consideration*

- Increasing congestion to "force" mode-shift is an elitist and false assumption. The MPO should vigorously fight this and explicitly argue against it. Not everyone can bike to work!
  *Item for MPO consideration*

- Reducing the number of trucks on the road will significantly reduce congestion, particularly on main highways. Consider listing this in this section.
  *Trucks cannot be banned from roadways that receive federal funding*

## *Economic Vitality and Freight Movement*

- Economic Vitality: Include more ties between transportation investment and the region's and state's land use, housing and economic development goals. Partial high-speed commuter rail to knit urban jobs with rural towns.
  *Addressed with performance measures, also LRTP is coordinated with Metrofuture, the regional land use plan*

- Freight Movement: The goals mostly ignore freight transportation. It really bothers me that the Boston MPO will not take freight movement seriously as it is done in the rest of the MPOs in Mass. Improve the role of freight rail in the movement of freight. Coordinate with transportation firms to identify and promote new opportunities for intermodal movements of freight by rail and truck.
  *Specific goal for freight movement, freight is considered in other goals – system preservation, safety, congestion reduction. Item for ongoing MPO consideration*

- Separate Economic Vitality and Freight Movement as two separate goals: Economic vitality and freight movement are related and possibly have an impact on each other, but they are not the same thing. They should be separate and economic vitality should be first on the list with an emphasis on quality of life. Congress, DOT have made it clear that freight movement is a critical item for our nation; Boston MPO ignores this. Freight movement may have an impact on economic vitality; however economic vitality is a MUCH larger subject than just freight movement. Linking them together like this is over valuing freight movement and under valuing economic vitality. Economic vitality and quality of life should be listed before safety. Freight movement should have its own section.
  *Item for MPO consideration*

- Heavy trucks do not mix with bikes.
  *Item for MPO consideration*

### *Greenhouse Gas (GHG)/Air Pollution/Environment*

- Place higher taxes on vehicles that are not up to date in pollution decreasing.
  *Item for MPO/MassDOT/Legislature consideration*

- There is a significant reduction in GHG by reducing the number of truck movements-probably more than bicycle usage.
  *Item for MPO consideration*

- Buses must be monitored for pollution and noise reduction. Pedestrians' and bicyclists' ears are assaulted by overly loud hissing of air brakes-probably over allowed decibels. Just follow one on your bicycle.
  *Items for MPO/MassDOT/MBTA consideration*

### *Transportation Equity*

- Some could argue that we have equitable access to jobs when the RTA runs one bus an hour to an employment center. This is not equitable because one bus/hour is not real transit that allows some flexibility. The equity goal and objectives need to be fleshed out to specifically identify this need.
  *Increased transit frequency is included in the Transportation Options goal*

- Ensure transportation projects are distributed in a geographically equitable manner across the region based upon need.
  *Addressed in project selection process*

- Consider what equity is between motorized versus human powered transportation.
  *Addressed with performance measures*

## *General comments*

- Transportation is about making human connections. Transportation must be built and modified to reduce the barriers of walking to make these connections, and not allowed to divide communities and neighborhoods.
  *Item for MPO/MassDOT/MBTA/municipality consideration*

- Congestion and delays will be reduced for all modes... The MPO must continue to be a leader in promoting a multi-modal system while taking an aggressive stand for transportation equity. It must stand up against the "fad of the year" approach and keep people focused on keeping livable neighborhoods while promoting mobility and access to jobs for all. Boulevards and parks built by transportation projects are great, but if we are screwing up access for those passing through, we have degraded mobility for all.
  *Item for MPO consideration*

- Means to these ends are not apparent. More biking and walking needs safety education.
  *Addressed with performance measures, item for MPO/MassDOT/MBTA/ municipal/ other entity consideration*

- There is no goal relating to highway system expansion and modernization within suburban and urban areas, e.g. adding travel lanes to congested corridors to alleviate bottlenecks and improve mobility; reconfiguring interchanges to alleviate congestion, improve mobility and safety.
  *Addressed through investment strategy*

- To ensure responsible and predictable (safe) travel, include the TROMP message in all travel related material. www.TROMPcambridge.org (Travel Responsibility Outreach & Mentoring Project)
  *Item for MPO consideration; could be supported through UPWP activities, such as the Community Transportation Technical Assistance Program*

- Citizen working groups might work on specific topics like issues at Alewife Brook Parkway and Fresh Pond Parkway, or walking and biking initiatives. These, from your MPO (ICC booklet)
  *Identified need, action item under public outreach or through the Community Transportation Technical Assistance Program*

- The Boston MPO staff has done a nice job of identifying goals and objectives. However, I feel too much emphasis is given to mode shift versus addressing existing highway safety and congestion issues, which burden commuters with opportunity costs such as lost productivity, etc.
  *Addressed if MPO prioritizes goals*

## COMMENTS ON REGIONAL NEEDS BY GOAL

Congestion Reduction (needs prioritized by frequency heard)

1. Congestion on regional arterials (commuter and non-commuter). Examples are Route 1, 1A, 2, 3, 16, 30, 62, 97, 126, 128, 133, 135, Middlesex Turnpike
    - At peak hours, Randolph's main street is congested with traffic from other towns
    - Commuting on a game day in Foxborough is difficult for a number of towns.
2. Use alternative means to reduce congestion, not highway expansion, such as more transit.
3. Increase quantity and quality of parking at transit stations. Examples are Alewife and Braintree stations.
4. Expanding housing, shopping centers, and population growth are contributing factors to increasing congestion.
5. Congestion on highways, I-90, 95, 495, and specifically the I-93/95 interchange.
6. Congestion on neighborhood roads makes them unsafe for pedestrians

Economic Vitality/Freight (all heard once)

1. Desire for economic growth within the subregions so that people do not have to travel to Boston for work.
2. Proactive action in terms of connections between projects that affect multiple communities.
3. Truck traffic on arterials and also it will spill over onto other routes, for example if Routes 126 and 135 are upgraded.
4. A master vision that addresses transportation holistically, looking at both trucks and people, for example Route 16 in Natick.
5. Truck traffic poses safety issues at I-290/I-495.
6. Framingham would be a logical DMU hub for the western reaches of the MBTA including opening several north-south low density freight routes to passenger service as was done many years ago by the B&M and New Haven RRs.

### *Greenhouse Gas/Air Quality*

1. Mounting traffic congestion at Fresh Pond Parkway and Alewife Brook Parkway. This idling leads to more emissions.
2. We all know that GreenDOT is a comprehensive environmental responsibility and sustainability initiative that will make MassDOT a "green" state transportation

system. (Reduce greeenhouse gas (GHG) emissions; Promote the healthy transportation options of walking, bicycling, and public transit; Support smart growth development.) There is a challenge to coordinate GreenDOT across state agencies.

Safety (needs prioritized by frequency heard)

1. Pedestrian safety at the intersections of Route 16/Mount Auburn and Coolidge Hill and Coolidge Ave and Brattle Street and Fresh Pond Parkway. This is especially problematic for children crossing to access the nearby school. Traffic congestion leads to less safety because cars get backed up and tend to run lights and speed through intersections.
2. Pedestrian safety on Fresh Pond Parkway, Alewife Brook Parkway, Brattle Street, Huron and Route 16, especially since the area connects shopping centers and Alewife Station.
3. Concord Ave is a narrow street that causes safety problems for bicycles when trucks pass by. It should be eliminated as an “unrestricted arterial” street.
4. Safety on interstates. Examples are I-290/I-495 and I-90/I-495.

### *System Preservation*

1. Desire for more and better transit within existing system: improved service hours and frequency, expanded intra/inter-suburban transit, bus only lanes, point to point bus service.
2. Roads need to be fixed to accommodate transit, for example, Route 1 in Milton has no bus stop area and hardly a curb making it unsafe for riders.
3. Improvements are needed to pedestrian/cycling infrastructure. There are too many places where they end suddenly or go over “no man’s land” before continuing, are unsafe (exposed, beside heavy traffic), there is not room for both bikes and cars, or the “bike lane” is full of ruts, potholes, glass, etc.
4. Improvements are needed to Annisquam Bridge.
5. Improvements to Rockport Commuter Rail Station, including the parking lot.
6. The streets are a mess

### *Transportation Options*

1. More investment in bike/pedestrian infrastructure.
   Specific Needs include:
   - A new rail/bike network in a circumferential route around the Inner Core.
   - Expanded regional bike network, but not necessarily along rails, as these could be used in the future for transit.

- A bike network between Acton and Concord.
- Connections between regional trail systems and multi-use trails.
- Connections between Upper Charles Trail to SNETT to the south and Bruce Freemen Trail to the north. Connection from Bruce Freeman to the east and west trails.
- Increased walkability, and support to communities to promote walkability.
- Promoting interconnectedness in the system and neighborhood connectivity. Train tracks and parkways impeded neighborhood connectivity necessary for north-south connections (in Cambridge area). The Hub and spoke transit system impedes connectivity.
- Complete streets may be a problem and not a solution if we just mandate bike lanes and sidewalks on every roadway -- some of which are small and scenic.

2. Increase train and bus transit options, such as improved service hours and frequency, less expensive commuter rail and subway, bus only lanes, point to point bus service. Specific areas of need include:

### *Bus*

- MBTA bus routes in Cambridge that are slowing by traffic coming off of Route 2 and onto Alewife Brook Parkway and Fresh Pond Parkway.
- A lane solely reserved for Bus Rapid Transit and freight on I-495 and freight traffic.

### *Railroad*

- DMU hub in Framingham for the western reaches of the MBTA. Open several north-south low density freight routes to passenger service as was done many years ago by the B&M and New Haven rail roads.

### *Commuter Rail/Subway*

- A new North/South Rail Link between Clinton and Mansfield to bring commuter rail connections to those commuting in the I-495 corridor. Address demand for Marlborough and Foxboro rail service.
- More commuter rail service for reverse commuting, particularly on the Fitchburg Line.
- More reverse commute options in MetroWest, particularly Framingham and Natick.

- Expand commuter rail and subway infrastructure from the South Shore into Boston. Services are inadequate, too expensive and discourage regular use by commuters. Schedules should have more frequent trains in both directions.
- A subway extension of the Blue Line to Lynn.
- The MBTA needs to better publicize its schedule changes.
- More capacity on the red line and at Alewife.
- The red line should be extended further than Braintree.
- Commuter rail should be more like subway service. Need for more DMU.
- Most towns have no transportation and the MBTA is very far away. For example, there is no way to get from Stoughton to Randolph.
- More evening and weekend service from the Council on Aging.
- More transit on Cape Ann.

3. More ferry service in coastal cities/towns.
4. Better links to existing transit is a dominant need in the region. There are train stations, but it is hard for people to get to them. Many bus routes run parallel to transit rather than to transit. There needs to be more local connections to transit that are convenient for people and that people know how to use. Specific needs include:
    - A first mile/last mile program.
    - Better connections to suburban commuter rail stops.
    - Investment in technology like Uber to help with connections.
5. Alternative transit for suburban environments.
    - Suburban para-transit buses must be better labeled with clear signage so people can more easily use the service. An example is the Neponset Valley TMA shuttle. People do not know how to use it and visibility should be part of transit plans.
    - MWRTA needs additional support.
    - Suburbs need help providing shuttles and para-transit. Particularly Concord, which has little MBTA service, but is part of the region.
    - Suburban transit is needed beyond the commute to Boston and beyond borders of RTAs. For example, facilities in the area between Central Mass and Boston Region MPOs.

- The region would prioritize a suburban mobility program over fixing the Concord Rotary. Fixing bad roads will not be as effective as creating a better more integrated system. This will also make the system more equitable for people not traveling into Boston.
- Think of youth with suburban transit. CrossTownConnect was successful with youth going to school activities.
- More coordination is needed between RTAs - there are frequently schedule mismatches between various shuttle services. They would like to eventually use the Charlie Card System. Services that can accommodate teenagers, as well as millennials and seniors, are also needed.
- Westwood shuttle and bus service stops at Westwood municipal borders.
- The Neponset Valley really needs and deserves access to transit. In particular, they need transit to accommodate an aging population and millennials. Transit should accommodate the suburban landscape. There are many transit gaps among the Three Rivers communities.

6. More parking at transit stations, specifically at Alewife, Quincy Adams, Braintree, Littleton, Medway, Norfolk, Littleton, Fitchburg, Kingston, and Plymouth.
    - Some park-and-ride lots are always full, some are not fully utilized - prices will impact a customer who is seeking all day parking.
7. Transit for an aging population, including door to door service for elderly.
8. Roads need to be fixed to accommodate transit, for example, Route 1 in Milton has no bus stop area and hardly a curb making it unsafe for riders
    - More and more people want to walk to the train or bus station.
    - There needs to be safe conditions for pedestrians entering and exiting the transit services - street furniture, waiting space.
9. Airport service is needed, specifically in the Fitchburg area.
10. More coordination is needed between commercial/industrial retailers and transportation options. They look for sites that suit business needs, but not about how people will get to and from work.
    - Need for public-private partnerships. Developers and businesses should work with the municipalities to improve the pedestrian environment, reduce parking. Example is Dedham which applied for TIF funds to improve the pedestrian realm.

- More connections to existing transit in Neponset Valley, especially to and from major employment centers like Patriot Place/Gillette Stadium, Kraft, and Schneider Electric. Specifically coordinated service to Walpole Station.
- Include developers in finding first-mile last-mile solutions
- Legacy Place ownership says that the facility cannot accept MBTA buses on their property because the buses are too big so no buses go there. Retail and service workers cross busy streets to get to Legacy Place from the places where MBTA buses will stop. While this seems preposterous--it is not clear if state or municipal leadership has demanded change from Legacy Place.

11. More coordination is needed between RTAs - there are frequently schedule mismatches between various shuttle services. They would like to eventually use the Charlie Card System. Services that can accommodate teenagers, as well as millennials and seniors, are also needed.
    - Funding for TMAs is a challenge. The Clean Air & Mobility Program helped fund the first three years of a TMA, but many shuttle programs fail when funding is ended and only a limited ridership has been found for the service.
    - Managing both efficiency and equity in shuttle service is a problem. If we serve all who require service (equity) that means too many stops (efficiency).
    - Regional collaboration for transit services along Route 1
    - Information technology for transportation coordination for local services

## COMMENTS ON INVESTMENT STRATEGIES

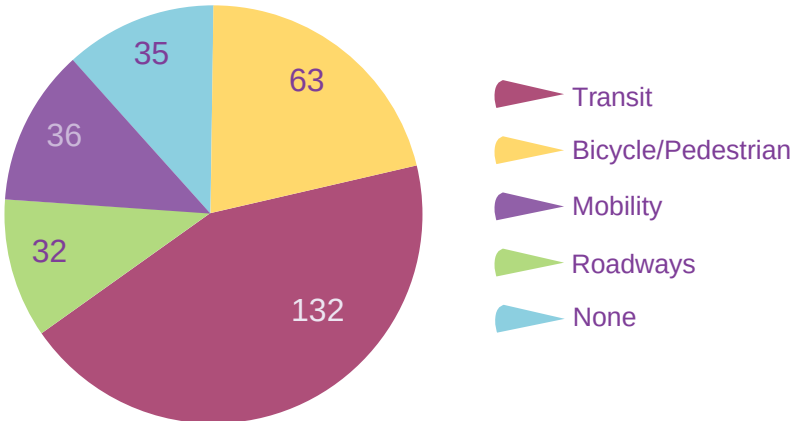
A series of mini-surveys was released between May 15 and July 15, 2015 to collect input on investment strategies for the LRTP. Seven different surveys were released; these surveys asked for the respondents' views on

- Transportation needs in the region
- Investment priorities
- Expanding and funding public transportation
- Expanding the bicycle network

The surveys were publicized through MPOInfo, Twitter, and the release of an MPO NewsFlash. Each survey had either one or two questions. The MPO received a total of 1,100 responses from the seven surveys. A summary of the responses is shown below.

## *Survey 1: Transportation Needs*

**Question 1 – What personal need of yours is not being met by the regional transportation system? (212 respondents)**




Transit had the most responses; the issues included:

- The need for expanded transit service
- Frequency and reliability
- Circumferential transit
- Transit Connections
- Off-peak service

Bicycle/Pedestrian had the second highest number of responses; the issues included:

- An expanded network
- Safer facilities
- More maintenance and law enforcement

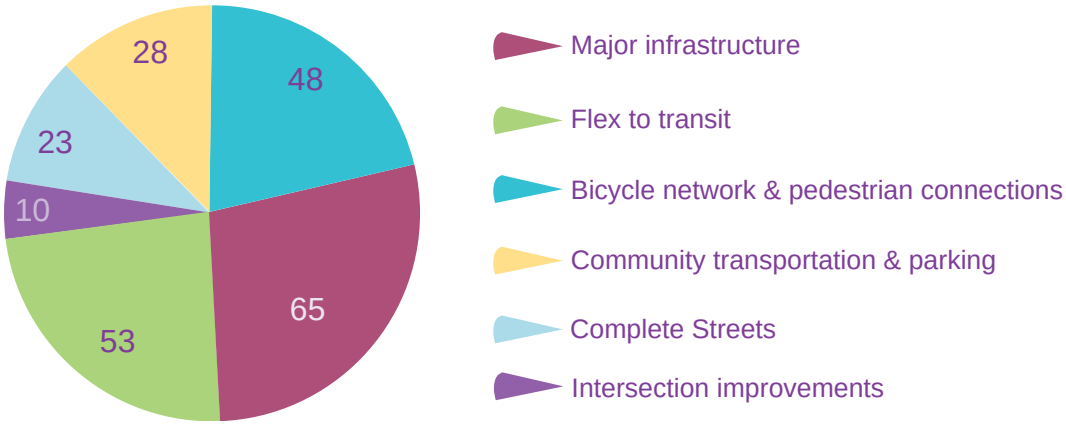
Mobility had the third highest number of responses; the issues included:

- Access to Boston
- Access to rail
- Transportation equity
- Complete Streets

Roadways had the fourth highest number of responses; the issues included:

- Congestion and capacity
- Major highway interchange Improvements
- Maintenance
- Safety

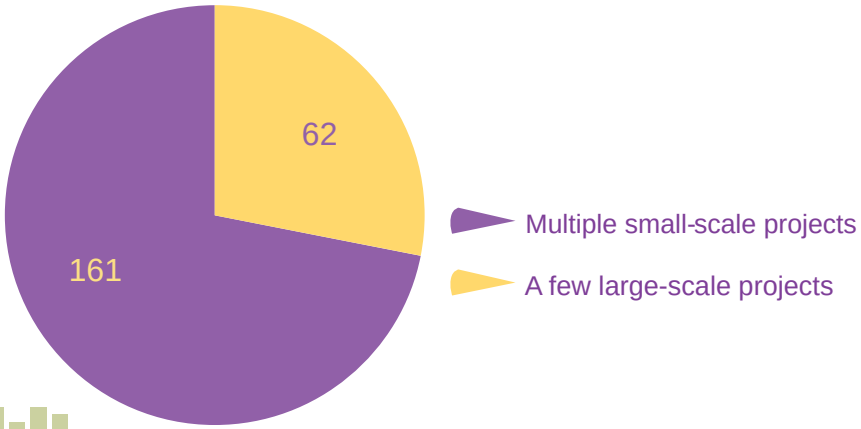
**Question 2 – Which of the following investment programs include projects that would best address this need? (227 respondents)**




Major infrastructure had the most responses. This includes both transit and highway infrastructure; transit received two-thirds of the responses and highway received one-third of the responses.

## *Survey 2: Types of Projects to Serve Your Needs*

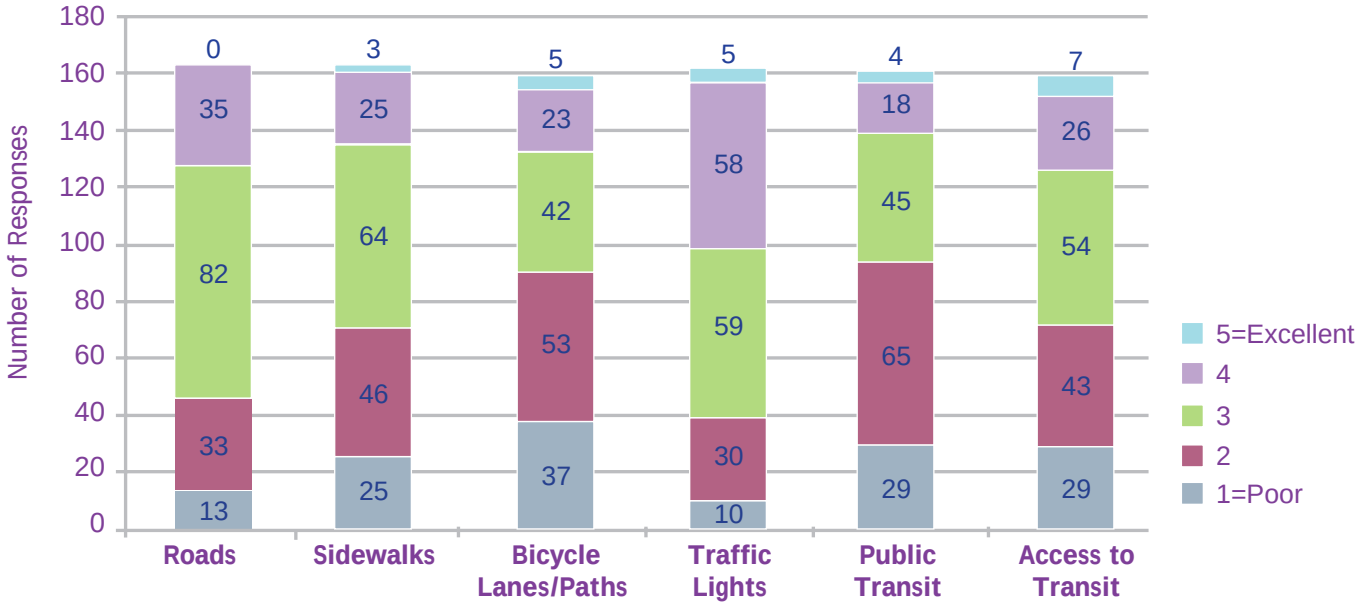
**Question 1 – During the next 25 years, would you focus funding on a few large-scale projects or multiple small-scale projects? (223 respondents)**



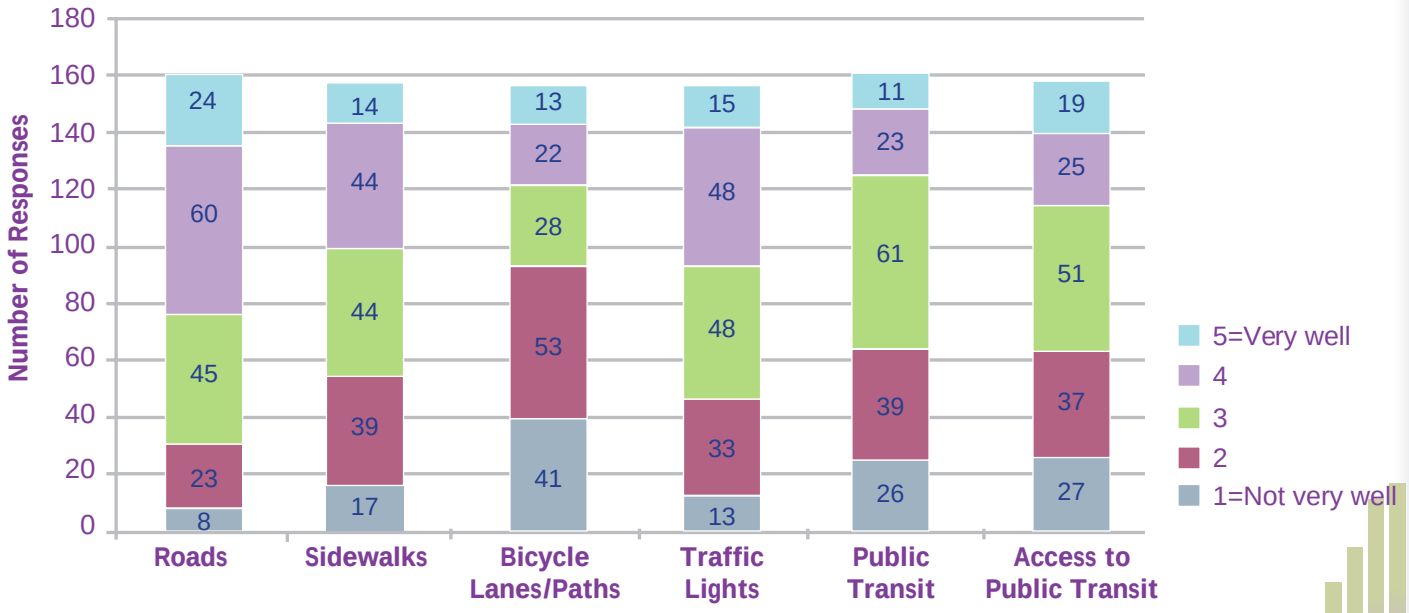
The majority of respondents wanted multiple small-scale projects. This coincides with the MPO's new Operations and Management (O&M) approach to funding projects.

### *Survey 3: Condition of the Transportation Infrastructure*

**Question 1 – Rate the physical condition of the following facilities or services (1 = poor and 5 = excellent). (160 respondents)**

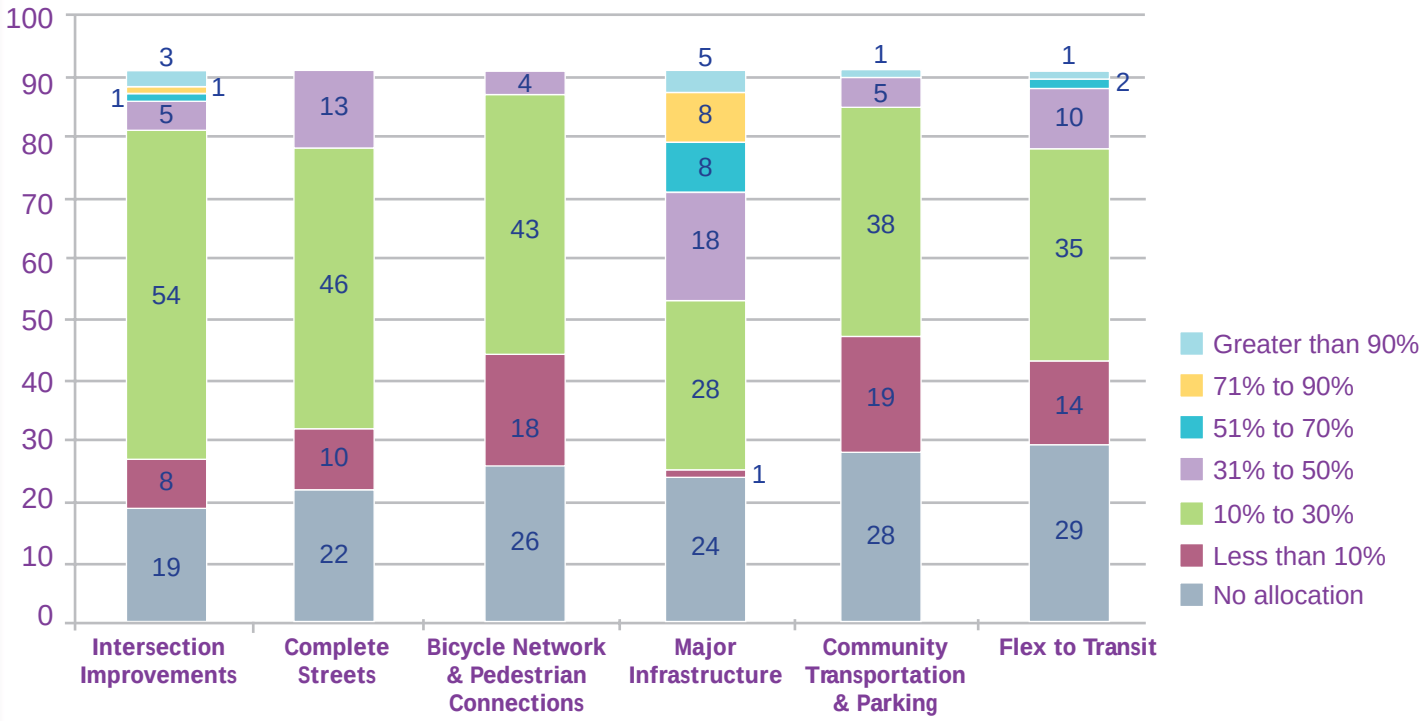



**Question 2 – Rate how well the regional transportation facilities or services meet your travel needs for these same categories (1 = not very well and 5 = very well). (160 respondents)**



*Survey 4: Investment Priorities*

**Question 1 – How do you think the MPO should allocate its funds among the following six investment programs to best meet the region's needs? (91 respondents)**

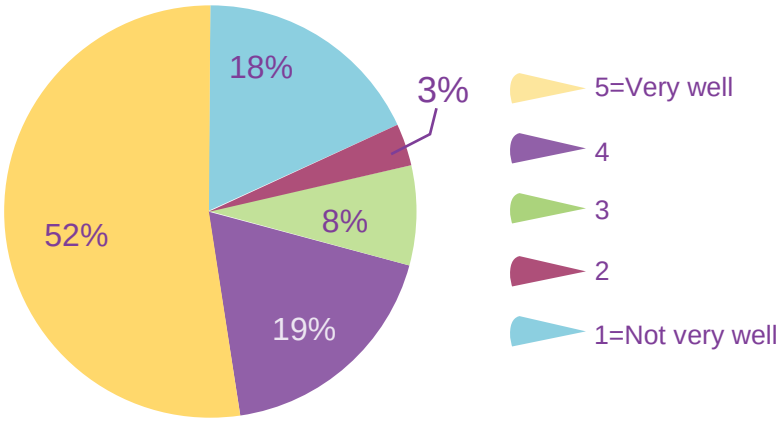



This question asked about the six different investment programs that the MPO considered in programming the LRTP. It shows how the respondents would allocate funding to each of these programs. For example, for the Complete Streets Program, 46 of 91 people think that 10% to 30% of the funds should be allocated to this program.

For all programs, some felt that there should be no allocation to that particular program, but many felt that there should be some allocation across all of the programs. This reinforces the MPO's O&M approach across the various programs.

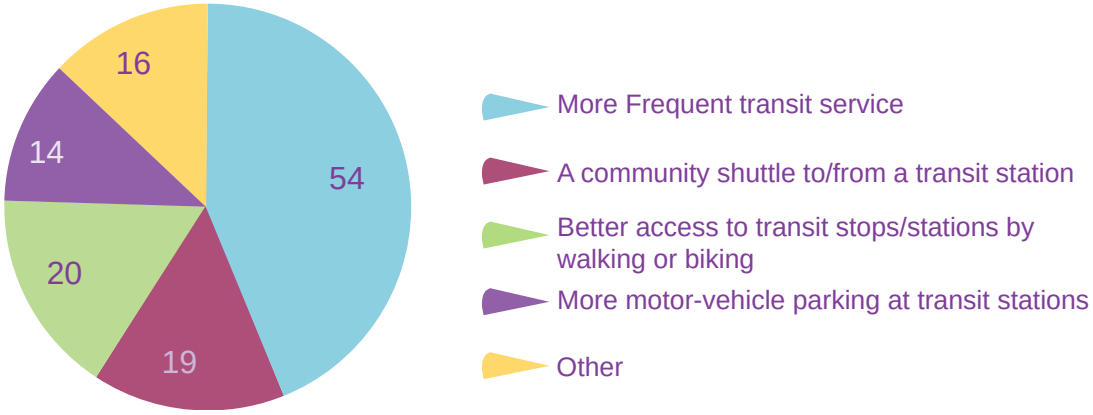
## *Survey 5: Expanding the Region's Bike Network*

**Question 1 – How well would expanding the off-road bike-path network improve your ability to travel around the region (1 = not very well and 5 = very well)? (182 respondents)**



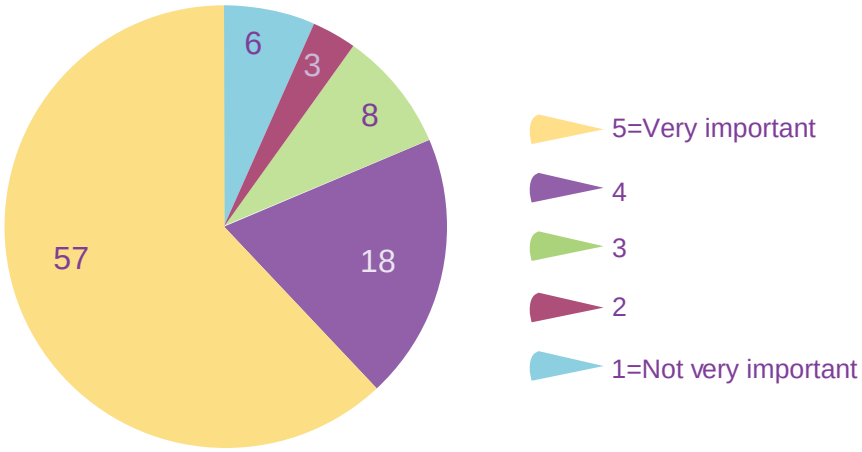

## *Survey 6: Expanding Public Transportation*

**Question 1 – What types of transit improvements likely would increase your use of public transportation? (123 respondents)**

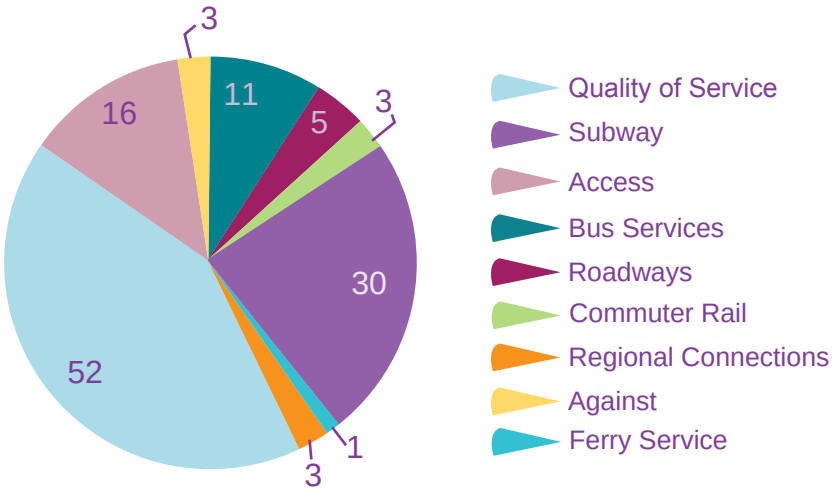


*Survey 7: Funding Public Transportation*

**Question 1 – In addition to keeping the existing system well maintained, how important is it to expand the public transportation system (1 = not very important and 5 = very important)? (92 respondents)**




**Question 2 – If the MPO spends a portion of its highway funding for transit improvements or expansion, what projects do you think it should fund? (92 respondents)**



The majority of the responses requested an improvement to the quality of service; the issues included:

- System expansion
- Frequency and reliability
- Equipment and station improvements

Expansion of the subway system had the second highest number of responses.

Access to transit had the third highest number of responses; the issues included:

- Bicycle and pedestrian access
- More parking

Bus service had the fourth highest number of responses; the issues included:

- More buses
- More bus rapid transit
- More bus shelters

Even though the question asked specifically about transit, roadway is another category. The responses to this category requested:

- Improved roadways so that buses could operate more efficiently
- HOV facilities for buses and high-occupancy travel

## COMMENTS RECEIVED DURING THE FORMAL PUBLIC COMMENT PERIOD

Table D.1 summarizes the comments received during the 30-day public review and comment period for the LRTP Charting Progress to 2040. This formal public review and comment period began on June 25, 2015 and closed on July 24, 2015.

# TABLE D.1
## Summary of Written Public Comments Received During the Official Comment Period: June 25 to July 24, 2015

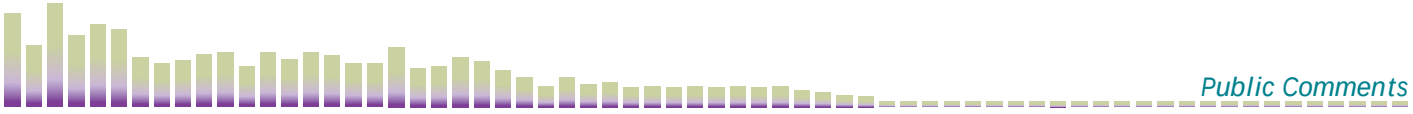
| Project(s) / Issue(s) | Affiliation | Name | Comment | MPO Response (to be added) |
|---|---|---|---|---|
| Bridge Replacement, Route 27 Over Route 9 and Interchange Improvements | Town of Natick, Board of Selectmen | Charles M. Hughes, Chair | Supports inclusion of the Bridge Replacement, Route 27 (North Main Street) over Route 9 in the FFYs 2021-2025 time band of the LRTP. The project will support economic development and quality of life initiatives. The ability to safely move people through Natick is essential to the Town and Region's continued success. The project will benefit both Natick residents and those who visit the region. | |
| I-90/I-495 Interchange & I-495/I-290/ Route 85 Interchange | 495/MetroWest Partnership | Paul Matthews & Jessica Strunkin | The 495/MetroWest region has a diverse economic base and high quality of life, however transportation challenges remain. They are concerned how the MPO's new Operations and Management (O&M) approach will meet the needs of the regionally significant projects such as the I-90/I-495 Interchange in Hopkinton, Southborough, and Westborough and the I-495/I-290/Route 85 Interchange in Hudson and Marlborough. They understand the funding constraints but are disappointed by the inability to fund and plan these critical projects. Both projects have completed the ENF process and are high on the list of priorities for MassDOT District 3. These are long-standing priorities of the Partnership. The I-90/I-495 project was included in MassDOT's 2016 CIP as one of the "five projects of particular note." Partnership urges the MPO to include both projects in the LRTP. | |
| Operations & Management Programs | 495/MetroWest Partnership | Paul Matthews & Jessica Strunkin (cont.) | The Partnership hopes that the 495/ MetroWest region benefits from the several regionwide funding and project categories such as Complete Streets (for example Reconstruction of Taunton Street in Wrentham and Reconstruction of Pleasant Street in Franklin), Bike/Ped (for example the Route 111 Trail in Boxborough and the Bruce Freeman Rail Trail Phases 2D and 2E in Sudbury), Intersection Improvements (for example Route 20/Landham Road in Sudbury and Route 9/Central Street/ Oak Hill Road in Southborough), and Community Transportation/Parking/Clean Air and Mobility. The Partnership expects equitable distribution of such resources across the Boston region. They hope their region's rural and suburban communities are not at a disadvantage compared to their fellow urban MPO municipalities when project selection moves forward. | |

## TABLE D.1 (Cont.)

| Project(s) / Issue(s) | Affiliation | Name | Comment | MPO Response (to be added) |
|---|---|---|---|---|
| Bridge Replacement, Route 27 Over Route 9 and Interchange Improvements & Route 126/ Route135/ MBTA & CSX Railroad | 495/MetroWest Partnership | Paul Matthews & Jessica Strunkin (cont.) | Offer strong support for the Route 126/ Route135/MBTA & CSX Railroad and the Bridge Replacement at Route 27 (North Main Street) over Route 9 (Worcester Street) Interchange Improvements projects included in the LRTP. | |
| I-90/I-495 Interchange | Southwest Advisory Planning Committee (SWAP) | Gino Carlucci, Chair | The subregion's top priority project is the I-90/I-495 Interchange in Hopkinton. This project is not listed due to financial constraints, and SWAP believes it should be. Request that the project be listed with a notation that there is no funding currently identified for these critical improvements. SWAP understands that planned modifications will include open road tolling which is part of the delay and expense. However, there may be additional federal programs developed in the future that could result in the MPO receiving unanticipated funding. This project needs to be on a list of priorities should funding become available. | |
| Operations & Management Programs/ Scenario Planning/ Prioritizing Major Investment projects | Regional Transportation Advisory Council | Mike Gowing, Chairman | Supports the adoption of the Operations and Management (O&M) scenario, rather than the High-Capital Investment Congestion Management scenario or the Current LRTP scenario.<br><br>Supports designating funding for general types of small projects, with specific projects beyond the current TIP period to be selected at a later date.<br><br>Requests that the MPO conduct further analysis of scenarios with additional funding beyond the projected LRTP levels, to illustrate the regional benefits that could be achieved through expanded investment in transportation.<br><br>Requests that the MPO collaborate more closely with MassDOT and the contiguous MPOs (including the MBTA and regional transit authorities) to develop a process where priorities for major investments in the Boston region can be jointly determined.<br><br>Requests that the Regional Transportation Advisory Council continue to provide input as the MPO develops and implements guidelines for funding decisions in the 2021 and beyond timeframes. | |

# TABLE D.1 (Cont.)

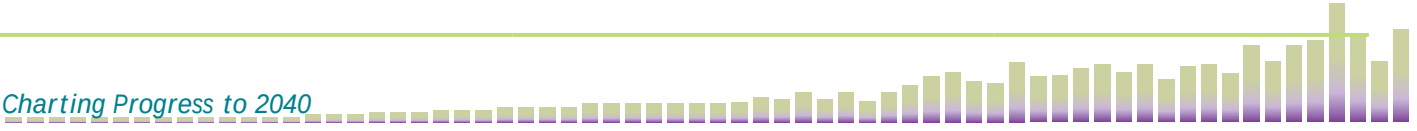
| Project(s) / Issue(s) | Affiliation | Name | Comment | MPO Response (to be added) |
|---|---|---|---|---|
| Last Mile Connections | CrossTown Connect Transportation Management Association (TMA) | Scott Zadakis, Executive Director | This TMA is on the periphery of the MPO boundaries and has limited transportation choices. They are regionalizing some of their services and urge the MPO to do the same. The MPO should consider connectivity and cross-boundary connections to other RTAs and systems in its planning process so as to be as inclusive as possible to communities that lie between RTAs. Supports the decision to focus on operations and management projects, especially the "last mile" shuttle connections, but is concerned that the allocation is too small. The MPO should consider a more robust allocation before adoption of the LRTP.<br><br>The Fitchburg Commuter Rail schedule should be adjusted to allow for more reverse commuting. They believe that adding an earlier train would encourage people to use commuter rail instead of driving. Reduced fares for reverse commute would also incentivize the use of commuter rail. This could actually increase revenue because trains would not be empty.<br><br>They support weighing various options and scenarios for increased parking at commuter rail stations. More parking and more peak-period outbound trains will create viable reverse commute for talented workers from the Boston area. | |
| North and South Station Link/ Concord Rotary improvements/ intersection and signal improvements in Sudbury/ Hudson Rotary improvements/ Bike & Ped | CrossTown Connect Transportation Management Association (TMA) | Scott Zadakis, Executive Director (cont.) | Supports the future link between North and South Station. Also supports Concord Rotary improvements, intersection and signal improvements in Sudbury, and improvements to the Hudson Rotary. Thanks the MPO for funding the Assabet River Rail Trail and the Bruce Freeman Rail Trails. Continue to funds these types of projects with an eye toward connecting them to the Fitchburg Commuter Rail line. | |
| Bruce Freeman Rail Trail, Phase 2D (Sudbury) | | Dick Williamson | Requests an update of the LRTP to reflect that the Bruce Freeman Rail Trail, Phase 2D is no longer "conceptual." Notes that VHB has been contracted for the 25% design plans, and that the project could be considered for the FFY 2019 TIP. | |



## TABLE D.1 (Cont.)

| Project(s) / Issue(s) | Affiliation | Name | Comment | MPO Response (to be added) |
|---|---|---|---|---|
| Bruce Freeman Rail Trail, Phase 2D (Sudbury) | Town of Sudbury, Board of Selectmen | Leonard Simon | Requests an update of the LRTP to reflect that the Bruce Freeman Rail Trail, Phase 2D is no longer "conceptual." Notes that the 25% design study began in November 2014, and should be completed by February 2016. | |
| Bruce Freeman Rail Trail, Phase 2B (Acton and Concord) and Phase 2D (Sudbury) | | Louis Hills | More support for Bruce Freeman Rail Trail is needed. Requests that Phase 2B be moved back to 2017 and that the Sudbury Bruce Freeman Rail Trail phase of design and construction be programmed at the earliest possible dates. | |
| Bruce Freeman Rail Trail | | Anne Anderson | Keep the Bruce Freeman Rail Trail on schedule. This a major bicycle and pedestrian corridor. | |
| Circumferential Transit | | Schuyler Larrabee | Requests that the MPO support the development of circumferential lines for the MBTA. States that there has been planning for a line that would use the right-of-way through MIT and then through Longwood Medical Area, with extensions on either end. Suggests that the MPO consider a line from Union Square, through Harvard to Harvard Street in Allston, to Brookline Village, and ultimately to the Red Line in the south of the region. | |
| Route 9 / Massachusetts Turnpike (Framingham, Natick, & Wellesley) | Resident, City of Somerville | Joel Weber | Suggests diverting Route 9 traffic in Framingham, Natick, and Wellesley to the Massachusetts Turnpike, which could be achieved through removing the financial incentive in the Pike's toll structure, adding a lane in each direction to the Pike, and a road diet on Route 9. Reducing traffic on Route 9 could make the Route 27 over Route 9 bridge replacement unnecessary, and diverting traffic from signalized intersections on Route 9 could reduce collisions and address safety needs identified in the LRTP. A road diet on Route 9 could be an opportunity to make bus service on Route 9 more appealing. Removing the toll from the Pike's interchange with Route 9 in Framingham may be more appropriate depending on the shift in traffic. | |
| Park & Ride | Resident, City of Somerville | Joel Weber (cont.) | Asks if MassDOT, the MBTA, and the MPO have explored opportunities to adjust pricing to better distribute vehicles to adjacent parking facilities with available capacity. The LRTP doesn't have a map highlighting underutilized parking facilities. | |





## TABLE D.1 (Cont.)

| Project(s) / Issue(s) | Affiliation | Name | Comment | MPO Response (to be added) |
|---|---|---|---|---|
| Bicycle Parking | Resident, City of Somerville | Joel Weber (cont.) | The LRTP discusses the Community Transportation/Parking and Clean Air and Mobility program but does not have a clear commitment to add bicycle parking at MBTA stations that have a high utilization rate of bike parking. This bicycle parking should be constructed as soon as possible. Additionally new multi-use path connections (Tri-Community Bikeway connected Alewife Brook bike path, Wayside Trail to the Fitchburg Cutoff Path) should be considered at Alewife Station when determining future demand for bike parking. | |
| Bike Racks on MBTA Buses | Resident, City of Somerville | Joel Weber (cont.) | Suggests the installation of bike racks on all MBTA buses. | |
| Expanding Green Line Capacity | Resident, City of Somerville | Joel Weber (cont.) | MassDOT, the MBTA, and the MPO should explore possibilities for improving capacity in the Green Line's central subway tunnel. The organizations should look at the possibility of a grade separated Copley Junction, lengthening platforms to support making 225 foot trains the norm during peak travel times. Future Green Line cars should be 225 foot cars with smart readers at each door. Questions why the Green Line is at capacity. The possibility of building a flyover between Copley and Arlington Stations should be explored. Platforms at Park, Copley, Boylston, and Arlington stations should be lengthened, as well as existing surface Green Line stations. Discusses the possibilities of taking the existing outbound E branch track from Boylston Street to Huntington Avenue out of revenue service make it available as a storage track allowing parking for a disabled trains or for overnight storage. | |
| McGrath Boulevard (Somerville) | Resident, City of Somerville | Chris Gunadi | Supports inclusion of the McGrath Boulevard project in the LRTP. States that the project will make the area more accessible and pedestrian-friendly, and improve quality of life. | |
| McGrath Boulevard (Somerville) | Resident, City of Medford | Kevin Cuddeback | Supports inclusion of the McGrath Boulevard project in the LRTP. | |
| McGrath Boulevard (Somerville) | Resident, City of Medford | Patrick Bibbins | Supports inclusion of the McGrath Boulevard project in the LRTP. | |

## TABLE D.1 (Cont.)

| Project(s) / Issue(s) | Affiliation | Name | Comment | MPO Response (to be added) |
|---|---|---|---|---|
| McGrath Boulevard (Somerville) | Resident, City of Somerville | Karen Molloy | Supports inclusion of the McGrath Boulevard project in the LRTP. | |
| Green Line, Bruce Freeman Rail Trail, Montvale Avenue Reconstruction, and McGrath Boulevard | Resident, City of Medford | Ken Krause | Supports inclusion of the Green Line Extension, Phases I & II, in the FFYs 2016-20 TIP. States that the project will improve regional mobility, air quality and transportation equity, and generate an estimated $4 billion in related economic development activity. Notes that Medford has already seen a tremendous amount of associated economic development and is benefiting from the nearly completed rail bridge reconstruction over Harvard Street.<br><br>Supports funding to extend the Bruce Freeman Rail Trail (Phases 2B and 2C) as part of the 200-mile Bay Circuit Trail and Greenway.<br><br>Supports funding to reconstruct and widen Montvale Avenue in Woburn from the I-93 interchange to Central Street, including new sidewalks and wheelchair ramps.<br><br>Supports inclusion of the McGrath Boulevard project in the LRTP. States that the project will improve conditions for bicycling and walking, and provide safer and more convenient access to Union Square and Washington Street Green Line stations. | |
| McGrath Boulevard and Bicycle & Pedestrian Projects | Friends of the Community Path | Lynn Weissman & Alan Moore | Supports inclusion of the McGrath Boulevard project in the LRTP. States that the project will make the area more accessible and pedestrian-friendly, and improve quality of life.<br><br>Urges the MPO to: (1) Continue funding of multi-use paths (2) Shift funding away from highway expansion (3) Prioritize bicycle and pedestrian projects when programming the Clean Air and Mobility funds | |
| Green Line/ McGrath Boulevard (Somerville) | Resident, City of Somerville | Alan Moore | Supports inclusion of the Green Line to Route 16 and the McGrath Boulevard projects in the LRTP. Other necessary projects include continued funding to support multi-use paths, shifting funding away from highway expansion, and prioritizing bicycle and pedestrian projects with future Clean Air/Mobility funds. | |

## TABLE D.1 (Cont.)

| Project(s) / Issue(s) | Affiliation | Name | Comment | MPO Response (to be added) |
|---|---|---|---|---|
| Green Line/ McGrath Boulevard | Members of the Massachusetts State Legislature | Senator Jehlin, Representative Barber, Representative Garballey, Representative Provost, Representative Toomey | Support the MPO's commitment to both phases of the Green Line Extension which is important to their constituents. Also supports the inclusion of the McGrath Boulevard project in the 2026-2030 time band of the LRTP. | |
| Green Line Phase 1, Community Path, Green Line Phase 2, Rutherford Avenue, and McGrath Boulevard | STEP & MVTF | Wig Zamore | Appreciates the work of the Boston MPO and finds the meetings, staff presentations, Board discussion, and public outreach to be exemplary. The certification documents represent appropriate prioritization of sustainable transit and complete streets, with growing regional walk and bike facility emphasis. Applauds the MPO's decision to fund community-based projects at the expense of some larger highway projects.<br><br>Grateful to see Green Line Phase 1 and Community Path supported by the state. Also grateful to see Green Line Phase 2, Rutherford Avenue, and McGrath Boulevard supported by the MPO. | |
| Air Quality | STEP & MVTF | Wig Zamore (cont.) | Regarding environmental impacts of transportation, hopes that the MPO will soon be able to fully recognize the serious impacts of transportation air pollution and noise on nearby residents, workers, and students. Regarding climate, states that it would be helpful to include black carbon from diesel in our climate pollutant inventories and in transportation conformity. With regard to equity, states that it would be beneficial to more fully use disaggregated TAZ level data to really investigate the disparities in transportation neighborhood facilities and transportation exposures. | |

## TABLE D.1 (Cont.)

| Project(s) / Issue(s) | Affiliation | Name | Comment | MPO Response (to be added) |
|---|---|---|---|---|
| Green Line and Air Quality Conformity | Conservation Law Foundation (CLF) | Rafael Mares | Supports the Green Line Extension project in the TIP.<br><br>Requests that the MPO return to its previous practice of conducting a conformity analysis for ozone. A recent court action affirmed the requirement for the MPO to conduct an ozone conformity analysis. CLF understands that the MPO did not plan to continue to abandon this tool but did so on the advice of US EPA. Normally after a region achieves attainment, it moves into a maintenance process. When the 2008 ozone standard was established, the 1997 standard was revoked and Eastern Massachusetts became an ”orphan area” where conformity was not required. A court decision determined that this revocation violates the Clean Air Act.<br><br>Pursuant to this ruling, the MPO would be required to conduct a conformity determination, however, EPA issued a new rule revoking the entire 1997 air quality standard which was presumably the agency’s basis for advising MassDOT and the MPO that no conformity analysis was required. This revocation is being challenged again.<br><br>Since the MPO intends to conduct a greenhouse gas analysis, adding the conformity analysis for ozone will not be an arduous additional step. This will allow the MPO to assure its members and the public that the proposed plan remains consistent with the goal of protecting the region from serious public health threats associated with ozone. | |
| Grand Junction Multi-Use Path | Resident, City of Cambridge | Mark Jaquith | Requests inclusion of the Grand Junction Multi-Use Path in the LRTP. States that connecting East Somerville, North Point, East Cambridge, Kendall Square, MIT/ Cambridgeport, and Allston Landing to the existing Minuteman, Charles River, and Harborwalk path systems will make bicycle commuting a safer, more accessible alternative for thousands of individuals. | |

## TABLE D.1 (Cont.)

| Project(s) / Issue(s) | Affiliation | Name | Comment | MPO Response (to be added) |
|---|---|---|---|---|
| Planning Process/ Evacuation Planning/ Bicycle and Pedestrian Design | Framingham Bicycle and Pedestrian Advisory Committee | Tom Branham | The overall emphasis and connotation of Boston as the core demotes every other region to insignificance. There is a need to establish permanent regional cooperative intergovernmental forums (for example the MetroWest open space forums). Having open lines of communication could encourage a plethora of new ideas. Serious consideration should be held to define new standards for a low speed electric personal transportation (wheelchairs, e-assist bikes, Segway's, etc.). Global warming-planning should be done to allow for potential evacuation needs, including the potential for temporary storage of essential transit, rescue and repair vehicles. Seeing more bike and pedestrian awareness in design and overall conceptual design is very encouraging. Provided grammatical and formatting notes and suggestions throughout the document. | |
| Bicycle & Pedestrian Projects | Resident, Town of Framingham | William Hanson | Delighted to see the commitment to infrastructure improvements benefitting pedestrian and bicyclists. As a resident of Framingham, supports projects in his community such as the Bruce Freeman Rail Trail and the Cochituate Trail. Also supports additional pedestrian crossings across Route 9.<br><br>States that it would be convenient to be able to download the entire document in one file and to create full document automation with active intra-document links. | |
| Bicycle Projects | | David Hutcheson | The LRTP should strongly include rail trails and bicycle and pedestrian access. The Bruce Freeman Rail Trail, Mass Central Rail Trail, Assabet River Rail Trail, and Bay Colony Rail Trail allow for good health. | |

## TABLE D.1 (Cont.)

| Project(s) / Issue(s) | Affiliation | Name | Comment | MPO Response (to be added) |
|---|---|---|---|---|
| Malden/ Revere/ Saugus Route 1 Transportation Improvement Project | North Shore Alliance for Economic Development | Chief Elected Officials from Danvers, Essex, Georgetown, Hamilton, Ipswich, Lynnfield, Middleton, Newbury, Salem, Salisbury, Saugus, Revere, Swampscott, Wenham, Winthrop, Gloucester, Beverly, Newburyport, Rockport, Peabody, Marblehead, Lynn, Manchester, Nahant | Concerned that the Route 1 Transportation Improvement Project has been removed from the Draft LRTP. Route 1 commuters have been forced to contend with these worsening and intolerable conditions along Route 1 for too long. The chief elected officials are requesting that MassDOT and the MPO (1) Reevaluate the Route 1 Improvement project to identify “specific phases” of the project that will address some of the immediate traffic, safety and environmental concerns that affect communities all along the Route 1 North corridor and (2) Include an identified and appropriate phase of the Route 1 Improvement Project as eligible for funding in the Final LRTP and FFY2016-2019 TIP respectively. By phasing the project and funding a portion of the improvements, some progress can be realized. | |
| Malden/Revere/ Saugus Route 1 Transportation Improvement Project | North Shore Alliance for Economic Development (cont.) | Chief Elected Officials from Danvers, Essex, Georgetown, Hamilton, Ipswich, Lynnfield, Middleton, Newbury, Salem, Salisbury, Saugus, Revere, Swampscott, Wenham, Winthrop, Gloucester, Beverly, Newburyport, Rockport, Peabody, Marblehead, Lynn, Manchester, Nahant (cont.) | This stretch of highway creates negative effects and disincentives for private investment, job creation, and economic development on the North Shore. This is a “”highway nightmare”” on a daily basis. Despite exhaustive efforts and participation by the Alliance, the Commonwealth has not advanced this project. They collectively request that MassDOT and the Boston Region MPO revisit the decision to remove the Route 1 Improvement project from the current Draft LRTP and the FFY 2016-2019 TIP and to identify “specific phases” of the project that will address some of the immediate traffic, safety, and environmental concerns that affect communities all along the Route 1 North corridor. | |

## TABLE D.1 (Cont.)

| Project(s) / Issue(s) | Affiliation | Name | Comment | MPO Response (to be added) |
|---|---|---|---|---|
| Malden/Revere/ Saugus Route 1 Transportation Improvement Project | Cities of Malden, and Revere, and Town of Saugus | Gary Christenson, Mayor of Malden Daniel Rizzo, Mayor of Revere Scott Crabtree, Town Manager of Saugus | Dismayed to learn that the Malden/ Revere/Saugus Route 1 Transportation Improvement project is not included in the TIP and LRTP. Communities are negatively impacted in terms of commute time and wasted economic opportunity; constitutes an incredible waste of energy, time, and human potential. The three communities propose a three-phase plan over a multi-year period (plan attached to comment letter). The project segments have within them certain actions that could be approached sequentially over a defined time period.<br><br>There was a $10 million authorization in the 2013 Bond Bill but was not prioritized in the 2015-2018 TIP. The Commonwealth must take steps that can aid the hundreds of thousands of long suffering Route 1 commuters and hundreds of businesses forced to contend these deplorable conditions. They ask that the Project Selection Advisory Committee meet with the chief executives of the three communities to discuss a path to resolving the issue. Would like this to happen before the final 2016-2020 STIP is approved. | |
| Route 4/225(Bedford Street) and Hartwell Avenue Project (Lexington) | Town of Lexington, Planning Board | Aaron Henry, Planning Director | Supports inclusion of the Route 4/225(Bedford Street) and Hartwell Avenue Project in the LRTP. This corridor is a significant link in the regional transportation and economic development network. The Town supports and recognizes that the existing transportation infrastructure needs to be upgraded to support future development. Inclusion of this project is an important step to improve conditions along this corridor. | |
| Climate Change | Resident, City of Cambridge | John MacDougall | Concerned about MassDOT's slow progress in meeting the requirements of the 2008 Global Warming Solutions Act. | |

## TABLE D.1 (Cont.)

| Project(s) / Issue(s) | Affiliation | Name | Comment | MPO Response (to be added) |
|---|---|---|---|---|
| Canton Interchange Project | Three Rivers Interlocal Council (TRIC) | Sarah Raposa | Between 2007 and 2015, TRIC has been consistent in supporting the full completion of the Canton Interchange project to alleviate public safety and traffic congestion issues at this location. It is a continuing detriment to quality of life and viability and prosperity of business interests that depend on a functional roadway system capable of handling employee commutes, truck deliveries, and customer access. Full completion has been promised repeatedly over the years. Information on this project has been sparse and this jeopardizes good faith efforts between communities and private developers. Complete funding must be found to move this project forward. | |
| I-93/I-95 Interchange in Woburn, Reading, Stoneham, and Wakefield/ Increased Transit | North Suburban Planning Council | Kristin Kassner | Supports the MPO's decision to shift the majority of funding away from larger projects to fund smaller local projects. They also feel that some portion of the I-93/I-95 Interchange in Woburn, Reading, Stoneham, and Wakefield (or at least some feasible transit improvements in the area) should be funded. This interchange is central to vehicular circulation in the region. There are significant safety problems and it is a high crash location. The safety and congestion issues are highly concerning.<br><br>The significant amount of drivers in the subregion is a result of a lack of public transportation. Many communities are providing alternative transportation options but more is needed. Alternative options must be available and if the interchange is not remedied, the economy of the subregion will be threatened.<br><br>Requests that a small portion of funding be dedicated to continuing to advance the interchange project and studies should be pursued to identify feasible alternatives for public transportation to serve the subregion. | |

# TABLE D.1 (Cont.)

| Project(s) / Issue(s) | Affiliation | Name | Comment | MPO Response (to be added) |
|---|---|---|---|---|
| Climate Change | Massachusetts Sierra Club | Cathy Ann Buckley, Chairman | The statement in Chapter 8 that addresses global warming should read "The largest threat the MPO and humanity face is the need to reduce GHG emissions that contribute to climate change, which if unchecked, will impair our transportation system and way of life on an unparalleled scale." This statement should appear at the beginning of Chapter 8, and Chapter 8 should be Chapter 1 of the LRTP because many worthwhile things are included in this chapter. Many of the people that approved the list of projects in the LRTP either did not read or do not believe what is in this chapter.<br><br>The climate impacts that we are experiencing today are based on the carbon dioxide emissions from the last 100 years. By 2040, the emissions of 1915 to 1940 will fall out and be replaced by the emissions we generate now through 2040. To include significant funds to deal with what we are inviting by our inaction on climate would be intelligent and courageous. To ignore them is politically expedient. With each passing year of inaction we become less able to change this trajectory. The LRTP states that the project mix is expected to show a neutral shift toward meeting the GHG reduction goal. What would someone reading this plan in 2040 think? Perhaps - "what were we thinking, we still had a chance in 2015."<br><br>Please educate people to the real and present threat of climate change. Publicize that a gallon of gasoline creates twenty pounds of carbon dioxide. Tell us why Massachusetts has made idling illegal. Educate us as to why raising transit fares is bad for our financially neediest residents today and for all of us tomorrow, that a healthy transit system is good for motorists, too. Please lead.<br><br>Those who study climate know that we are approaching - at an accelerating rate - a point of no return. Accumulating evidence indicates that this may well be the last Plan where we still have a chance to make a positive impact. | |

## TABLE D.1 (Cont.)

| Project(s) / Issue(s) | Affiliation | Name | Comment | MPO Response (to be added) |
|---|---|---|---|---|
| Planning Process/ Alewife/Fresh Pond area in Cambridge | The Fresh Pond Residents Alliance | Arthur Strang | The Alliance is confounded by the complexity, multilayer, independent government offices, each of which has a distinct responsibility quasi-insulated from the other by the structure of management of transportation in Massachusetts, which is not responsible or responsive to the commuter. Each day, the commuter tests the maximum capacity of our roads and our transit systems. We find this daily test inimical to urban neighborhoods and unresponsive to the demands of the urban commuter. Although good, skilled, knowledgeable, and dedicated people are operating the commuter system, their efforts are hindered by the lack of money for maintenance and the lack of clear management from the top. Clarity of strategy and a redirection of intent are required for mobility in the neighborhoods of rising density in Urban Metropolitan Boston.<br><br>Specific comments are in regard to the Alewife/Fresh Pond area in Cambridge, where development is adding to congestion, commuting hours are lengthening, speeds are falling, and the Red Line is near capacity. The roads are full, especially during peak periods, and it is unlikely that more lane miles will be built in Urban Metropolitan Boston and Complete Streets will reduce vehicle lane miles.<br><br>Transportation funding is tight and uncertain. Low cost pedestrian improvements facilitate high density transit in areas like Alewife and Kendall Square. High occupant vehicles—buses operated privately, by TMAs, or RTAs are a relatively low-cost way to increase road capacity and commuting speeds.<br>The strategic statement of Charting Progress 2040 should be walk, bike, bus, and rail. The strategy requires well planned investment in paths that are direct, safe, and attractive, and significantly better management of the operations of buses, subway, and rail, and better management and more money for maintenance of transit. | |

## TABLE D.1 (Cont.)

| Project(s) / Issue(s) | Affiliation | Name | Comment | MPO Response (to be added) |
|---|---|---|---|---|
| Alewife/Fresh Pond area in Cambridge | The Fresh Pond Residents Alliance | Arthur Strang (cont.) | A clear strategy is critical for the rising development around transit centers, for the technology growth centers in Urban Metropolitan, and for older close-in neighborhoods for which more attractive and safer walking paths can make transportation more neighborhood friendly. Some communities will need more proactive guidance and support to implement strategy.<br><br>Given fixed, even declining lane space, the only way to accommodate growth is to increase the 'density' of commuters, not the density of vehicles and cars. To do this, government at all levels must act to support transit that will attract more riders.<br><br>The MPO's Operations and Management strategy is a good beginning for solving our problems, but it needs to go further. A more neighborhood-centric approach is needed for urban mobility in the future, which would support a combination of walk, bike, bus, applications, transit, rail, and "walk the last mile." Alewife could be an example of this approach.<br><br>There is only one major transit infrastructure investment listed in the LRTP, the Green Line Extension, yet other major transit investments are needed to tackle the problem of urban traffic congestion and the current lack of efficient mobility. These include a Red-Blue Line connection, other subway line extensions, and major commuter rail improvements. A new commuter station at Alewife on the Fitchburg Line would also be helpful.<br><br>The Alliance also made specific comments regarding possible corrections to some of the maps in Chapter 3 | |

# E APPENDIX METHODOLOGY FOR LAND USE PROJECTIONS IN THE BOSTON REGION

## INTRODUCTION

The Metropolitan Area Planning Council (MAPC), the region's land use planning agency, is responsible for preparing detailed transportation analysis zone (TAZ)-level socioeconomic and land use projections out to the year 2040 to support the Long-Range Transportation Plan (LRTP) travel-demand model process. MAPC began this process with the development of regional and municipal population and household projections for the entire Metro Boston model region. Because the model region includes an additional 63 municipalities in adjacent regional planning agencies (RPAs), MAPC convened an advisory team with representatives from neighboring RPAs, along with academic experts, staff from Boston and Cambridge, and state agencies.[1]

MAPC reviewed reports from other regions nationwide to assess the current state of practice and also reviewed prior projections for the Boston region to assess their accuracy and identify opportunities for improvement. Data sources for the demographic projections included decennial census data from 1990, 2000, and 2010; American Community Survey (ACS) data from 2005 to 2011; fertility and mortality information from the Massachusetts Community Health Information Profile; housing production information from the Census Building Permit Survey database; and MAPC's Development Database. For the employment projections, MAPC referred to historic employment data from the US Bureau of Labor Statistics (BLS) and the Executive Office of Labor and Workforce Development, as well as labor force participation data from the US Census Bureau.

Because the future cannot be predicted with certainty, identifying a range of possible futures may prove more useful than a single forecast. Consequently, MAPC prepared two scenarios for regional growth. Each scenario reflects different assumptions about key trends. The "Status Quo" scenario is based on the continuation of existing rates of births, deaths, migration, and housing occupancy. Alternatively, the "Stronger Region" scenario explores how changing trends could result in higher population growth, greater housing demand, and a substantially larger workforce. Specifically, the Stronger Region scenario assumes that in the coming years:

1 A full report, technical documentation, and data downloads are available at www.mapc.org/projections.

- The region will attract and retain more people, especially young adults, than it does today.
- Younger householders (born after 1980) will be more inclined toward urban living than were their predecessors, and they will be less likely to seek out single-family homes.
- An increasing share of senior-headed households will choose to downsize from single-family homes to apartments or condominiums.

Of the two scenarios, the Stronger Region is more consistent with the housing, land use, and workforce development goals of MetroFuture, MAPC's regional plan for sustainable and equitable growth and development in the region. This scenario has been adopted by MAPC for future planning purposes and, as a result, the LRTP socioeconomic data is based on the Stronger Region scenario.

# METHODOLOGY

## *Municipal Population and Household Projections*

MAPC first developed regional projections of population by age, gender, and race, utilizing a standard cohort survival methodology with age- and race-specific fertility and mortality rates based on information from the Massachusetts Department of Public Health (DPH). Disaggregated and adjusted age- and race-specific migration rates to and from the region were used, based on migration data available from the US Census Bureau's ACS and Public Use Microdata Sample (PUMS). Household estimates are produced using region-wide age-specific headship rates derived from the decennial census, and they are disaggregated into households by type (family versus nonfamily) and size.

Municipal population projections were initially developed using age- and municipal-specific fertility and mortality rates from the DPH. Net migration by age for each municipality was calculated using the vital statistics method, which compares the actual population in 2010 to the "expected" population, which was derived from Census 2000 counts and recorded deaths during the subsequent ten-year period. Any difference between the observed and expected population is assumed to be the result of migration in or out of the municipality. The independently projected population for each of the 164 cities and towns was calculated and compared to the regional control total in order to produce an adjustment factor that was applied universally to each age cohort so that the municipal sum would match the regional total. After adjusting the municipal totals, they were aggregated to the RPA geographies to derive totals for the Boston Metropolitan Planning Organization (MPO) region.

To estimate change in households, regional headship[2] rates (by household type) were applied to the population in households for 2010 and forecast years, and the difference

2 Headship rates are the number of people who are counted as heads of households.

was calculated. This change in households was added to the actual household counts by age from Census 2010 to produce future-year household estimates by householder age. These households were then disaggregated by household type (family versus nonfamily), income (relative to the area median income defined by the US Department of Housing and Urban Development), and size, based on the distributions observed using decennial census data and ACS microdata. Municipal household projections were allocated to TAZs using the land use model described below.

## *Employment Projections*

MAPC collaborated extensively with the Massachusetts Department of Transportation (MassDOT) to develop employment projections for Massachusetts' MPO regions. An analysis found that as the baby boom generation ages past the age of 65 in the coming decades, a massive wave of retirement is likely to dramatically alter the Massachusetts workforce, making labor availability a major constraint on economic growth. Meanwhile, the state's slow pace of housing construction will make it difficult for younger workers to move into Massachusetts to fill those vacancies. As a result, statewide employment was projected as a function of the available labor force based on demographic projections. In consultation with expert advisors, MAPC also assumed a gradual decrease in the average unemployment rate over the next few decades. Age-specific labor force participation rate was developed for each RPA and applied to the projected population to estimate the number of employed residents. The Stronger Region scenario assumes a gradual decrease in the unemployment rate, from a peak of 8.8 percent in 2010 to 6.0 percent in 2020, 5.8 percent in 2030, and 5.6 percent in 2040.[3] This scenario is more consistent with long-term unemployment averages (about 5.75 percent from 1990 to 2015 and from 2000 to 2015), and it also reflects the fact that with likely labor shortages in the coming decades as baby boomers retire, workers will find it easier to get a job. The rate of change in employed residents was then used to estimate total future employment in Massachusetts, assuming that in/out commuting will remain a constant share of total employment. The sectoral distribution of employment in future decades was based on a shift-share analysis[4] of Massachusetts sectoral growth versus the rest of the nation, utilizing BLS forecasts to the year 2020, and then continuing an attenuated rate of change for each sector out to the year 2040.

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3 Estimates of a "non-accelerating inflation rate unemployment" (NAIRU) measure of the "natural" unemployment is in the vicinity of 5.0 percent to 5.25 percent. However, this figure is the structural "floor" on unemployment, and any long-term average will also have to account for recessionary periods with higher unemployment.

4 A shift-share analysis is an economic forecasting technique that projects future employment change for a specified area (such as a state or region) as a function of three key factors: a *general growth effect,* reflecting change in employment for a larger reference area (such as the nation); an *industry mix effect,* reflecting differential growth rates for specific sectors; and a *local share effect,* based on the specified area's performance in each sector relative to the reference area.

MAPC then used shift-share methods to analyze how the economic trends of the 164 municipalities in Metro Boston compare to the state. Metro Boston jobs grew an average of 0.66 percent faster than Massachusetts overall over the last decade. As a result, future employment share for the region was derived based on the total employment projection for the state. Shifts in employment sectors in the region (by the 2-digit North American Industry Classification System [NAICS] sectors) were analyzed to get a composite share of employment for 2020. The logarithmic extrapolation using the shift in share from 2001, 2010, and 2020 was used to determine the respective sectoral shares for 2030 and 2040. Municipal and TAZ allocation of employment was done using the land use model described below.

## *TAZ Allocation*

MAPC worked collaboratively with MPO staff to procure and develop a regional Land Use Model, which distributes households and employment to TAZs based on a variety of zonal attributes, including access to employment and labor, development capacity, and new real estate development already "in the pipeline." After reviewing the wide variety of land use modeling software tools currently available, MAPC and CTPS procured Citilabs "Cube Land" software. Based on the bid-rent model at the core of the software, the model "agents" (households or employers) compete for available real estate. The agent's location is a result of interaction with other agents, the agent's ability to afford a location, the attractiveness of a location based on neighborhood characteristics, transportation connectivity and other attributes, and other factors. MAPC defined the agents to be consistent with the previously developed population and household projections as well as employment projections.

A total of 24 model agents were defined, composed of 13 household agents and 11 employment agents. The household agents are defined in terms of the age of the householder, the household type, the household size, and income level. Table E-1 summarizes the 13 household agent types by their characteristics.

## TABLE E.1
## Land Use Model Household Agent Description

| HH Agent Code | Age Range | HH Type | HH Size | Income | Agent Description |
|---|---|---|---|---|---|
| 1 | 15-34 | Nonfamily | 2-4+ Persons | All income levels | 15-34 Nonfamily 2-4+ persons HH all income |
| 2 | 15-34 | Nonfamily | 1 Person | All income levels | 15-34 Nonfamily single person HH all income |
| 3 | 15-44 | Family | 2-4+ Persons | Above 80% AMI | 15-44 Family 2-4+ persons HH high income |
| 4 | 15-44 | Family | 2-4+ Persons | Below 80% AMI | 15-44 Family 2-4+ persons HH low income |
| 5 | 35-64 | Nonfamily | 2-4+ Persons | All income levels | 35-64 Nonfamily 2-4+ persons HH all income |
| 6 | 35-64 | Nonfamily | 1 Person | Above 80% AMI | 35-64 Nonfamily single person HH high income |
| 7 | 35-64 | Nonfamily | 1 Person | Below 80% AMI | 35-64 Nonfamily single person HH low income |
| 8 | 45-64 | Family | 2-4+ Persons | Above 80% AMI | 45-64 Family 2-4+ persons HH high income |
| 9 | 45-64 | Family | 2-4+ Persons | Below 80% AMI | 45-64 Family 2-4+ persons HH low income |
| 10 | 65+ | Both family and nonfamily | 2-4+ Persons | Above 80% AMI | 65+ Family and nonfamily 2-4+ persons HH high income |
| 11 | 65+ | Both family and nonfamily | 2-4+ Persons | Below 80% AMI | 65+ Family and nonfamily 2-4+ persons HH low income |
| 12 | 65+ | Nonfamily | 1 Person | Above 80% AMI | 65+ Nonfamily single person HH high income |
| 13 | 65+ | Nonfamily | 1 Person | Below 80% AMI | 65+ Nonfamily single person HH low income |

AMI = average median income. HH = household

MAPC created a residential location choice model based on responses from the Massachusetts Travel Survey.[5] Travel survey responses were assigned to an agent category based on household type, householder age, household size, and reported income, and they were geocoded to individual parcels based on the reported home address. These observations of actual households formed the basis for estimating location choice preferences used in the bid-rent model.

5 http://www.massdot.state.ma.us/planning/Main/MapsDataandReports/Reports/TravelSurvey.aspx

While the Cube Land software is most commonly used to allocate regional totals to zones, MAPC chose to set up the model in such a way that the previously developed municipal population and household totals would be maintained, so as to preserve LRTP consistency with the Regional Housing Plan and other policy documents. Therefore, the model's primary role was to determine the distribution of household agents to TAZs *within* each municipality, not to forecast regional-scale population movement.

The regional travel-model land use inputs are more detailed than the 13 agents reflected in Table E-1. The regional model inputs include:

- Households by four income groups
- Households by household size (one-person households, two-person households, three-person households, and households with four or more persons)
- Households by workers (zero-worker households, one-worker households, two-worker households, and households with three or more workers)

In addition, the regional travel model requires information on households by auto availability (zero-auto households, one-auto households, two-auto households, and households with three or more autos).

MAPC and the MPO staff have jointly developed a methodology to convert the zonal Cube Land output to the needed regional model input. This methodology makes extensive use of the existing census data and uses a methodology known as iterative proportional fitting. Simply stated, the households by income, size, and workers are proportionally scaled to match MAPC-predicted community control totals for population, households, and workers. Once completed, the results of the proportional fitting were manually checked so that all community control totals established by MAPC were precisely matched.

For the auto-owner projections, the MPO staff had developed an auto ownership model. This auto ownership model was estimated from the 2011 Massachusetts Travel Survey data. The model was then calibrated to known Massachusetts Registry of Motor Vehicle data. The auto ownership model uses households by income, households by size, and households by worker as the basis for predicting auto ownership.

The 11 employment agents were defined based on the 2-digit NAICS sector, with an adjustment to move retail employment firms from the Trade, Transportation, and Utilities sectors as grouped in NAICS; the Retail sector was grouped with the Leisure and Hospitality sector. This was done because the location choice of retail jobs and firms more closely follows that of jobs in the Leisure and Hospitality sectors than those in the Wholesale and Transportation sectors. Table E-2 summarizes the grouping of employment by NAICS sector to the 11 employment firms.

## Table E.2
## Land Use Model Employment Agent Description

| NAICS 2-Digit Sector | NAICS Description | Model Firm Number | Model Firm Description |
|---|---|---|---|
| 11 | Agriculture, Forestry, Fishing and Hunting | 8 | Natural Resources and Mining |
| 21 | Mining, Quarrying, and Oil and Gas Extraction | 8 | Natural Resources and Mining |
| 22 | Utilities | 11 | Trade, Transportation, and Utilities |
| 23 | Construction | 1 | Construction |
| 31 | Manufacturing | 7 | Manufacturing |
| 32 | Manufacturing | 7 | Manufacturing |
| 33 | Manufacturing | 7 | Manufacturing |
| 42 | Wholesale Trade | 11 | Trade, Transportation, and Utilities |
| 44 | Retail Trade | 6 | Retail, Leisure and Hospitality |
| 45 | Retail Trade | 6 | Retail, Leisure and Hospitality |
| 48 | Transportation and Warehousing | 11 | Trade, Transportation, and Utilities |
| 49 | Transportation and Warehousing | 11 | Trade, Transportation, and Utilities |
| 51 | Information | 5 | Information |
| 52 | Finance and Insurance | 3 | Financial Activities |
| 53 | Real Estate Rental and Leasing | 3 | Financial Activities |
| 54 | Professional, Scientific, and Technical Services | 10 | Professional and Business Services |
| 55 | Management of Companies and Enterprises | 10 | Professional and Business Services |
| 56 | Administrative and Support and Waste Management and Remediation Services | 10 | Professional and Business Services |
| 61 | Educational Services | 2 | Education and Health Services |
| 62 | Health Care and Social Assistance | 2 | Education and Health Services |
| 71 | Arts, Entertainment, and Recreation | 6 | Retail, Leisure and Hospitality |
| 72 | Accommodation and Food Services | 6 | Retail, Leisure and Hospitality |
| 81 | Other Services (except Public Administration) | 9 | Other Services |
| 92 | Public Administration | 4 | Public Administration |
| 99 | Not Applicable | 9 | Other Services |

NAICS = North American Industry Classification System

MAPC created an employment location choice model by geocoding establishment data from InfoGroup to land parcels, with information about land use, density, and

accessibility. These observations of actual establishment formed the basis for estimating the location choice preferences used in the bid-rent model.

The 13 household agents and the 11 employment agents compete to occupy different types of real estate. The model has a total of 12 real estate types, including single family and multifamily for residential agents, as well as various commercial real estate types, including high- and low-density retail office, warehouse, and institutional real estate. Mixed-use real estate is occupied by both residential and employment agents. In the case of employment, the model also accounted for commercial real estate built since 2000 or proposed for construction. This information was derived from MAPC's Development Database,[6] an online inventory of 3,000 recently completed or anticipated residential and commercial development projects that was compiled based on inputs from municipal planning staff in MAPC's 101 cities and towns, information provided by neighboring RPAs, and MAPC research. The database provided the supply side of real estate that is likely to be available for employment firms to occupy in the future.

The zonal employment data needed by the regional travel model is not as detailed as the 11 employment agents forecast by Cube Land. The regional travel model requires zonal employment for three categories (basic employment, retail employment, and other employment). However, as seen in Table E-2, components of these three categories are parsed throughout the 11 categories used by Cube Land. Consequently, MAPC and the MPO staff developed a methodology for distributing the 11 Cube Land categories across the three categories needed for model input.

Based on the allocation of households from the land use model, additional household attributes that were needed for the travel model were estimated. These included school-age population, workers, and total household population. MAPC provided municipal control totals for these inputs, which were a part of the demographic projections work that had been done previously. PUMS data was used to estimate the population younger than 20 years old in households and was controlled at the municipal level for consistency with the projections. Labor force participation rate and the share of employed residents (both for current and future years) in the municipalities were used to estimate the change in workers.

6 dd.mapc.org

# F APPENDIX GLOSSARY OF ACRONYMS

| Acronym | Definition |
|---|---|
| 3C | continuous, comprehensive, cooperative [planning process] |
| A&F | administration and finance |
| AACT | Access Advisory Committee to the MBTA |
| ABP | Accelerated Bridge Program |
| ADA | Americans with Disabilities Act of 1990 |
| ADT | average daily traffic |
| AFC | automated fare collection |
| AMPO | Association of Metropolitan Planning Organizations |
| APC | automatic passenger counter |
| APTA | American Public Transportation Association |
| ARAN | automatic road analyzer |
| ARRA | The American Recovery and Reinvestment Act of 2009 |
| ASL | American sign language |
| ATR | automatic traffic recorder |
| AVL | automatic vehicle location |
| AWDT | average weekday daily traffic |
| BCIL | Boston Center for Independent Living |
| BRA | Boston Redevelopment Authority |
| BRT | bus rapid transit |
| BTD | Boston Transportation Department |
| CA/T | Central Artery/Tunnel [project] |
| CAA | Clean Air Act of 1970 |
| CAAA | Clean Air Act Amendments of 1990 |
| CATA | Cape Ann Transportation Authority |
| CBD | central business district |
| CFR | Code of Federal Regulation |
| CHSTP | Coordinated Public Transit Human Services Transportation Plan |
| CIC | Community Innovation Challenge |
| CIP | Capital Investment Program |
| CMAQ | Congestion Mitigation and Air Quality |
| CMP | Congestion Management Process |
| CNG | compressed natural gas |
| CO | carbon monoxide |
| CO2 | carbon dioxide |
| CTPS | Central Transportation Planning Staff [to the Boston Region MPO] |
| CTTAP | Community Transportation Technical Assistance Program |

| Acronym | Definition |
|---|---|
| DBMS | Database Management System |
| DCAMM | Division of Capital Asset Management and Maintenance |
| DCR | Department of Conservation and Recreation |
| DEIR | draft environmental impact report [MA] |
| DEIS | draft environmental impact statement [federal] |
| DEP | Department of Environmental Protection [MA] |
| DMU | diesel multiple unit |
| DTA | dynamic traffic assignment |
| EERPAT | Energy and Emissions Reduction Policy Analysis Tool |
| EIR | environmental impact report [MA] |
| EIS | environmental impact statement [federal] |
| EJ | environmental justice |
| EOEEA | Executive Office of Energy and Environmental Affairs [MA] |
| EOHED | Executive Office of Housing and Economic Development [MA] |
| EOHHS | Executive Office of Health and Human Services [MA] |
| EPA | Environmental Protection Agency [federal] |
| EPDO | equivalent property damage only [index] |
| ETC | electronic toll collection |
| FDR | functional design report |
| FEIR | final environmental impact report [MA] |
| FEIR | final environmental impact statement [federal] |
| FFGA | full funding grant agreement |
| FFY, FFYs | federal fiscal year, federal fiscal years |
| FHEA | Fair Housing Equity Assessment |
| FHWA | Federal Highway Administration |
| FONSI | finding of no significant impact |
| FTA | Federal Transit Administration |
| GANS | grant anticipation notes [municipal bond financing] |
| GHG | greenhouse gas [as in greenhouse gas emissions] |
| GIS | geographic information system |
| GLX | Green Line Extension [Green Line Extension project] |
| GPS | global positioning system |
| GWI | global warming index |
| GWSA | Global Warming Solutions Act of 2008 [MA] |
| HOV | high-occupancy vehicle |
| HPP | high-priority projects |
| HSIP | Highway Safety Improvement Program |
| HTC | Healthy Transportation Compact |
| ICC | Inner Core Committee [MAPC subregion] |

| Acronym | Definition |
|---|---|
| IMS | intermodal management system |
| INVEST | Infrastructure Voluntary Evaluation Sustainability Tool [FHWA] |
| IPCC | Intergovernmental Panel on Climate Change |
| ISTEA | Intermodal Surface Transportation Efficiency Act [federal] |
| IT&S | Information Technology and Systems [CTPS group] |
| ITDP | Institute for Transportation and Development Policy |
| ITE | Institute of Transportation Engineers |
| ITS | intelligent transportation systems |
| JARC | Job Access and Reverse Commute [program] |
| LAP | language access plan |
| LCW | Livable Community Workshop |
| LEP | limited English proficiency |
| LNG | liquefied natural gas |
| LOS | level of service |
| LRTA | Lowell Regional Transit Authority |
| LRTP | Long-Range Transportation Plan |
| MAGIC | Minuteman Advisory Group on Interlocal Coordination |
| MAP-21 | Moving Ahead for Progress in the 21st Century Act [federal] |
| MAPC | Metropolitan Area Planning Council |
| MARPA | Massachusetts Association of Regional Planning Agencies |
| MassDOT | Massachusetts Department of Transportation |
| MassGIS | Massachusetts Office of Geographic Information |
| Massport | Massachusetts Port Authority |
| MassRIDES | MassDOT's statewide travel options program |
| MBCR | Massachusetts Bay Commuter Railroad |
| MBTA | Massachusetts Bay Transportation Authority |
| MCAD | Massachusetts Commission Against Discrimination |
| MEMA | Massachusetts Emergency Management Agency |
| MEPA | Massachusetts Environmental Policy Act |
| MGL | Massachusetts general laws |
| MHS | metropolitan highway system |
| MAGIC | Minuteman Advisory Group on Interlocal Coordination [MAPC subregion] |
| MOU | memorandum of understanding |
| MOVES | Motor Vehicle Emissions Simulator [EPA] |
| MPO | metropolitan planning organization [Boston Region MPO] |
| MPOinfo | Boston Region MPO's email contact list |
| MWGMC | MetroWest Growth Management Committee |
| MWRC | MetroWest Regional Collaborative [MAPC subregion] |
| MWRTA | MetroWest Regional Transit Authority |

| Acronym | Definition |
|---|---|
| NAAQS | National Ambient Air Quality Standards |
| NBPD | National Bicycle and Pedestrian Documentation Project |
| NEPA | National Environmental Policy Act |
| NHPP | National Highway Performance Program |
| NMHC | non-methane hydrocarbons |
| NSTF | North Shore Task Force [MAPC subregion] |
| NSPC | North Suburban Planning Council [MAPC subregion] |
| NOx | nitrogen oxides |
| NTD | National Transit Database |
| NTP | notice to proceed |
| O&M | operations and management |
| ODCR | Office of Diversity and Civil Rights [MassDOT] |
| OE | operating expenses |
| OTA | Office for Transportation Access [MBTA] |
| OTP | Office of Transportation Planning [MassDOT] |
| P3 [1] | Public Participation Plan |
| P3 [2] | public private partnership |
| PBPP | performance-based planning and programming |
| PDM | Pre-Disaster Mitigation Program [federal] |
| PEV | pedestrian environmental variable |
| PL | public law [PL] funds, or metropolitan planning funds [FHWA] |
| PM2.5 | particulate matter smaller than 2.5 micrometers in size |
| PM10 | particulate matter up to 10 micrometers in size |
| PMT | Program for Mass Transportation [MBTA] |
| ppm | parts per million |
| PSA | Project Selection Advisory Council |
| RCCs | Regional Coordinating Councils |
| RIF | roadway inventory file |
| RMV | Registry of Motor Vehicles |
| ROC | Rider Oversight Committee [MBTA] |
| ROW | right-of-way |
| RPA | regional planning agency |
| RSA | Roadway Safety Audit [FHWA] |
| RSS | rich site summary [Web, feed] |
| RTA | regional transit authority |
| RTAC | Regional Transportation Advisory Council [Advisory Council] |
| RTC | Regional Transportation Center |

| Acronym | Definition |
|---|---|
| SAFE | service and fare equity [analysis] |
| SAFETEA-LU | Safe, Accountable, Flexible, Efficient Transportation Equity Act−A Legacy for Users |
| SCCCT | Statewide Coordinating Council on Community Transportation |
| SCI | sustainable communities initiative |
| SDO | supplier diversity office |
| SFY | state fiscal year |
| SGR | state-of-good repair |
| SHRP | Strategic Highway Research Program |
| SHSP | Strategic Highway Safety Plan |
| SIP | State Implementation Plan |
| SNAC | special needs advisory committee |
| SNLA | Small Necessities Leave Act |
| SORE | statement of revenue and expenses |
| SOV | single-occupancy vehicle |
| SPR | Statewide Planning and Research |
| SRTS | Safe Routes to School |
| STB | State Transportation Building [Boston] |
| STIP | State Transportation Improvement Program |
| STP | Surface Transportation Program |
| SWAP | South West Advisory Committee [MAPC subregion] |
| TAM | transit asset management |
| TAP | Transportation Alternatives Program |
| TAZ | transportation analysis zone |
| TCMs | transportation control measures |
| TCRP | Transit Cooperative Research Program |
| TDM | travel-demand management, or transportation-demand management |
| TE | transportation equity |
| TEAMS | Travel Efficiency Assessment Method |
| TEA-21 | Transportation Equity Act for the 21st Century [federal] |
| TIGER | Transportation Investment Generating Economic Recovery [TIGER Discretionary Grant program, federal] |
| TIGGER | Transit Investments for Greenhouse Gas and Energy Reduction [FTA grant program] |
| TIP | Transportation Improvement Program [MPO] |
| Title VI | Title VI of the Civil Rights Act of 1964 |
| TMA [1] | transportation management area [FTA, FHWA] |
| TMA [2] | Transportation Management Association |

| Acronym | Definition |
|---|---|
| TMC | turning movement counts |
| TOD | transit-oriented development |
| TRB | Transportation Research Board |
| TREDIS | Transportation Economic Development Impact System [software] |
| TRIC | Three Rivers Interlocal Council [MAPC subregion] |
| TSIMS | Transportation Safety Information Management System |
| TSM | transportation systems management [FHWA] |
| UFP | ultrafine particles |
| UPWP | Unified Planning Work Program |
| US | The United States of America |
| USDOT | United States Department of Transportation |
| USGS | US Geological Survey |
| UZA | urbanized area |
| V/C | volume-to-capacity ratio |
| VHT | vehicle-hours traveled |
| VMS | variable message signs |
| VMT | vehicle-miles traveled |
| VOCs | volatile organic compounds [pollutants] |
| VRH | vehicle revenue-hours |
| VRM | vehicle revenue-miles |
| WalkBoston | pedestrian advocacy group [Boston area] |
| WAT | walk-access transit |
| WMM | weMove Massachusetts [MassDOT long-range transportation plan] |
| WTS | Women in Transportation Seminar |
| YMM | youMove Massachusetts [MassDOT planning initiative] |

# CRASH RATE WORKSHEET

CITY/TOWN : Boston | COUNT DATE : June 2017

DISTRICT : 6 | UNSIGNALIZED : | SIGNALIZED : X

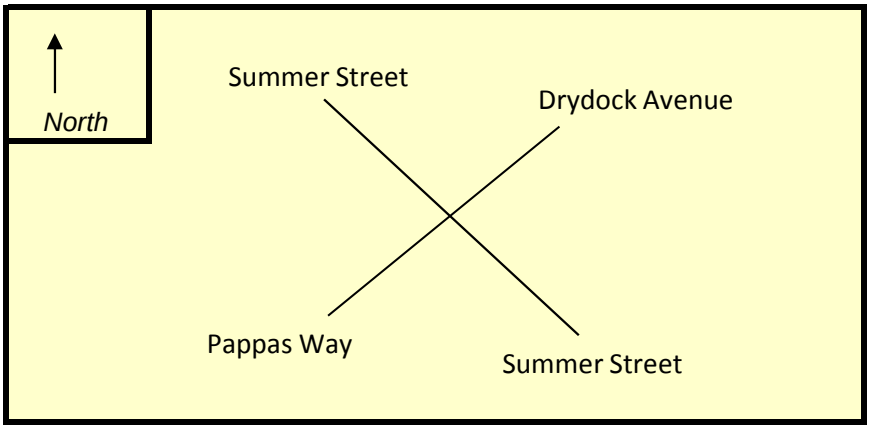
~ INTERSECTION DATA ~

MAJOR STREET : Summer Street

MINOR STREET(S) : Drydock Avenue

Pappas Way

**INTERSECTION DIAGRAM (Label Approaches)**




**Peak Hour Volumes**

| APPROACH : | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| DIRECTION : | NB | SB | EB | WB | | |
| VOLUMES (PM) : | 735 | 1180 | 115 | 550 | | |

" K " FACTOR : 0.09 | APPROACH ADT : 28666.667 **ADT** = TOTAL VOL/"K" FACT.

TOTAL # OF ACCIDENTS : 3 | # OF YEARS : 5 | AVERAGE # OF ACCIDENTS ( **A** ) : 0.60

**CRASH RATE CALCULATION :** 0.06 RATE = $\frac{(A * 1{,}000{,}000)}{(ADT * 365)}$

Source (optional): Volumes from Existing Condition PM Peak

Comments:

# CRASH RATE WORKSHEET

CITY/TOWN : Boston | COUNT DATE : June 2017

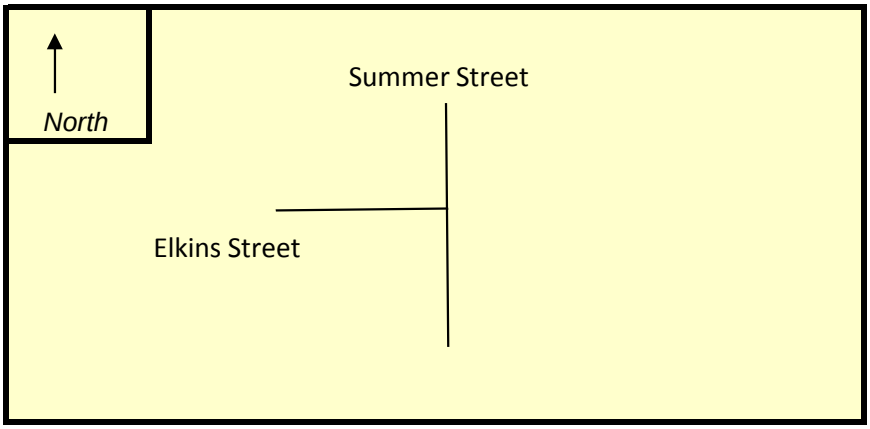
DISTRICT : 6 | UNSIGNALIZED : X | SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Summer Street

MINOR STREET(S) : Elkins Street

**INTERSECTION DIAGRAM**
**(Label Approaches)**




**Peak Hour Volumes**

| APPROACH : | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| DIRECTION : | NB | SB | EB | WB | | |
| VOLUMES (PM) : | 690 | 1110 | 25 | | | |

" K " FACTOR : 0.09 | APPROACH ADT : 20277.778 | **ADT** = TOTAL VOL/"K" FACT.

TOTAL # OF ACCIDENTS : 1 | # OF YEARS : 5 | AVERAGE # OF ACCIDENTS ( **A** ) : 0.20

**CRASH RATE CALCULATION :** 0.03 | RATE = $\frac{(A * 1{,}000{,}000)}{(ADT * 365)}$

Source (optional): Volumes from Existing Condition PM Peak

Comments:

# CRASH RATE WORKSHEET

CITY/TOWN : Boston | COUNT DATE : June 2017

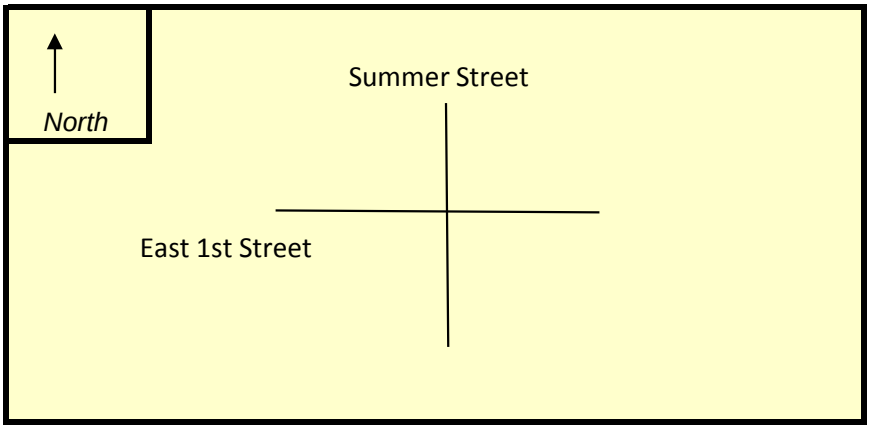
DISTRICT : 6 | UNSIGNALIZED : | SIGNALIZED : X

~ INTERSECTION DATA ~

MAJOR STREET : Summer Street

MINOR STREET(S) : East 1st Street

**INTERSECTION DIAGRAM (Label Approaches)**




**Peak Hour Volumes**

| APPROACH : | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| DIRECTION : | NB | SB | EB | WB | | |
| VOLUMES (PM) : | 550 | 1110 | 190 | 210 | | |

" K " FACTOR : 0.09 | APPROACH ADT : 22888.889 **ADT** = TOTAL VOL/"K" FACT.

TOTAL # OF ACCIDENTS : 4 | # OF YEARS : 5 | AVERAGE # OF ACCIDENTS ( **A** ) : 0.80

**CRASH RATE CALCULATION :** 0.10 RATE = $\frac{(A * 1{,}000{,}000)}{(ADT * 365)}$

Source (optional): Volumes from Existing Condition PM Peak

Comments:

# CRASH RATE WORKSHEET

CITY/TOWN : Boston | COUNT DATE : June 2017

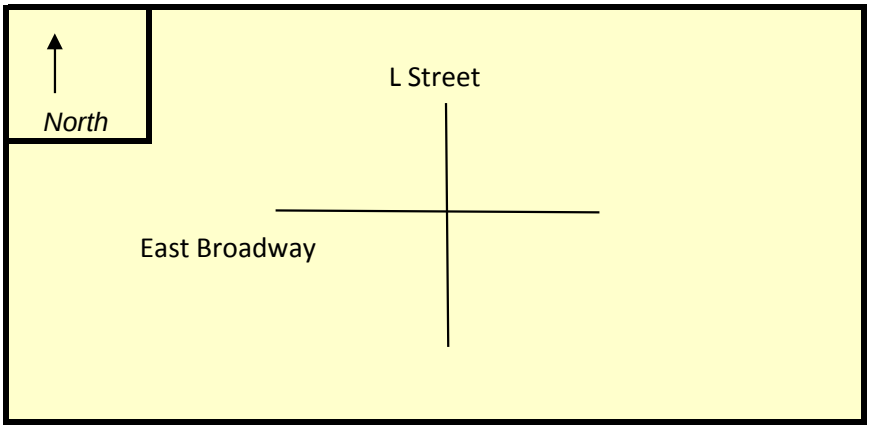
DISTRICT : 6 | UNSIGNALIZED : | SIGNALIZED : X

~ INTERSECTION DATA ~

MAJOR STREET : Summer Street

MINOR STREET(S) : East Broadway

**INTERSECTION DIAGRAM**
**(Label Approaches)**




**Peak Hour Volumes**

| APPROACH : | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| DIRECTION : | NB | SB | EB | WB | | |
| VOLUMES (PM) : | 550 | 755 | 235 | 195 | | |

" K " FACTOR : 0.09 | APPROACH ADT : 19277.778 **ADT** = TOTAL VOL/"K" FACT.

TOTAL # OF ACCIDENTS : 2 | # OF YEARS : 5 | AVERAGE # OF ACCIDENTS ( **A** ) : 0.40

**CRASH RATE CALCULATION :** 0.06 RATE = $\frac{(A * 1{,}000{,}000)}{(ADT * 365)}$

Source (optional): Volumes from Existing Condition PM Peak

Comments:

# CRASH RATE WORKSHEET

CITY/TOWN : Boston | COUNT DATE : June 2017

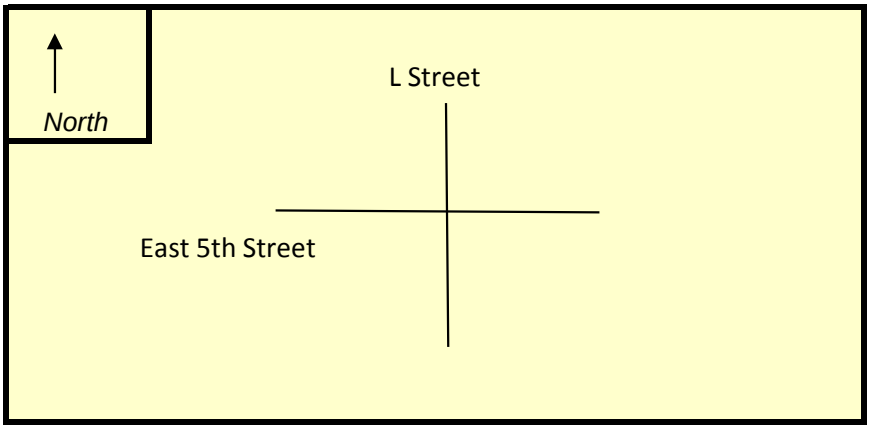
DISTRICT : 6 | UNSIGNALIZED : | SIGNALIZED : X

~ INTERSECTION DATA ~

MAJOR STREET : Summer Street

MINOR STREET(S) : East 5th Street

**INTERSECTION DIAGRAM (Label Approaches)**




**Peak Hour Volumes**

| APPROACH : | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| DIRECTION : | NB | SB | EB | WB | | |
| VOLUMES (PM) : | 530 | 525 | 35 | 65 | | |

" K " FACTOR : 0.09 | APPROACH ADT : 12833.333 **ADT** = TOTAL VOL/"K" FACT.

TOTAL # OF ACCIDENTS : 2 | # OF YEARS : 5 | AVERAGE # OF ACCIDENTS ( **A** ) : 0.40

**CRASH RATE CALCULATION :** 0.09 RATE = $\frac{(A * 1{,}000{,}000)}{(ADT * 365)}$

Source (optional): Volumes from Existing Condition PM Peak

Comments:

# CRASH RATE WORKSHEET

CITY/TOWN : Boston | COUNT DATE : June 2017

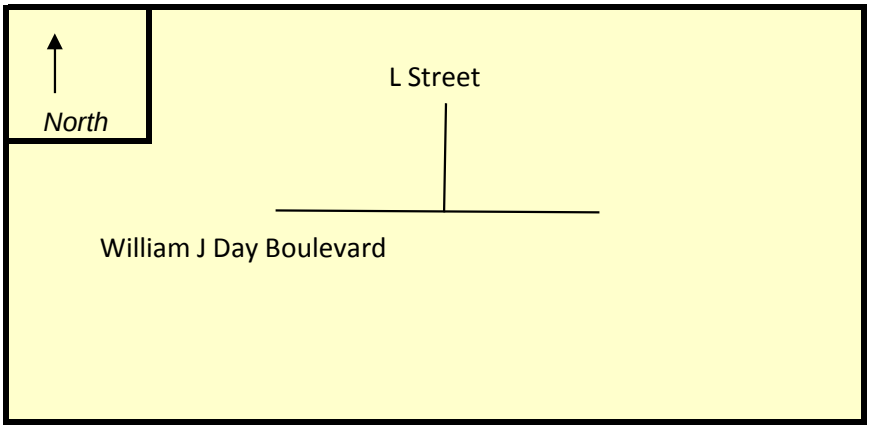
DISTRICT : 6 | UNSIGNALIZED : | SIGNALIZED : X

~ INTERSECTION DATA ~

MAJOR STREET : L Street

MINOR STREET(S) : William J Day Boulevard

**INTERSECTION DIAGRAM (Label Approaches)**




**Peak Hour Volumes**

| APPROACH : | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| DIRECTION : | NB | SB | EB | WB | | |
| VOLUMES (PM) : | | 355 | 825 | 360 | | |

" K " FACTOR : 0.09 | APPROACH ADT : 17111.111 | **ADT** = TOTAL VOL/"K" FACT.

TOTAL # OF ACCIDENTS : 15 | # OF YEARS : 5 | AVERAGE # OF ACCIDENTS ( **A** ) : 3.00

**CRASH RATE CALCULATION :** 0.48 | RATE = $\frac{(A * 1{,}000{,}000)}{(ADT * 365)}$

Source (optional): Volumes from Existing Condition PM Peak

Comments:

# MUTCD 2000 (Millennium Edition)

## TRAFFIC SIGNAL WARRANT ANALYSIS (VOLUME BASED)

**Intersection:** Summer Street @ Elkins Street

**Major Street Direction:** Northbound-Southbound

**Year:** 2030 **Condition:** Full Build

**Operating speed on major roadway:** 25 mph

**Number of approaches:** 4

**Required approach volumes**

| | | | Minimum* | Adjusted Minimum** |
|---|---|---|---|---|
| **Warrant 1** | **EIGHT-HOUR VEHICULAR VOLUME** | | | |
| Warrant 1A | MINIMUM VEHICULAR VOLUME (8 hours of day) | | | |
| | Major Street : | 2 Lane(s) on each approach | 600 | 600 |
| | Minor Street : | 1 Lane(s) on each approach | 150 | 150 |
| Warrant 1B | INTERRUPTION OF CONTINUOUS TRAFFIC (8 hours of day) | | | |
| | Major Street : | 2 Lane(s) on each approach | 900 | 900 |
| | Minor Street : | 1 Lane(s) on each approach | 75 | 75 |
| 80 PERCENT SATISFACTION OF WARRANT 1A **AND** WARRANT 1B | | | Warrant 1A | Warrant 1B |
| | Major Street : | 2 Lane(s) on each approach | 480 | 720 |
| | Minor Street : | 1 Lane(s) on each approach | 120 | 60 |

| | | | |
|---|---|---|---|
| **Warrant 2** | **FOUR HOUR VEHICULAR VOLUME** | | |
| | Major Street : | 2 Lane(s) on each approach | If "verify" indicated, see Figure 4C-1 or 4C-2. |
| | Minor Street : | 1 Lane(s) on each approach | 25 = accuracy of regression equations |

| | | | |
|---|---|---|---|
| **Warrant 3** | **PEAK HOUR VOLUME** | | |
| | Major Street : | 2 Lane(s) on each approach | If "verify" indicated, see Figure 4C-3 or 4C-4. |
| | Minor Street : | 1 Lane(s) on each approach | 25 = accuracy of regression equations |

| Hour | | | Entering Vol. Minor Road+ | Entering Vol. on Major Road Northbound | Entering Vol. on Major Road Southbound | Tot. Ent. Vol. On Major Rd | Meets the following volume-based warrants? 1A | 1B | 80%(1A&1B) | 2 | 3 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Proj. Driveway | | | | | | | | |
| 6:00 - | 7:00 | AM | 112 | 902 | 381 | 1283 | No | Yes | No | Verify | No |
| 7:00 - | 8:00 | AM | 140 | 1074 | 528 | 1602 | No | Yes | Yes | Yes | Verify |
| 8:00 - | 9:00 | AM | 138 | 1053 | 524 | 1577 | No | Yes | Yes | Yes | Verify |
| 9:00 - | 10:00 | AM | 119 | 813 | 551 | 1364 | No | Yes | No | Yes | No |
| 10:00 - | 11:00 | AM | 100 | 624 | 520 | 1144 | No | Yes | No | Verify | No |
| 11:00 - | 12:00 | AM | 97 | 566 | 546 | 1112 | No | Yes | No | Verify | No |
| 12:00 - | 1:00 | PM | 99 | 560 | 570 | 1130 | No | Yes | No | Verify | No |
| 1:00 - | 2:00 | PM | 99 | 535 | 600 | 1135 | No | Yes | No | Verify | No |
| 2:00 - | 3:00 | PM | 126 | 621 | 816 | 1437 | No | Yes | Yes | Yes | No |
| 3:00 - | 4:00 | PM | 129 | 602 | 869 | 1470 | No | Yes | Yes | Yes | Verify |
| 4:00 - | 5:00 | PM | 148 | 746 | 942 | 1688 | No | Yes | Yes | Yes | Yes |
| 5:00 - | 6:00 | PM | 219 | 708 | 1041 | 1749 | Yes | Yes | Yes | Yes | Yes |
| 6:00 - | 7:00 | PM | | | | 0 | No | No | No | No | No |
| | | | | | | | **No** | **Yes** | **No** | **Yes** | **Yes** |
| | | | | | **Warrants Met?** | | | **1** | | **2** | **3** |
| | | | | | | | | **Yes** | | **Yes** | **Yes** |

*From the criteria described for the warrant in the MUTCD.

**If the operating speed is higher than 40mph then the volumes can be adjusted to 70%. (If no adjusted minimum, the minimum from the previous column is shown)

+If more than one approach, report the approach that has the higher volume.

## NON-VOLUME-BASED WARRANTS

**Warrant 4, Minimum Pedestrian Volume:** No

Peak Four Hour Pedestrian Volumes: 46
(non-concurrent) 33
85
112

**Warrant 5, School Crossing:**
See MUTCD for details.

**Warrant 6, Coordinated Signal System:**
See MUTCD for details.

**Warrant 7, Crash Experience:** No
# of accidents "correctable by signalization" occuring in the last 12 months:

**Warrant 8, Roadway Network:**
See MUTCD for details.

**Source:** *Manual on Uniform Traffic Control Devices* (MUTCD); Millenium Edition, December 2000

last updated: 12/12/01

# Appendix E: Wind and Noise Supporting Documentation

# FINAL REPORT

# 776 SUMMER STREET

BOSTON, MA

PEDESTRIAN WIND STUDY
RWDI # 1802421
August 7, 2018


**SUBMITTED TO**

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CANADA'S BEST MANAGED COMPANIES Platinum member

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# EXECUTIVE SUMMARY

The predicted wind comfort and safety conditions pertaining to the No Build, Phase 1A, Phase 1B, Phase 2, and Phase 3 configurations tested are graphically depicted on site plans in Figures 1a through 2e. These conditions and the associated wind speeds are also numerically presented in Table 1. The results presented can be summarized as follows:

**Effective Gust Speed**

- Wind speeds at most locations and for all test configurations are predicted to meet the effective gust criterion.
- An exception occurs near the southwest corner of the Phase 1B building in the Phase 1B and Phase 2 configurations, where wind speeds that exceed the effective gust criterion are expected. Satisfactory wind speeds in this area can be achieved either by planting additional coniferous or marcescent landscaping to the north of this location or using a canopy or trellis, along the west façade of the Phase 1B building.

**Mean Speed**

- Existing mean speeds are typically comfortable for walking in more exposed areas, with those in more sheltered areas generally comfortable for sitting or standing. Conditions are uncomfortable near the existing building corners.
- In the Phase 1A configuration, mean speeds are generally expected to be comfortable for walking or better around the project site, with uncomfortable mean speeds predicted near the northern building corners and between the buildings.
- In the Phase 1B configuration, conditions comfortable for walking or better are also predicted for the project site with the proposed landscaping in place, with uncomfortable mean speeds expected near the building corners.
- In the Phase 2 configuration, uncomfortable mean speeds to the northeast of the Phase 1B building are generally anticipated to reduce to be suitable for walking. However, uncomfortable mean speeds are expected near the building corners and beneath the passageway through the south Phase 2 building.
- In the Phase 3 configuration, mean speeds close to the Phase 1A, Phase 1B, and Phase 3 buildings are predicted to improve to be generally suitable for sitting or standing. However, uncomfortable mean speeds are expected near the Phase 3 building corners.
- Should a reduction in uncomfortable mean speeds be desired by the design team, satisfactory wind speeds can be achieved through the use of coniferous or marcescent landscaping placed in areas of elevated wind activity. Conditions near entrance locations can be improved using windscreens, canopies, landscaping, or recessing the entrance into the building façade.

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# 1 INTRODUCTION

RWDI was retained by Stantec Architecture to conduct a Pedestrian Wind Assessment for the proposed 776 Summer Street project in Boston, MA. This report presents the project objectives, background, approach, provides a discussion of the results from RWDI's assessment and provides conceptual wind control measures, where necessary. The criteria recommended by the Boston Planning and Development Agency (BPDA) were used in this study.

## 1.1 Project Description

The project (site shown in Image 1) consists of a large, multi-building residential development, including condominiums, rental properties, and hotels.

## 1.2 Objectives

The objective of the study was to assess the effect of the proposed development on local conditions in pedestrian areas around the study site and provide recommendations for minimizing adverse effects. The study involved wind simulations on a 1:300 scale model of the proposed building and surroundings. These simulations were conducted in RWDI's boundary-layer wind tunnel at Guelph, Ontario, to quantify local wind speed conditions and compare to appropriate criteria for gauging wind comfort in pedestrian areas. The assessment focused on critical pedestrian areas including walkways between the individual buildings and sidewalks along adjacent and nearby streets.




**Image 1: Aerial View of Site and Surroundings – Courtesy of Google™ Earth**

# 2 BACKGROUND AND APPROACH

## 2.1 Wind Tunnel Study Model

To assess the wind environment around the proposed project, a 1:300 scale model of the project site and surroundings was constructed for the wind tunnel test with the following configurations tested:

A – No Build: Existing site with existing surroundings (Image 2a).

B – Phase 1A: Proposed Phase 1A buildings with existing surroundings, including 10 ft tall, 70% solid windscreens beneath the Phase 1A building passage (Image 2b).

C – Phase 1B: Proposed Phase 1B building and previous phases with existing surroundings, including 15 ft deep, 70% solid canopies along the southeast and northwest Phase 1B building corners and coniferous landscaping throughout the project site (Image 2c).

D – Phase 2: Proposed Phase 2 buildings and previous phases with existing surroundings, including mitigation measures from previous phases (Image 2d).

E – Phase 3: Proposed Phase 3 buildings and previous phases with existing surroundings, including additional coniferous landscaping in conjunction with mitigation measures from previous phases (Phase 2e).

The scale model of the proposed project (as shown in Images 2a through 2e) was constructed using the design information and drawings listed in ***Appendix A***. The wind tunnel model included all relevant surrounding buildings and topography within an approximate 1200 ft radius of the study site. The mean speed profile and turbulence of the natural wind approaching the modelled area were also simulated in RWDI's boundary layer wind tunnel. The scale model was equipped with 248 specially designed wind speed sensors that were connected to the wind tunnel's data acquisition system to record the mean and fluctuating components of wind speed at a full-scale height of 5 feet above grade in pedestrian areas throughout the study site. Wind speeds were measured for 36 wind directions, in 10 degree increments, starting from true north. The measurements at each sensor location were recorded in the form of ratios of local mean and gust speeds to the reference wind speed in the free stream above the model. The placement of wind measurement locations was based on our experience and understanding of the pedestrian usage for this site, and reviewed by Stantec Architecture. These measurements were recorded for 36 equally incremented wind directions.

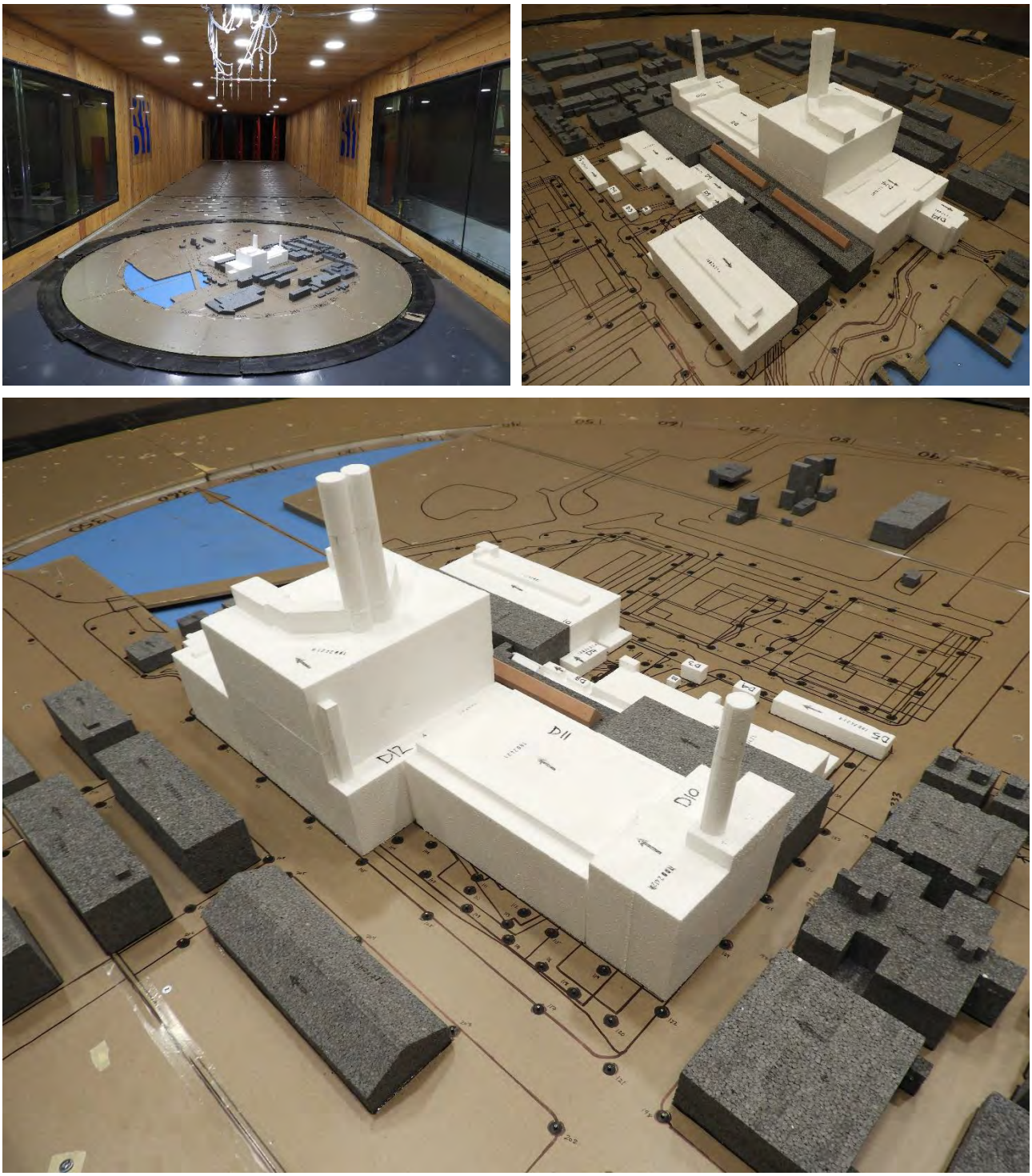


**Image 2a: Wind Tunnel Study Model – No Build Configuration**





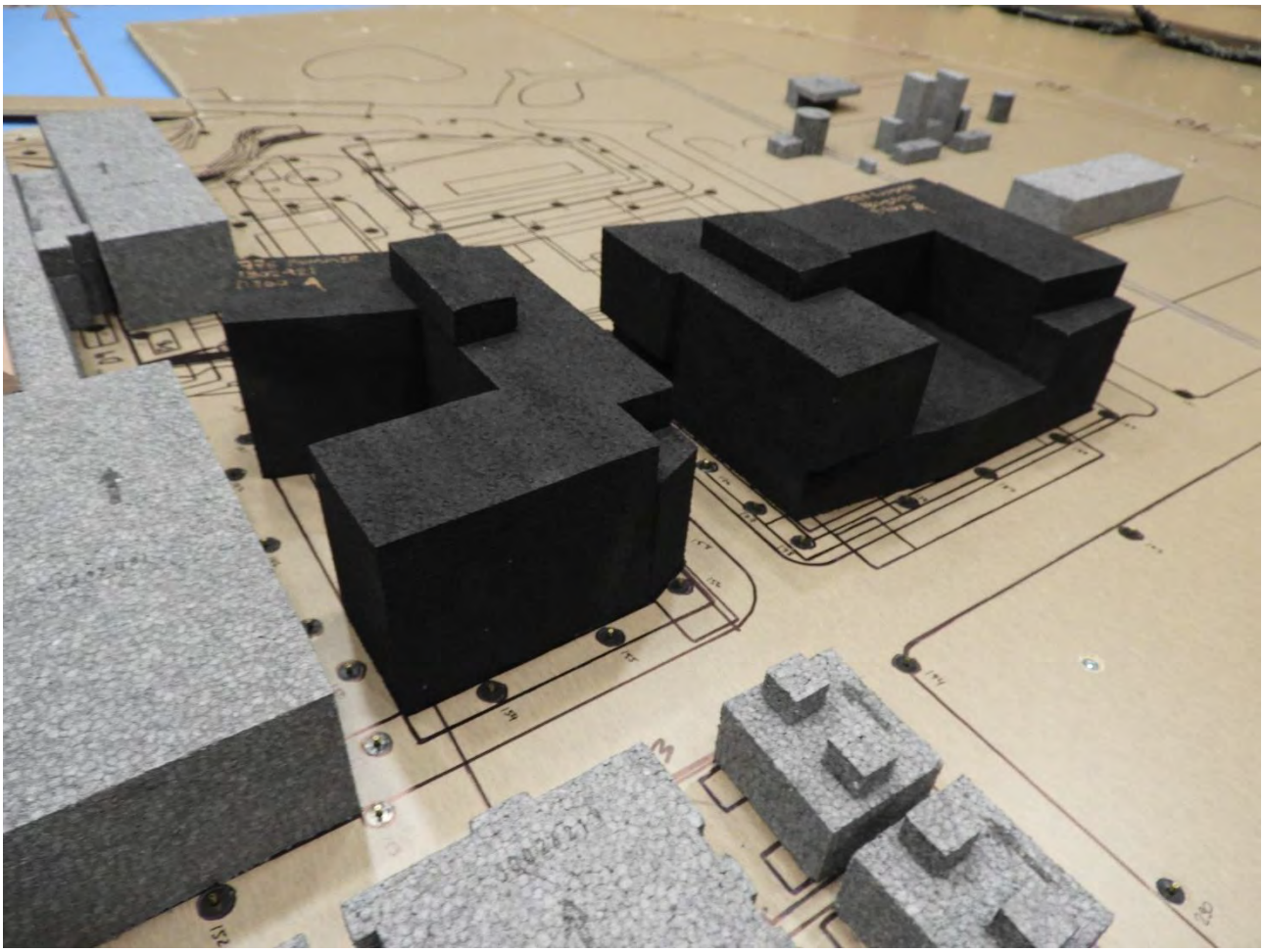


**Image 2b: Wind Tunnel Study Model – Phase 1A Configuration**





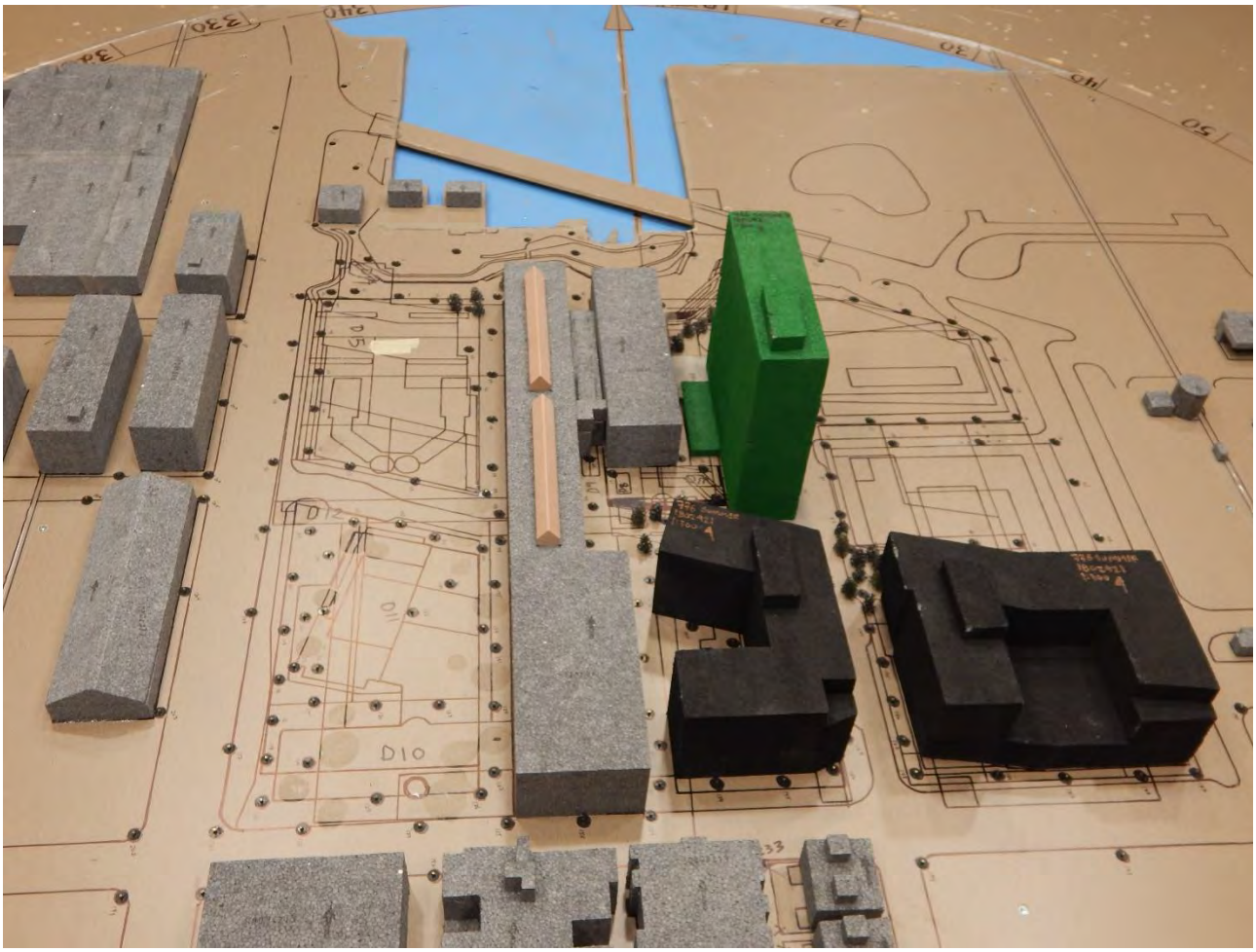
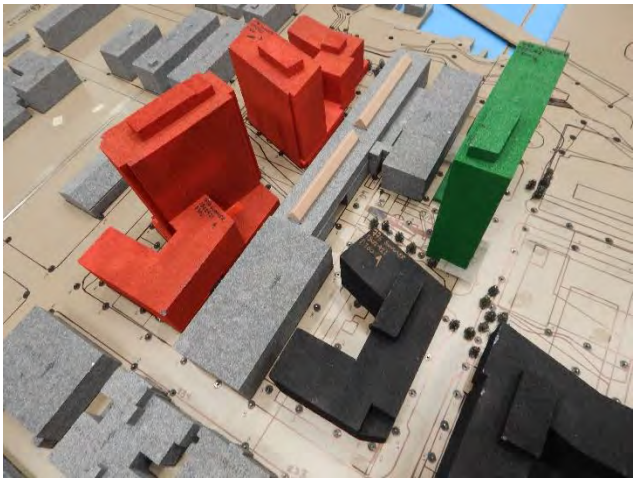


**Image 2c: Wind Tunnel Study Model – Phase 1B Configuration**





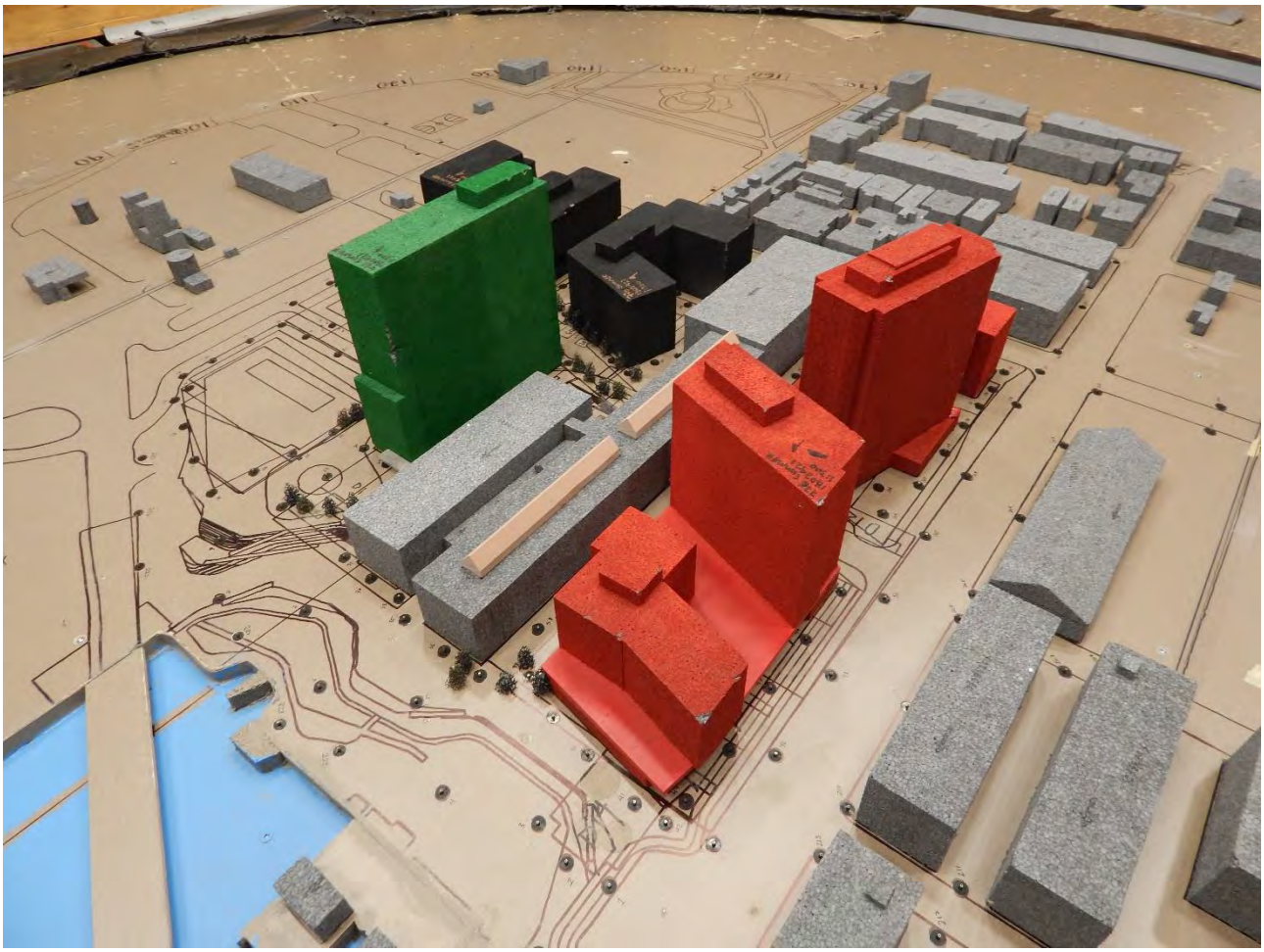
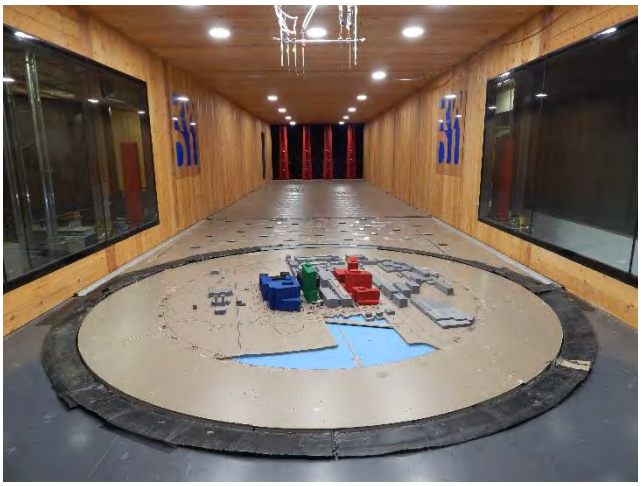
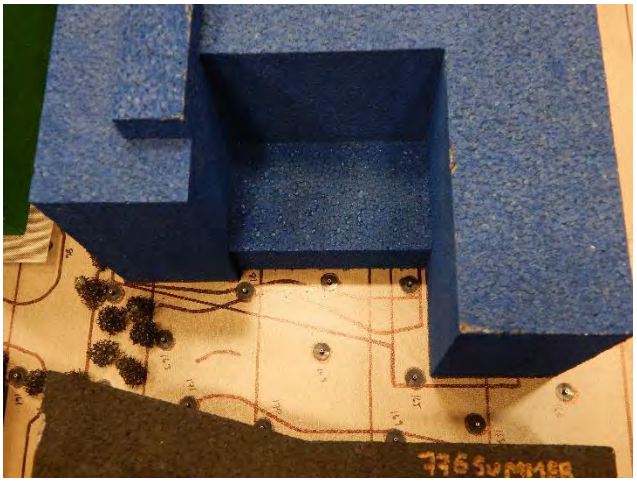


**Image 2d: Wind Tunnel Study Model – Phase 2 Configuration**





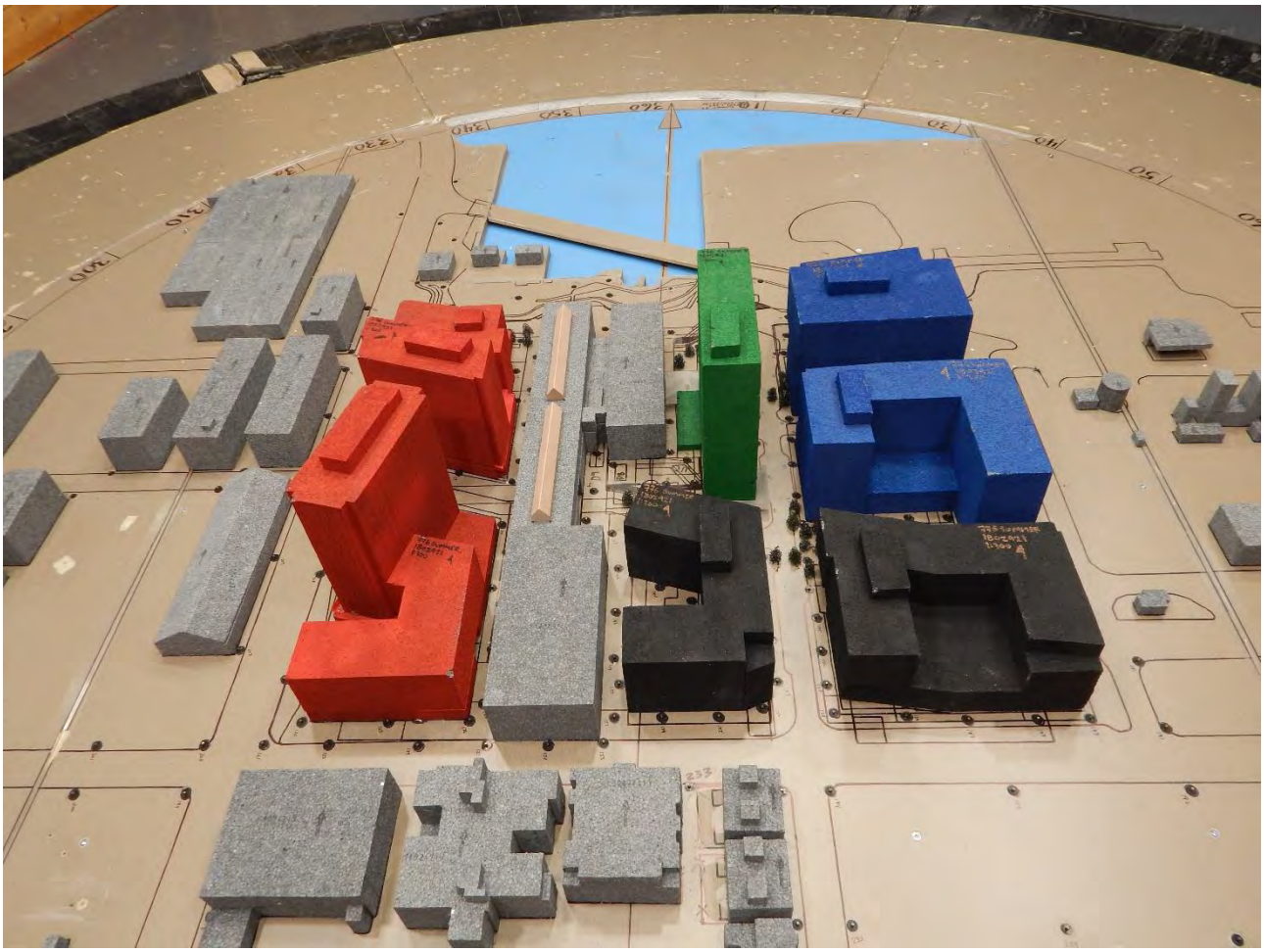
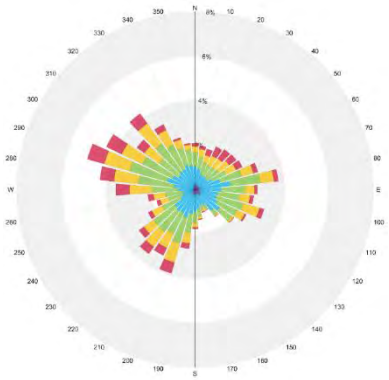


**Image 2e: Wind Tunnel Study Model – Phase 3 Configuration**

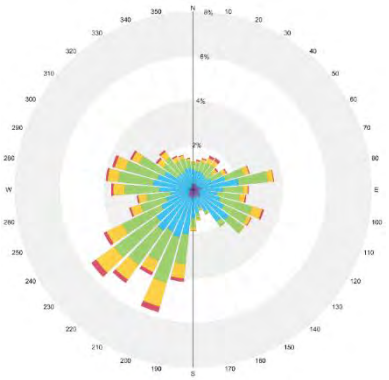
## 2.2 Meteorological Data

The results were then combined with long-term meteorological data, recorded during the years 1995 through 2017 at Boston's Logan International Airport to predict full scale wind conditions. The analysis was performed separately for each of the four seasons and for the entire year. Images 3 and 4 present "wind roses", summarizing the seasonal and annual wind climates in the Boston area respectively, based on the data from Logan Airport.

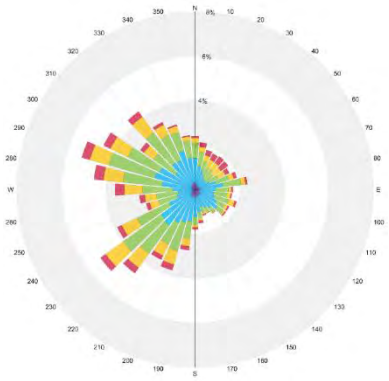
For example, the first wind rose, in Image 3, summarizes the spring (March, April, and May) wind data which in general, indicate prevailing winds occurring from the northwest to south-southwest and northeast to east-southeast and strong winds (red bands), primarily occurring from the west-northwest, northwest, south-southwest and west directions.



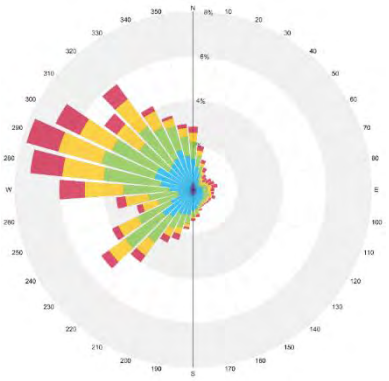
**Spring (March – May)**



**Summer (June – August)**



**Fall (September – November)**

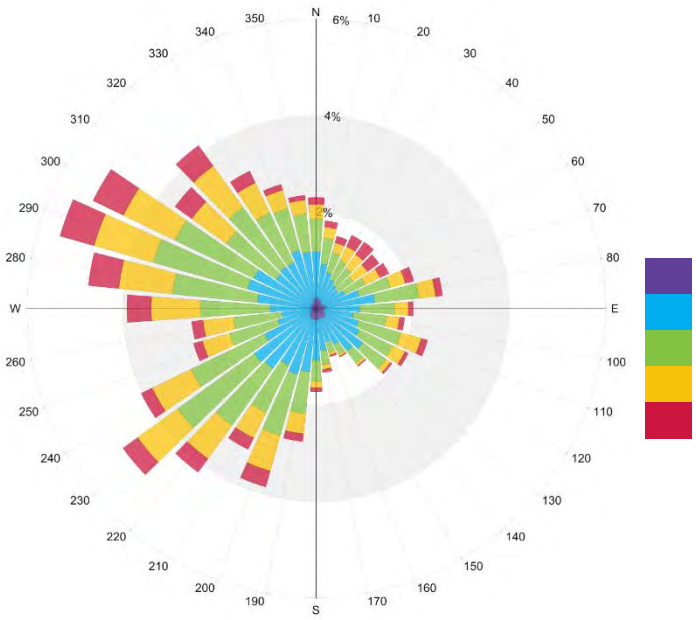


**Winter (December – February)**

| Wind Speed (mph) | Probability (%) Spring | Summer | Fall | Winter |
|---|---|---|---|---|
| Calm | 2.8 | 3.1 | 3.4 | 2.6 |
| 1-5 | 6.8 | 9.5 | 8.7 | 6.5 |
| 6-10 | 28.9 | 38.7 | 34.5 | 27.9 |
| 11-15 | 32.5 | 34.4 | 32.0 | 30.8 |
| 16-20 | 19.1 | 11.8 | 14.6 | 19.7 |
| >20 | 10.0 | 2.6 | 6.8 | 12.4 |

**Image 3: Seasonal Directional Distribution of Winds Approaching Boston Logan International Airport from 1995 through 2017**

On an annual basis, the most common wind directions are those between north-northwest and south-southwest. Winds from the east-northeast to the east-southeast are also relatively common. In the case of strong winds, west-northwest, northwest and west are the dominant wind directions.




| Wind Speed (mph) | Probability (%) Annual |
|---|---|
| Calm | 3.0 |
| 1-5 | 7.9 |
| 6-10 | 32.5 |
| 11-15 | 32.4 |
| 16-20 | 16.3 |
| >20 | 7.9 |

**Image 4: Annual Directional Distribution of Winds Approaching Boston Logan International Airport from 1995 through 2017**

## 2.3 Wind Criteria

The BPDA has adopted two standards for assessing the relative wind comfort of pedestrians. First, the BPDA wind design guidance criterion states that an effective gust velocity (hourly mean wind speed +1.5 times the root-mean-square wind speed) of 31 mph should not be exceeded more than one percent of the time. The second set of criteria used by the BPDA to determine the acceptability of specific locations is based on the work of Melbourne. This set of criteria is used to determine the relative level of pedestrian wind comfort for activities such as sitting, standing, or walking. The criteria are expressed in terms of benchmarks for the 1-hour mean wind speed exceeded 1% of the time (i.e., the 99-percentile mean wind speed). They are as follows:

**BPDA Mean Wind Criteria***

| Comfort Category | Mean Wind Speed (mph) |
|---|---|
| **Dangerous** | > 27 |
| **Uncomfortable for Walking** | > 19 and ≤ 27 |
| **Comfortable for Walking** | > 15 and ≤ 19 |
| **Comfortable for Standing** | > 12 and ≤ 15 |
| **Comfortable for Sitting** | < 12 |

* Applicable to the hourly mean wind speed exceeded 1% of the time.

The consideration of wind in planning outdoor activity areas is important since high winds in an area tend to deter pedestrian use. For example, winds should be light or relatively light in areas where people would be sitting, such as outdoor cafes or playgrounds. For bus stops and other locations where people would be standing, somewhat higher winds can be tolerated. For frequently used sidewalks, where people are primarily walking, stronger winds are acceptable. For infrequently used areas, the wind comfort criteria can be relaxed even further. The actual effects of wind can range from pedestrian inconvenience, due to the blowing of dust and other loose material in a moderate breeze, to severe difficulty with walking due to the wind forces on the pedestrian.

The wind climate found in a typical downtown location in Boston is generally comfortable for the pedestrian use of sidewalks and thoroughfares and meets the BPDA effective gust velocity criterion of 31 mph. However, without any mitigation measures, this wind climate is likely to be frequently uncomfortable for more passive activities such as sitting.

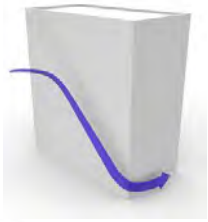
## 2.4 General Wind Flow Patterns

In our discussion of wind conditions, reference is made to the following generalized wind flows (Image 6):



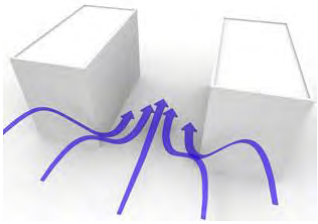
***Downwashing***

Tall buildings tend to intercept the stronger winds at higher elevations and redirect them to the ground level. This is often the main cause for wind accelerations around large buildings at the pedestrian level.



***Corner Acceleration***

When winds approach at an oblique angle to a tall façade and are deflected down, a localized increase in the wind activity or corner acceleration can be expected around the downwind building corner at pedestrian level.



***Channeling Effect***

When two buildings are situated side by side, wind flow tends to accelerate through the space between the buildings due to channeling effect caused by the narrow gap.

**Image 5: Generalized Wind Flows**

If these building/wind combinations occur for prevailing winds, there is a greater potential for increased wind activity at ground level. Design details such as; deep canopies close to ground level, wind screens, tall trees with dense landscaping, etc. (Image 7) can help reduce wind speeds. The choice and effectiveness of these measures would depend on the exposure and orientation of the site with respect to the prevailing wind directions and the size and massing of the proposed buildings.

***Canopy, landscaping and wind screens (left to right)***

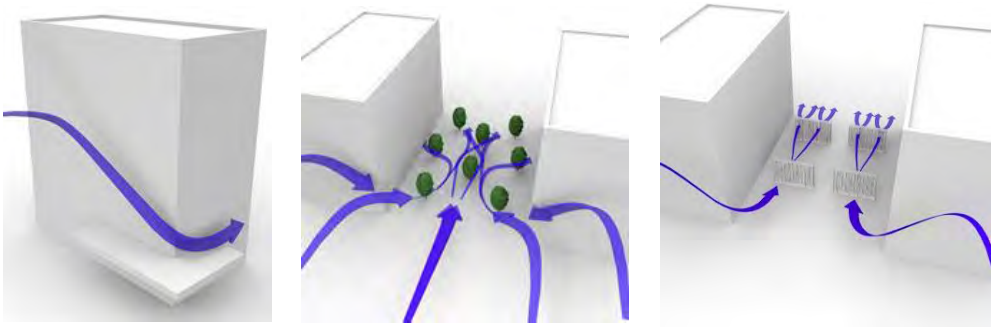


**Image 6: Common Wind Control Measures**

# 3 RESULTS AND DISCUSSION

The predicted wind comfort and safety conditions pertaining to the No Build, Phase 1A, Phase 1B, Phase 2, and Phase 3 configurations assessed are graphically depicted on site plans in Figures 1a through 2e, located in the "***Figures***" section of this report. These conditions and the associated wind speeds are also presented in Tables 1 and 2, located in the "***Tables***" section of this report. Typically, the summer and fall winds tend to be more comfortable than the annual winds while the winter and spring winds are less comfortable than the annual winds. The following summary of pedestrian wind comfort is based on the annual winds for each configuration tested.

The following is a detailed discussion of the suitability of the predicted wind comfort and safety conditions for the anticipated pedestrian use of each area of interest.

## 3.1 Mean Speed

Wind conditions comfortable for walking are appropriate for sidewalks and walkways around the project site as pedestrians will be active and less likely to remain in one area for prolonged periods of time. Lower wind speeds, conducive to standing, are preferred at main entrances where pedestrians are apt to linger.

### 3.1.1 No Build

Existing mean speeds are typically comfortable for walking in areas of the project site that are more exposed to prevailing winds (Figure 1a). Winds at areas, such as immediately to the east of the existing building, are generally comfortable for sitting or standing. Conditions are uncomfortable for walking around the northeast, southwest, and northwest corners of the existing building due to northwesterly, westerly, and northeasterly winds, respectively, accelerating around the corresponding corners.

### 3.1.2 Phase 1A

In the Phase 1A configuration, mean speeds are generally expected to be similar to existing, with wind speeds typically comfortable for walking or better around the project site (Figure 1b). Although conditions close to the Phase 1A buildings are anticipated to be comfortable for sitting or standing, elevated wind speeds, uncomfortable for walking, are predicted near the building corners and between the two buildings as prevailing winds from northwest through northeast directions accelerate around those corners and channel between the buildings (Locations 138, 159, 160, 166, 167, and 173, Figure 1b).

Mean speeds comfortable for walking or uncomfortable for walking are higher than desired for entrance locations where pedestrians can be expected to linger. Should mitigation of elevated wind speeds near any building entrance locations be desired by the design team, a reduction in wind speeds can be achieved by placing windscreens or dense landscaping on either side of the affected entrance locations. An alternative wind control measure for building entrances is to recess the entrance location into the building façade, if feasible. Example photos of recessed entrances and windscreens and landscaping near entrances are shown in Image 8.



**Image 8: Examples of Recessed Entrances, Windscreens, and Landscaping Near Entrances**

Furthermore, the Phase 1A configuration was tested with 10 ft tall, 70% solid windscreens beneath the passageway through the renovated existing building (Location 96, Figure 1b) to disperse strong channeling westerly winds. It is recommended that the design team implement staggered windscreens along the walkways beneath the passageway to ensure comfortable conditions. Examples of windscreens are shown in Image 9.

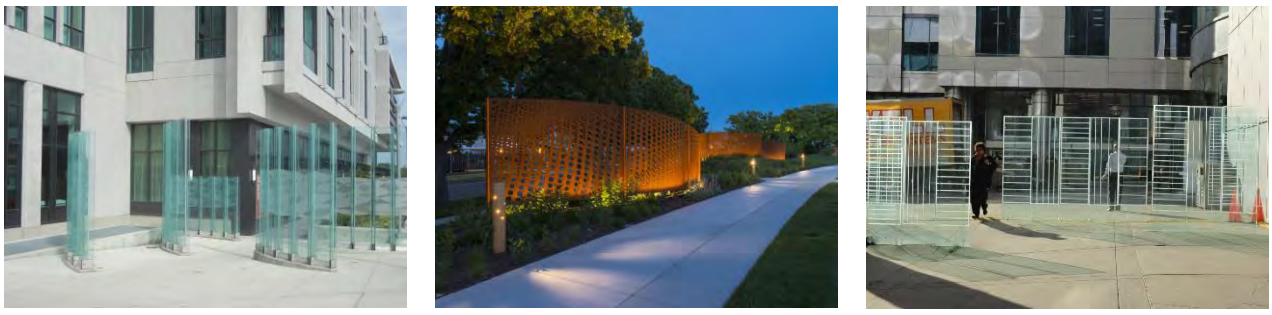


**Image 9: Examples of Windscreens**

### 3.1.3 Phase 1B

In the Phase 1B configuration, mean speeds are typically predicted to be comfortable for walking or better throughout the project site with the proposed coniferous landscaping present (Figure 1c). However, conditions uncomfortable for walking are expected closer to the Phase 1B building, to the northeast, southeast, and southwest, as westerly winds downwash off the west tower façade and accelerate around the northwest and southwest building corners. Conversely, strong northeasterly winds downwash off the east tower façade and accelerate around the southeast corner to generate elevated mean speeds at that corner (Location 86, Figure 1c). It is recommended that 12 to 15 ft deep, 70% solid canopies be added above the southeast and northwest corners and west façade of the Phase 1B building to help disperse downwashing winds and improve conditions. Examples of canopies at building corners are shown in Image 10.

Mean speeds uncomfortable for walking predicted for the Phase 1A configuration are generally predicted to remain with the addition of the Phase 1B building.



**Image 10: Examples of Canopies at Building Corners**

### 3.1.4 Phase 2

The addition of the Phase 2 buildings (north and south buildings) in the presence of Phase 1 is expected to increase local wind activity near the Phase 2 buildings themselves and toward the west end of the project site. Mean speeds uncomfortable for walking are predicted near the northwest, west, and southeast of the north building and near the north, northeast, southwest, and beneath the passageway of the south building (Figure 1d). Uncomfortable mean speeds stem primarily from northwesterly through southwesterly winds downwashing off the tower façades and/or accelerating around the building corners. Uncomfortable conditions in the passageway beneath the south building result from westerly winds channeling beneath the passage (Location 129, Figure 1d).

Should an improvement in uncomfortable conditions near the buildings be desired by the design team, satisfactory wind speeds can be achieved through the use of coniferous or marcescent landscaping planted near areas of higher wind activity. Similar to Phase 1A, higher wind speeds near any main building entrances can be reduced by placing windscreens or dense landscaping on either side of the affected entrance locations, or by recessing the entrance into the building façade (Image 8). For the passageway through the south Phase 2 building, an improvement in conditions can be achieved using staggered wind screens, similar to those outlined for Phase 1A and shown in Image 9.

The addition of the Phase 2 buildings is anticipated to improve mean speeds to the northeast of the Phase 1B building, as six uncomfortable locations in the Phase 1B configuration improve to be comfortable for walking in the Phase 2 configuration (Locations 9, 10, 11, 25, 26, and 226, Figures 1c and 1d). The improvement results from the Phase 2 buildings sheltering the project site from strong westerly prevailing winds. However, uncomfortable mean speeds near the Phase 1A buildings remain typically unchanged with the addition of the Phase 2 buildings.

### 3.1.5 Phase 3

Phase 3 consists of the addition of two buildings (north and south), and trees along the north façade of the south Phase 3 building, in the presence of Phases 1 and 2 as previously described. The addition of Phase 3 is generally anticipated to reduce mean speeds close to the Phase 1A, Phase 1B, and Phase 3 buildings to being comfortable for sitting or standing, with some areas comfortable for walking (Figure 1e).

Mean speeds uncomfortable for walking are predicted near the northwest, northeast, and southeast corners of the north Phase 3 building (Locations 10, 13, 15, 18, and 19, Figure 1e) and near the southeast corner of the south Phase 3 building (Locations 166 and 168, Figure 1e). Uncomfortable conditions result mainly from northwesterly and northeasterly prevailing winds accelerating around the Phase 3 building corners. Northeasterly winds also channel between the south Phase 3 and the east Phase 1A buildings to generate elevated wind speeds between the buildings (Location 168, Figure 1e).

Although a general improvement in mean speeds is anticipated with the addition of the Phase 3 buildings, uncomfortable conditions previously predicted along the east façade and at the southwest corner of the Phase 1B building and in the areas described previously for the Phase 2 buildings, are expected to remain. As with previous phases, uncomfortable mean speeds can be reduced through the use of additional landscaping or other wind control features recommended for the building perimeter and main entrances.

## 3.2 Effective Gust Speed

Wind speeds at most locations and for all test configurations as described in Section 2.1, are predicted to meet the effective gust criterion on an annual basis (Figures 2a through 2e). An exception occurs near the southwest corner of the Phase 1B building in the Phase 1B and Phase 2 configurations, where wind speeds that marginally exceed the effective gust criterion are expected (Location 91, Figures 2c and 2d). These are also transient building configurations and not the Full Build configuration. Wind control measures recommended for these configurations in Sections 3.1.3 and 3.1.4 are expected to reduce the effective gust speeds in this area. A more localized alternative to address the effective gust speed exceedance only, would be additional coniferous or marcescent landscaping to the north of this location, along the west façade of the Phase 1B building. Further wind tunnel testing will be carried out during the detailed design stage of the project to further optimize the localised landscaping at this location.

## 3.3 Landscaping

The quality of wind reduction provided by landscaping features is intensely subject to fluctuation of growing conditions and maintenance. The choice of the species of any selected tree intended for wind control is up to the discretion of the landscape architect as well as the project design team. The tree type that is selected will need to be capable of withstanding winds of a higher magnitude and planted correctly in a soil that is conducive to the effective growth of the tree to remain beneficial for wind control over time. Furthermore, suggested wind mitigation measures may be modified and updated as the project design advances.

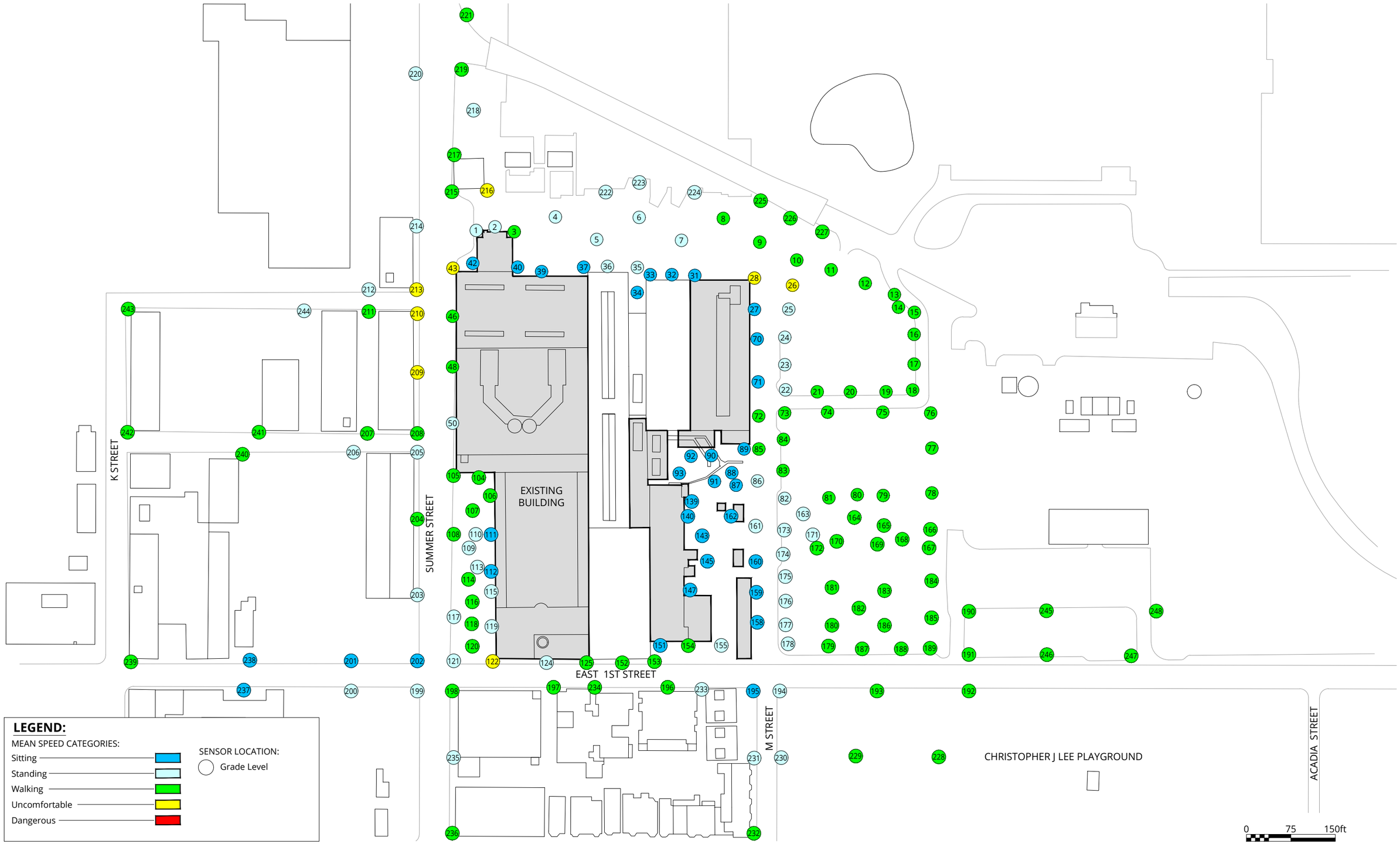
# 4 CONCLUSIONS

Based on the discussions on the predicted wind conditions, we recommend the following conceptual measures for wind control:

- Staggered windscreens, 7 to 10 ft tall and 70% solid, along the walkways beneath the passageway through the renovated Phase 1A building.
- Porous canopies, 12 to 15 ft deep and 70% solid, along the northwest and southeast corners and the west façade of the Phase 1B building.
- A more localized alternative to address effective gust speed conditions at the southwest corner of Phase 1B is additional landscaping, not outlined in the figures, along the west façade of the Phase 1B building.
- Coniferous or marcescent landscaping throughout the project site for Phases 1B and 2, as outlined in Figures 1a through 1d and 2a through 2d.
- Additional landscaping along the north façade of the south Phase 3 building, as outlined in Figures 1e and 2e.
- Windscreens or landscaping on either side of entrance locations where mean speeds exceed the standing criterion. Recessing the entrance into the building façade is an alternative option, if feasible.

The wind conditions presented in this report pertain to the proposed 776 Summer Street as detailed in the architectural design drawings listed in ***Appendix A***. Should there be any design changes that deviate from this list of drawings, the wind condition predictions presented may change. Therefore, if changes in the design are made, it is recommended that RWDI be contacted and requested to review their potential effects on wind conditions.

# FIGURES



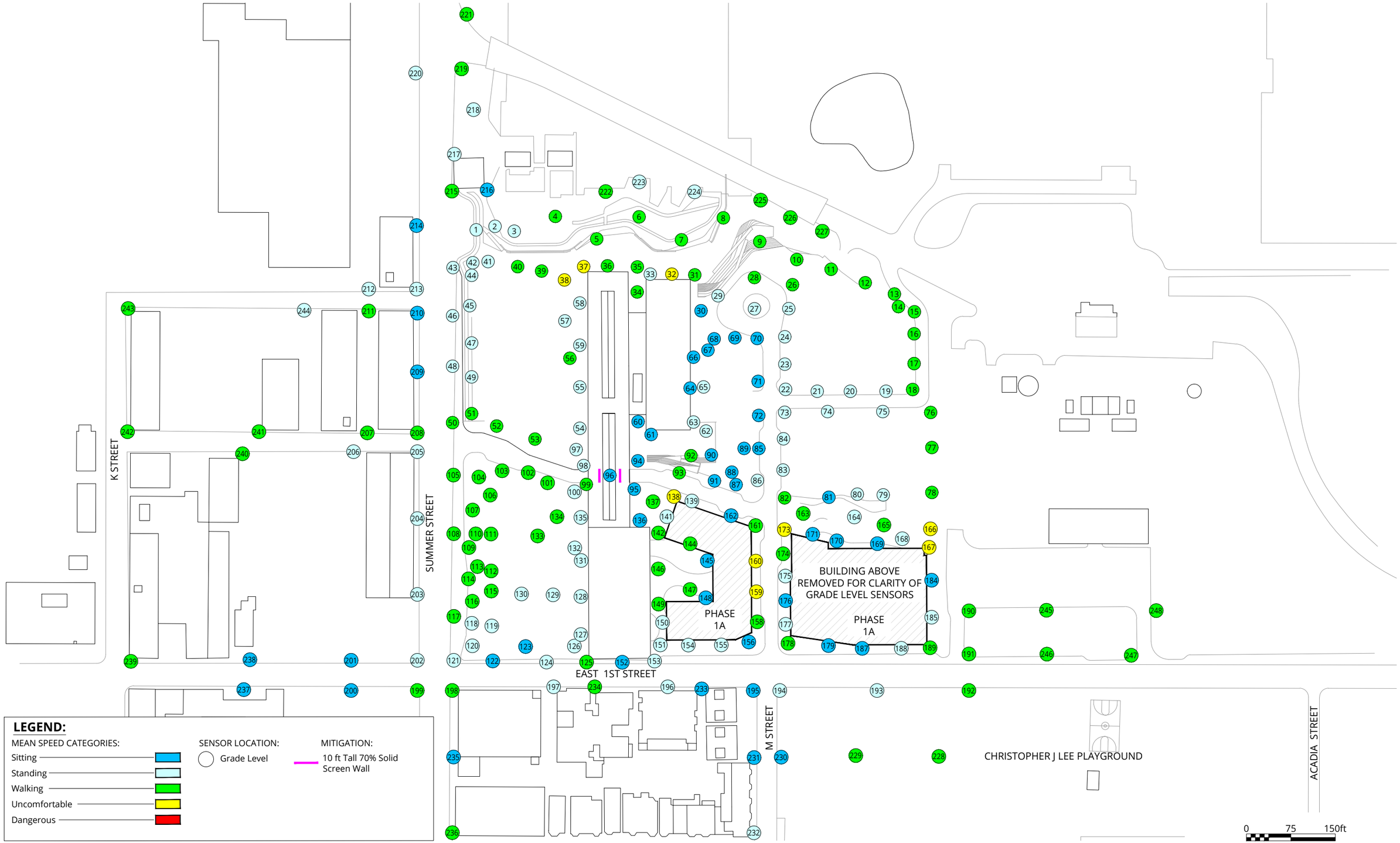

**Pedestrian Wind Conditions - Mean Speed**
No Build
Annual

776 Summer Street - Boston, MA

True North

Project #1802421

| | |
|---|---|
| Drawn by: MVP | Figure: 1a |
| Approx. Scale: | 1"=150' |
| Date Revised: | July 20, 2018 |




**LEGEND:**

MEAN SPEED CATEGORIES:
- Sitting
- Standing
- Walking
- Uncomfortable
- Dangerous

SENSOR LOCATION:
- Grade Level

MITIGATION:
- 10 ft Tall 70% Solid Screen Wall

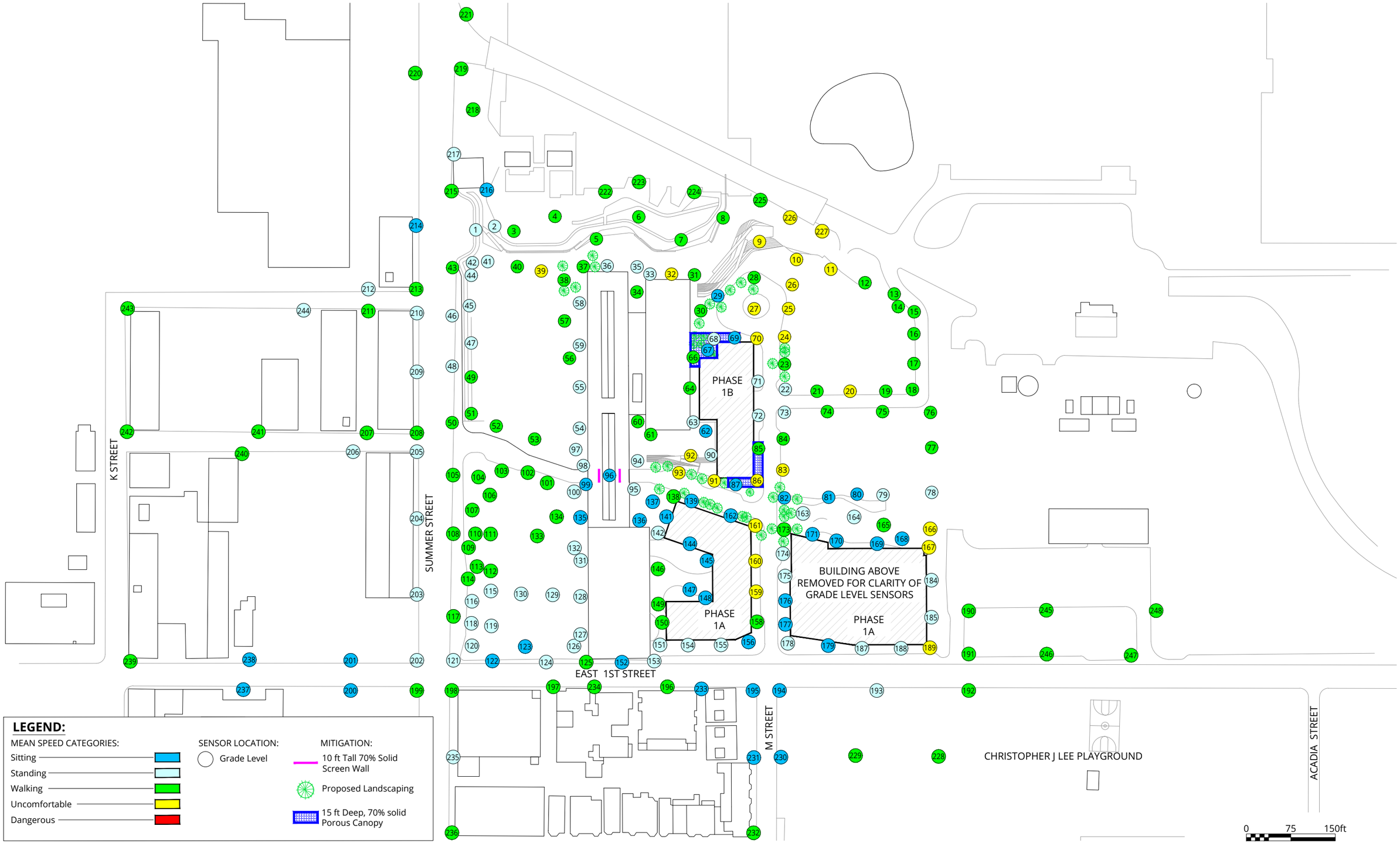
**Pedestrian Wind Conditions - Mean Speed**
Phase 1A
Annual

776 Summer Street - Boston, MA

True North

Project #1802421

| | |
|---|---|
| Drawn by: MVP | Figure: 1b |
| Approx. Scale: | 1"=150' |
| Date Revised: | July 31, 2018 |




**LEGEND:**

MEAN SPEED CATEGORIES:
- Sitting
- Standing
- Walking
- Uncomfortable
- Dangerous

SENSOR LOCATION:
- Grade Level

MITIGATION:
- 10 ft Tall 70% Solid Screen Wall
- Proposed Landscaping
- 15 ft Deep, 70% solid Porous Canopy

# Pedestrian Wind Conditions - Mean Speed

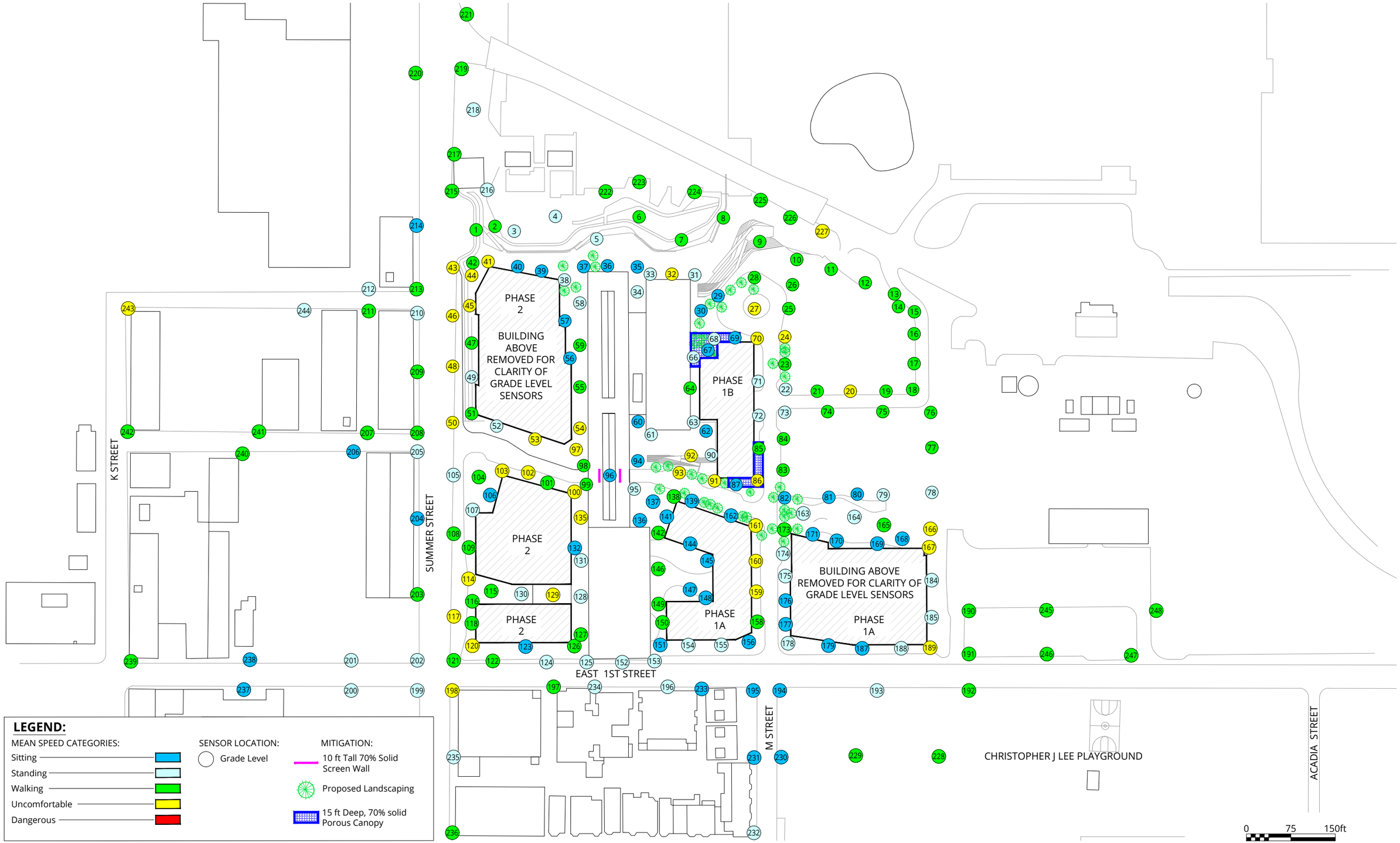
Phase 1B
Annual

776 Summer Street - Boston, MA

True North

Project #1802421

| | | | |
|---|---|---|---|
| Drawn by: | MVP | Figure: | 1c |
| Approx. Scale: | 1"=150' | | |
| Date Revised: | July 31, 2018 | | |

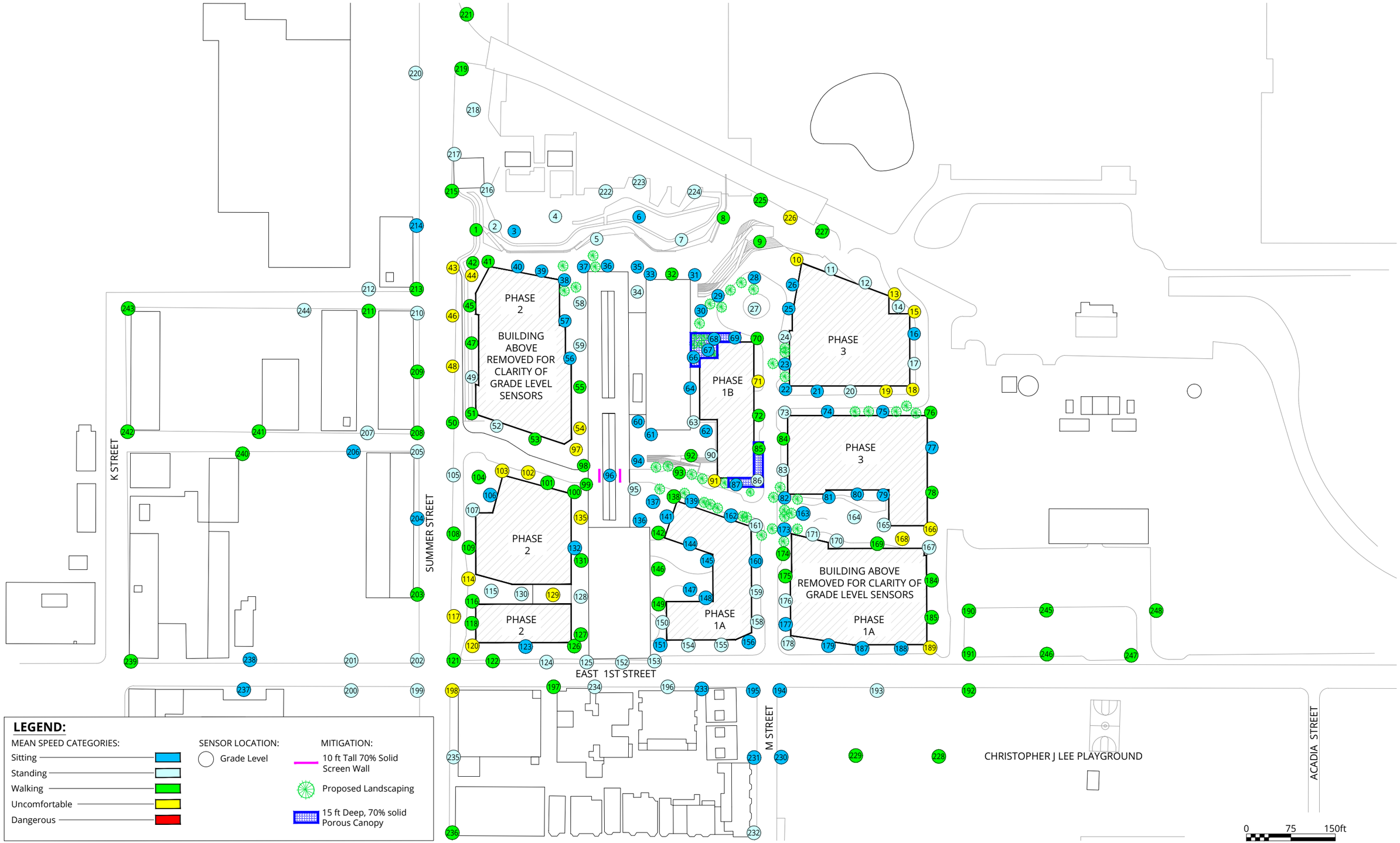



**Pedestrian Wind Conditions - Mean Speed**
Phase 2
Annual

776 Summer Street - Boston, MA

True North

| | | | |
|---|---|---|---|
| Drawn by: | MVP | Figure: | 1d |
| Approx. Scale: | 1"=150' | | |
| Project #1802421 | Date Revised: | July 31, 2018 | |




**LEGEND:**

MEAN SPEED CATEGORIES:
- Sitting
- Standing
- Walking
- Uncomfortable
- Dangerous

SENSOR LOCATION:
- Grade Level

MITIGATION:
- 10 ft Tall 70% Solid Screen Wall
- Proposed Landscaping
- 15 ft Deep, 70% solid Porous Canopy

# Pedestrian Wind Conditions - Mean Speed

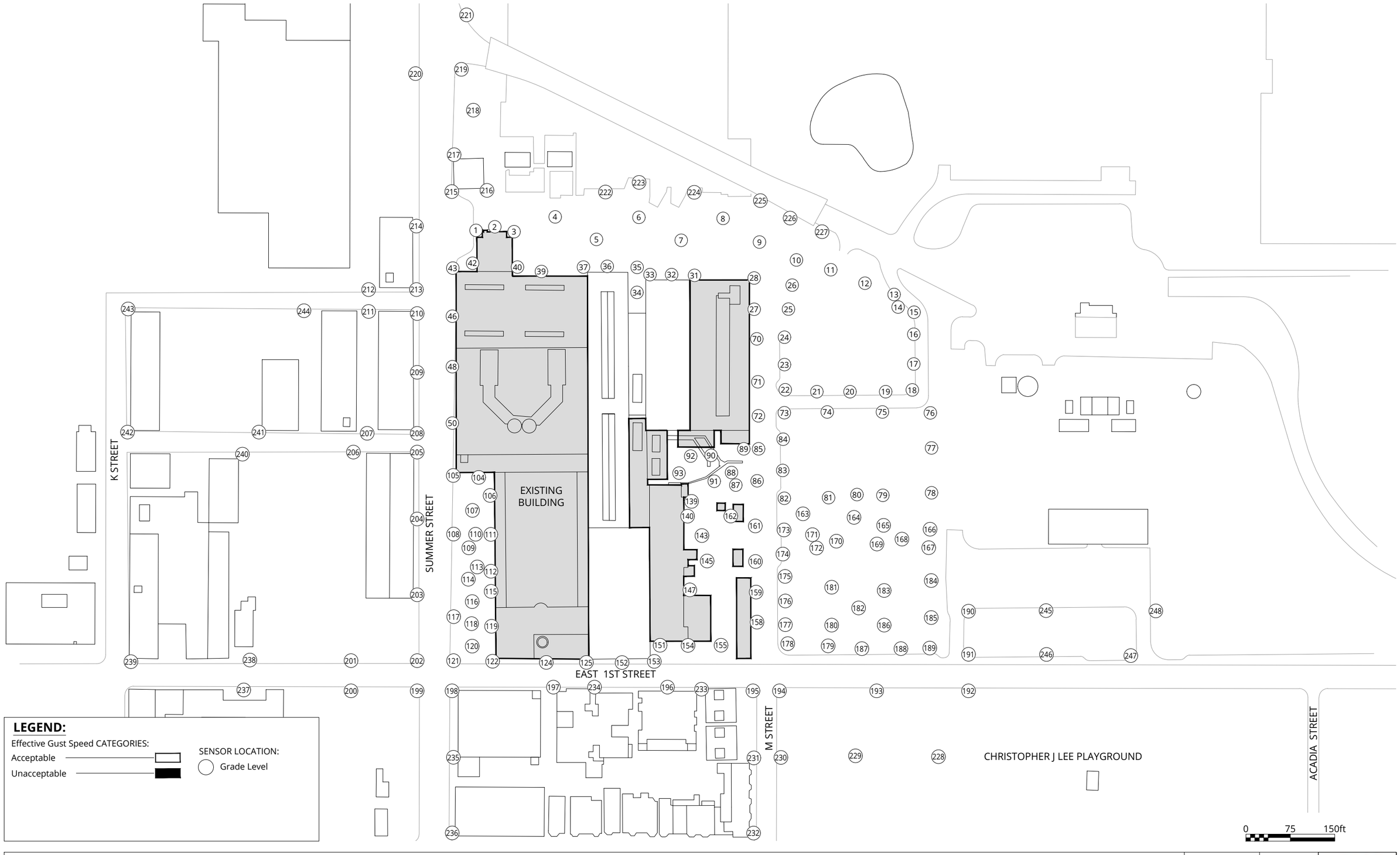
Phase 3
Annual

776 Summer Street - Boston, MA

True North

Project #1802421

| | | | |
|---|---|---|---|
| Drawn by: | MVP | Figure: | 1e |
| Approx. Scale: | 1"=150' | | |
| Date Revised: | July 31, 2018 | | |



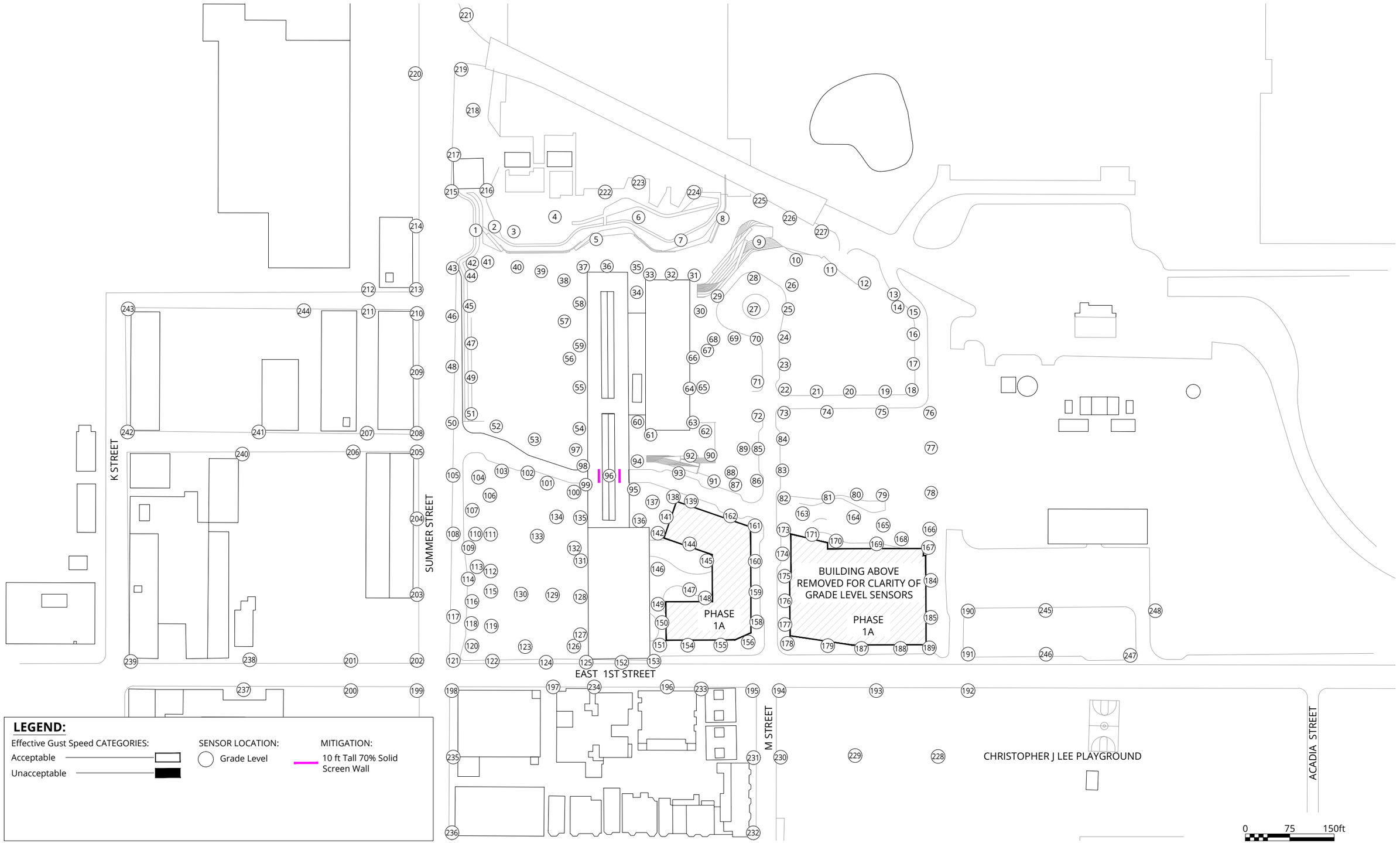

**Pedestrian Wind Conditions - Effective Gust Speed**
No Build
Annual

776 Summer Street - Boston, MA

True North

Project #1802421

| | |
|---|---|
| Drawn by: MVP | Figure: 2a |
| Approx. Scale: | 1"=150' |
| Date Revised: | July 20, 2018 |




**LEGEND:**

Effective Gust Speed CATEGORIES:
- Acceptable
- Unacceptable

SENSOR LOCATION:
- Grade Level

MITIGATION:
- 10 ft Tall 70% Solid Screen Wall

# Pedestrian Wind Conditions - Effective Gust Speed

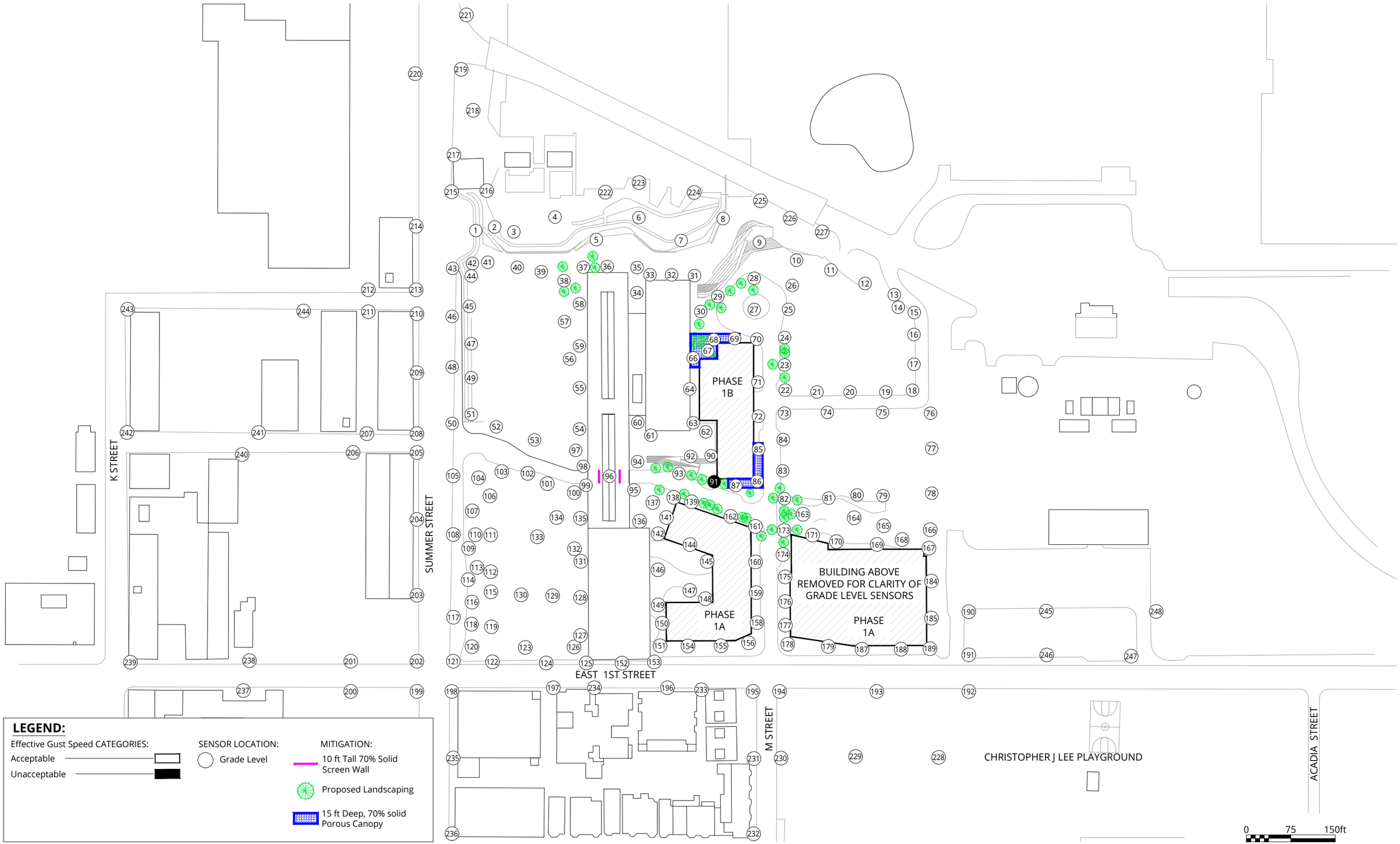
Phase 1A
Annual

776 Summer Street - Boston, MA

True North

Project #1802421

| | |
|---|---|
| Drawn by: MVP | Figure: 2b |
| Approx. Scale: | 1"=150' |
| Date Revised: | July 31, 2018 |




**LEGEND:**

Effective Gust Speed CATEGORIES:
- Acceptable
- Unacceptable

SENSOR LOCATION:
- Grade Level

MITIGATION:
- 10 ft Tall 70% Solid Screen Wall
- Proposed Landscaping
- 15 ft Deep, 70% solid Porous Canopy

# Pedestrian Wind Conditions - Effective Gust Speed

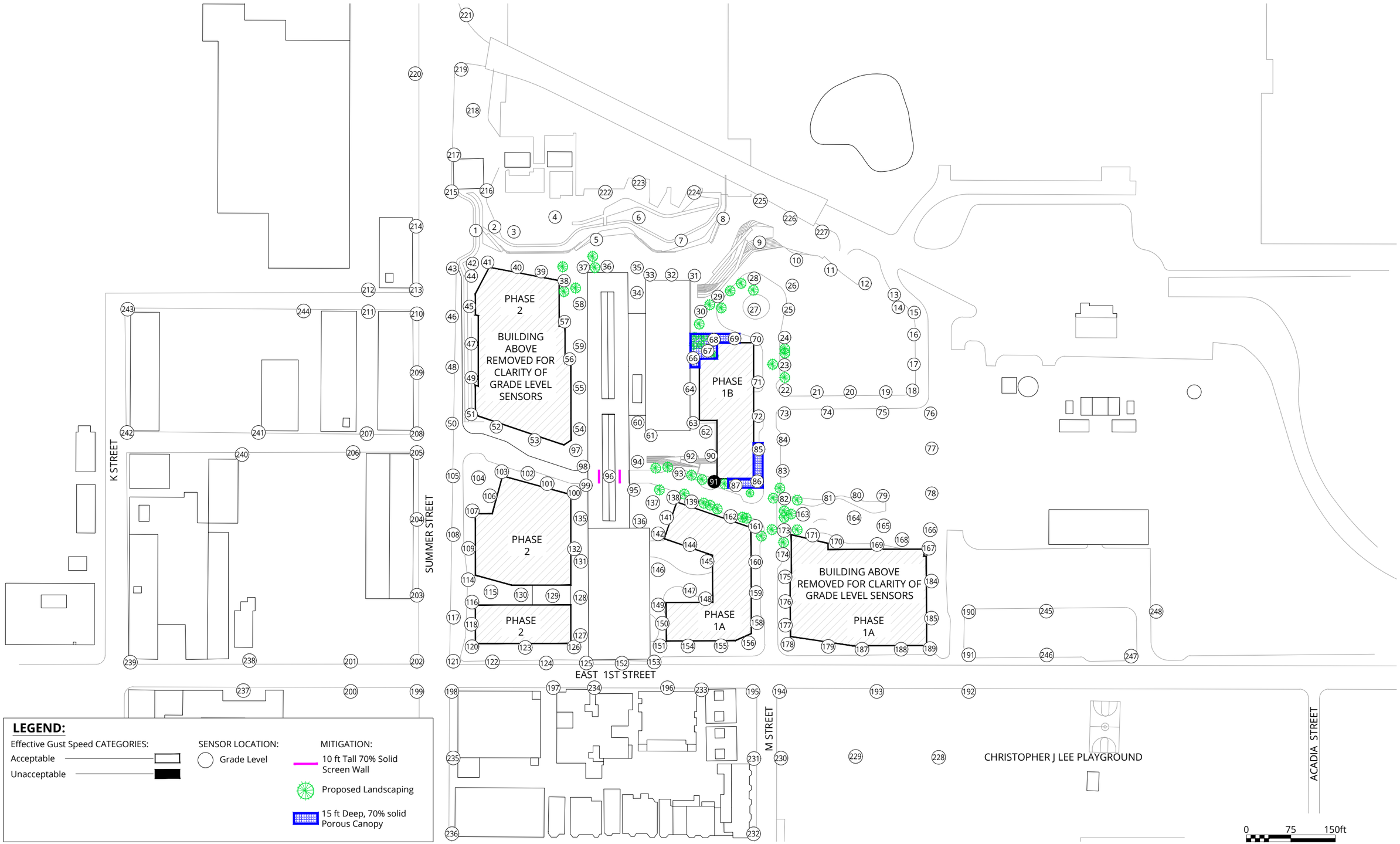
Phase 1B
Annual

776 Summer Street - Boston, MA

True North

Project #1802421

| | |
|---|---|
| Drawn by: MVP | Figure: 2c |
| Approx. Scale: | 1"=150' |
| Date Revised: | July 31, 2018 |




# Pedestrian Wind Conditions - Effective Gust Speed

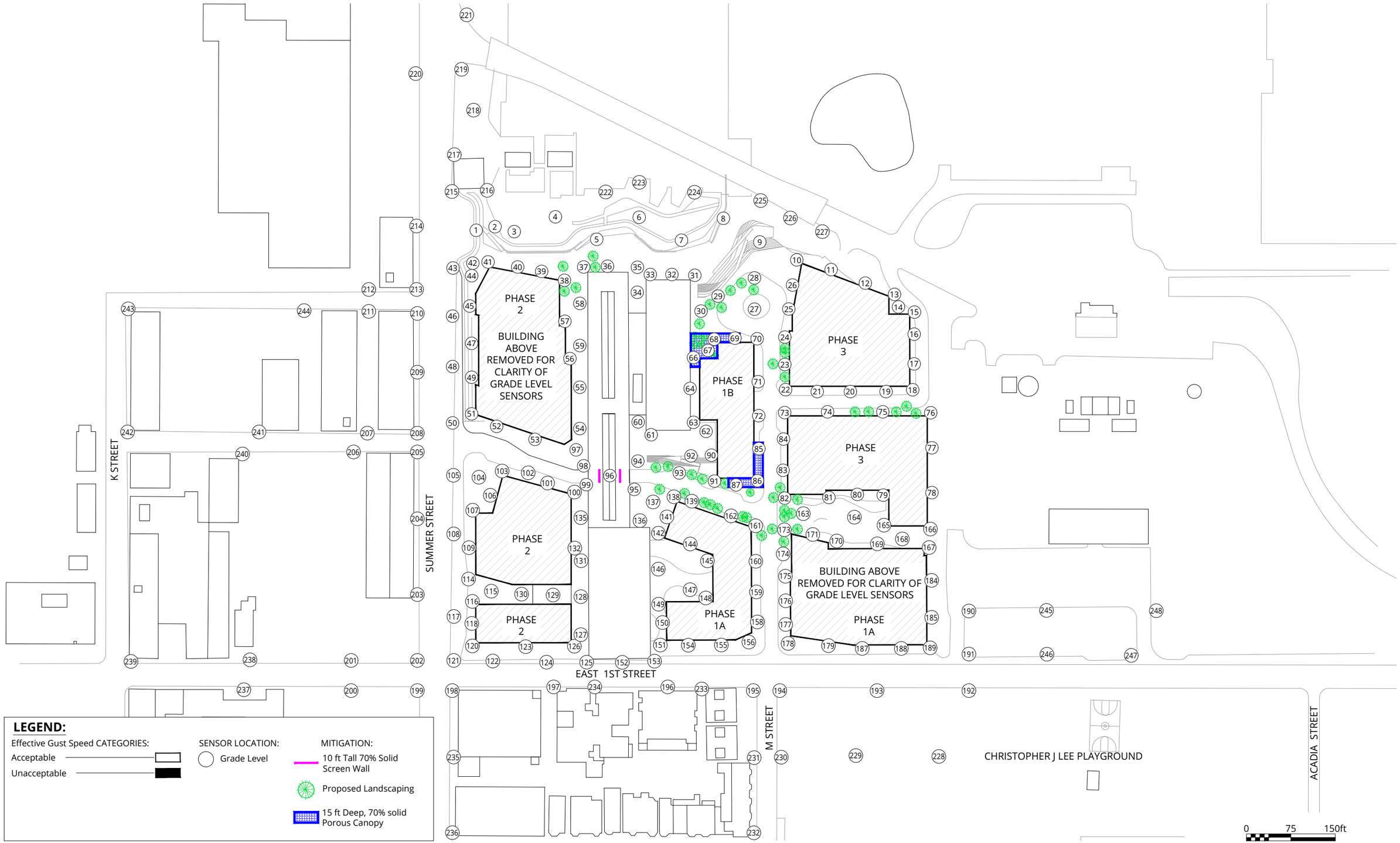
Phase 2
Annual

776 Summer Street - Boston, MA

True North

Project #1802421

| | |
|---|---|
| Drawn by: MVP | Figure: 2d |
| Approx. Scale: | 1"=150' |
| Date Revised: | July 31, 2018 |




**LEGEND:**

Effective Gust Speed CATEGORIES:
- Acceptable
- Unacceptable

SENSOR LOCATION:
- Grade Level

MITIGATION:
- 10 ft Tall 70% Solid Screen Wall
- Proposed Landscaping
- 15 ft Deep, 70% solid Porous Canopy

# Pedestrian Wind Conditions - Effective Gust Speed

Phase 3
Annual

776 Summer Street - Boston, MA

True North

Project #1802421

| | | | |
|---|---|---|---|
| Drawn by: | MVP | Figure: | 2e |
| Approx. Scale: | 1"=150' | | |
| Date Revised: | July 31, 2018 | | |

# TABLES

## Table 1: Mean Speed and Effective Gust Categories - Annual

| Location | Configuration | Season | Mean Wind Speed | | | Effective Gust Wind Speed | | |
|---|---|---|---|---|---|---|---|---|
| | | | Speed (mph) | % Change | Rating | Speed (mph) | % Change | Rating |
| **1** | A | Annual | 15 | | Standing | 24 | | Acceptable |
| | B | Annual | 14 | | Standing | 20 | -17% | Acceptable |
| | C | Annual | 15 | | Standing | 22 | | Acceptable |
| | D | Annual | 19 | 27% | Walking | 27 | 12% | Acceptable |
| | E | Annual | 18 | 20% | Walking | 25 | | Acceptable |
| **2** | A | Annual | 15 | | Standing | 22 | | Acceptable |
| | B | Annual | 13 | -13% | Standing | 20 | | Acceptable |
| | C | Annual | 14 | | Standing | 21 | | Acceptable |
| | D | Annual | 16 | | Walking | 23 | | Acceptable |
| | E | Annual | 14 | | Standing | 21 | | Acceptable |
| **3** | A | Annual | 16 | | Walking | 25 | | Acceptable |
| | B | Annual | 15 | | Standing | 21 | -16% | Acceptable |
| | C | Annual | 16 | | Walking | 23 | | Acceptable |
| | D | Annual | 14 | -12% | Standing | 21 | -16% | Acceptable |
| | E | Annual | 12 | -25% | Sitting | 19 | -24% | Acceptable |
| **4** | A | Annual | 15 | | Standing | 22 | | Acceptable |
| | B | Annual | 16 | | Walking | 22 | | Acceptable |
| | C | Annual | 17 | 13% | Walking | 23 | | Acceptable |
| | D | Annual | 15 | | Standing | 21 | | Acceptable |
| | E | Annual | 13 | -13% | Standing | 19 | -14% | Acceptable |
| **5** | A | Annual | 14 | | Standing | 21 | | Acceptable |
| | B | Annual | 18 | 29% | Walking | 25 | 19% | Acceptable |
| | C | Annual | 16 | 14% | Walking | 22 | | Acceptable |
| | D | Annual | 14 | | Standing | 21 | | Acceptable |
| | E | Annual | 13 | | Standing | 19 | | Acceptable |
| **6** | A | Annual | 13 | | Standing | 20 | | Acceptable |
| | B | Annual | 16 | 23% | Walking | 22 | | Acceptable |
| | C | Annual | 16 | 23% | Walking | 23 | 15% | Acceptable |
| | D | Annual | 16 | 23% | Walking | 22 | | Acceptable |
| | E | Annual | 12 | | Sitting | 18 | | Acceptable |
| **7** | A | Annual | 14 | | Standing | 20 | | Acceptable |
| | B | Annual | 17 | 21% | Walking | 24 | 20% | Acceptable |
| | C | Annual | 18 | 29% | Walking | 24 | 20% | Acceptable |
| | D | Annual | 18 | 29% | Walking | 24 | 20% | Acceptable |
| | E | Annual | 14 | | Standing | 20 | | Acceptable |
| **8** | A | Annual | 17 | | Walking | 22 | | Acceptable |
| | B | Annual | 18 | | Walking | 24 | | Acceptable |
| | C | Annual | 19 | 12% | Walking | 26 | 18% | Acceptable |
| | D | Annual | 18 | | Walking | 25 | 14% | Acceptable |
| | E | Annual | 17 | | Walking | 23 | | Acceptable |

**Table 1: Mean Speed and Effective Gust Categories - Annual**

| Location | Configuration | Season | Mean Wind Speed | | | Effective Gust Wind Speed | | |
|---|---|---|---|---|---|---|---|---|
| | | | Speed (mph) | % Change | Rating | Speed (mph) | % Change | Rating |
| **9** | A | Annual | 17 | | Walking | 23 | | Acceptable |
| | B | Annual | 17 | | Walking | 24 | | Acceptable |
| | C | Annual | 20 | 18% | Uncomfortable | 27 | 17% | Acceptable |
| | D | Annual | 19 | 12% | Walking | 26 | 13% | Acceptable |
| | E | Annual | 19 | 12% | Walking | 26 | 13% | Acceptable |
| **10** | A | Annual | 18 | | Walking | 24 | | Acceptable |
| | B | Annual | 17 | | Walking | 23 | | Acceptable |
| | C | Annual | 20 | 11% | Uncomfortable | 27 | 12% | Acceptable |
| | D | Annual | 19 | | Walking | 25 | | Acceptable |
| | E | Annual | 20 | 11% | Uncomfortable | 28 | 17% | Acceptable |
| **11** | A | Annual | 17 | | Walking | 23 | | Acceptable |
| | B | Annual | 17 | | Walking | 23 | | Acceptable |
| | C | Annual | 20 | 18% | Uncomfortable | 27 | 17% | Acceptable |
| | D | Annual | 19 | 12% | Walking | 25 | | Acceptable |
| | E | Annual | 13 | -24% | Standing | 20 | -13% | Acceptable |
| **12** | A | Annual | 17 | | Walking | 23 | | Acceptable |
| | B | Annual | 18 | | Walking | 23 | | Acceptable |
| | C | Annual | 19 | 12% | Walking | 27 | 17% | Acceptable |
| | D | Annual | 19 | 12% | Walking | 25 | | Acceptable |
| | E | Annual | 13 | -24% | Standing | 20 | -13% | Acceptable |
| **13** | A | Annual | 17 | | Walking | 22 | | Acceptable |
| | B | Annual | 17 | | Walking | 23 | | Acceptable |
| | C | Annual | 19 | 12% | Walking | 26 | 18% | Acceptable |
| | D | Annual | 18 | | Walking | 24 | | Acceptable |
| | E | Annual | 22 | 29% | Uncomfortable | 29 | 32% | Acceptable |
| **14** | A | Annual | 17 | | Walking | 23 | | Acceptable |
| | B | Annual | 18 | | Walking | 23 | | Acceptable |
| | C | Annual | 19 | 12% | Walking | 26 | 13% | Acceptable |
| | D | Annual | 19 | 12% | Walking | 25 | | Acceptable |
| | E | Annual | 14 | -18% | Standing | 21 | | Acceptable |
| **15** | A | Annual | 17 | | Walking | 23 | | Acceptable |
| | B | Annual | 17 | | Walking | 23 | | Acceptable |
| | C | Annual | 18 | | Walking | 26 | 13% | Acceptable |
| | D | Annual | 18 | | Walking | 24 | | Acceptable |
| | E | Annual | 23 | 35% | Uncomfortable | 30 | 30% | Acceptable |
| **16** | A | Annual | 17 | | Walking | 22 | | Acceptable |
| | B | Annual | 17 | | Walking | 23 | | Acceptable |
| | C | Annual | 18 | | Walking | 25 | 14% | Acceptable |
| | D | Annual | 18 | | Walking | 23 | | Acceptable |
| | E | Annual | 11 | -35% | Sitting | 18 | -18% | Acceptable |

**Table 1: Mean Speed and Effective Gust Categories - Annual**

| Location | Configuration | Season | Mean Wind Speed | | | Effective Gust Wind Speed | | |
|---|---|---|---|---|---|---|---|---|
| | | | Speed (mph) | % Change | Rating | Speed (mph) | % Change | Rating |
| **17** | A | Annual | 17 | | Walking | 22 | | Acceptable |
| | B | Annual | 17 | | Walking | 23 | | Acceptable |
| | C | Annual | 16 | | Walking | 24 | | Acceptable |
| | D | Annual | 16 | | Walking | 22 | | Acceptable |
| | E | Annual | 14 | -18% | Standing | 19 | -14% | Acceptable |
| **18** | A | Annual | 17 | | Walking | 23 | | Acceptable |
| | B | Annual | 16 | | Walking | 22 | | Acceptable |
| | C | Annual | 17 | | Walking | 25 | | Acceptable |
| | D | Annual | 17 | | Walking | 24 | | Acceptable |
| | E | Annual | 21 | 24% | Uncomfortable | 26 | 13% | Acceptable |
| **19** | A | Annual | 17 | | Walking | 22 | | Acceptable |
| | B | Annual | 15 | -12% | Standing | 22 | | Acceptable |
| | C | Annual | 18 | | Walking | 27 | 23% | Acceptable |
| | D | Annual | 18 | | Walking | 26 | 18% | Acceptable |
| | E | Annual | 21 | 24% | Uncomfortable | 28 | 27% | Acceptable |
| **20** | A | Annual | 16 | | Walking | 22 | | Acceptable |
| | B | Annual | 15 | | Standing | 21 | | Acceptable |
| | C | Annual | 20 | 25% | Uncomfortable | 30 | 36% | Acceptable |
| | D | Annual | 20 | 25% | Uncomfortable | 29 | 32% | Acceptable |
| | E | Annual | 14 | -12% | Standing | 21 | | Acceptable |
| **21** | A | Annual | 16 | | Walking | 21 | | Acceptable |
| | B | Annual | 14 | -12% | Standing | 20 | | Acceptable |
| | C | Annual | 18 | 12% | Walking | 26 | 24% | Acceptable |
| | D | Annual | 17 | | Walking | 25 | 19% | Acceptable |
| | E | Annual | 9 | -44% | Sitting | 15 | -29% | Acceptable |
| **22** | A | Annual | 15 | | Standing | 21 | | Acceptable |
| | B | Annual | 13 | -13% | Standing | 19 | | Acceptable |
| | C | Annual | 15 | | Standing | 21 | | Acceptable |
| | D | Annual | 14 | | Standing | 21 | | Acceptable |
| | E | Annual | 12 | -20% | Sitting | 18 | -14% | Acceptable |
| **23** | A | Annual | 13 | | Standing | 20 | | Acceptable |
| | B | Annual | 13 | | Standing | 19 | | Acceptable |
| | C | Annual | 16 | 23% | Walking | 22 | | Acceptable |
| | D | Annual | 16 | 23% | Walking | 23 | 15% | Acceptable |
| | E | Annual | 8 | -38% | Sitting | 13 | -35% | Acceptable |
| **24** | A | Annual | 13 | | Standing | 20 | | Acceptable |
| | B | Annual | 13 | | Standing | 19 | | Acceptable |
| | C | Annual | 22 | 69% | Uncomfortable | 31 | 55% | Acceptable |
| | D | Annual | 21 | 62% | Uncomfortable | 29 | 45% | Acceptable |
| | E | Annual | 14 | | Standing | 20 | | Acceptable |

**Table 1: Mean Speed and Effective Gust Categories - Annual**

| Location | Configuration | Season | Mean Wind Speed | | | Effective Gust Wind Speed | | |
|---|---|---|---|---|---|---|---|---|
| | | | Speed (mph) | % Change | Rating | Speed (mph) | % Change | Rating |
| **25** | A | Annual | 15 | | Standing | 22 | | Acceptable |
| | B | Annual | 15 | | Standing | 21 | | Acceptable |
| | C | Annual | 21 | 40% | Uncomfortable | 31 | 41% | Acceptable |
| | D | Annual | 18 | 20% | Walking | 25 | 14% | Acceptable |
| | E | Annual | 12 | -20% | Sitting | 19 | -14% | Acceptable |
| **26** | A | Annual | 20 | | Uncomfortable | 26 | | Acceptable |
| | B | Annual | 17 | -15% | Walking | 24 | | Acceptable |
| | C | Annual | 20 | | Uncomfortable | 29 | 12% | Acceptable |
| | D | Annual | 17 | -15% | Walking | 23 | -12% | Acceptable |
| | E | Annual | 10 | -50% | Sitting | 16 | -38% | Acceptable |
| **27** | A | Annual | 10 | | Sitting | 16 | | Acceptable |
| | B | Annual | 14 | 40% | Standing | 20 | 25% | Acceptable |
| | C | Annual | 23 | 130% | Uncomfortable | 31 | 100% | Acceptable |
| | D | Annual | 20 | 100% | Uncomfortable | 26 | 62% | Acceptable |
| | E | Annual | 15 | 50% | Standing | 23 | 44% | Acceptable |
| **28** | A | Annual | 20 | | Uncomfortable | 26 | | Acceptable |
| | B | Annual | 18 | | Walking | 25 | | Acceptable |
| | C | Annual | 16 | -20% | Walking | 24 | | Acceptable |
| | D | Annual | 17 | -15% | Walking | 24 | | Acceptable |
| | E | Annual | 10 | -50% | Sitting | 17 | -35% | Acceptable |
| **29** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 14 | -- | Standing | 21 | -- | Acceptable |
| | C | Annual | 11 | -- | Sitting | 17 | -- | Acceptable |
| | D | Annual | 11 | -- | Sitting | 17 | -- | Acceptable |
| | E | Annual | 9 | -- | Sitting | 15 | -- | Acceptable |
| **30** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 12 | -- | Sitting | 19 | -- | Acceptable |
| | C | Annual | 17 | -- | Walking | 24 | -- | Acceptable |
| | D | Annual | 12 | -- | Sitting | 18 | -- | Acceptable |
| | E | Annual | 11 | -- | Sitting | 16 | -- | Acceptable |
| **31** | A | Annual | 12 | | Sitting | 19 | | Acceptable |
| | B | Annual | 18 | 50% | Walking | 25 | 32% | Acceptable |
| | C | Annual | 17 | 42% | Walking | 24 | 26% | Acceptable |
| | D | Annual | 14 | 17% | Standing | 21 | 11% | Acceptable |
| | E | Annual | 10 | -17% | Sitting | 17 | -11% | Acceptable |
| **32** | A | Annual | 12 | | Sitting | 19 | | Acceptable |
| | B | Annual | 21 | 75% | Uncomfortable | 26 | 37% | Acceptable |
| | C | Annual | 22 | 83% | Uncomfortable | 28 | 47% | Acceptable |
| | D | Annual | 21 | 75% | Uncomfortable | 27 | 42% | Acceptable |
| | E | Annual | 19 | 58% | Walking | 25 | 32% | Acceptable |

**Table 1: Mean Speed and Effective Gust Categories - Annual**

| Location | Configuration | Season | Mean Wind Speed | | | Effective Gust Wind Speed | | |
|---|---|---|---|---|---|---|---|---|
| | | | Speed (mph) | % Change | Rating | Speed (mph) | % Change | Rating |
| **33** | A | Annual | 12 | | Sitting | 18 | | Acceptable |
| | B | Annual | 14 | 17% | Standing | 19 | | Acceptable |
| | C | Annual | 14 | 17% | Standing | 20 | 11% | Acceptable |
| | D | Annual | 13 | | Standing | 18 | | Acceptable |
| | E | Annual | 12 | | Sitting | 17 | | Acceptable |
| **34** | A | Annual | 12 | | Sitting | 18 | | Acceptable |
| | B | Annual | 16 | 33% | Walking | 23 | 28% | Acceptable |
| | C | Annual | 18 | 50% | Walking | 25 | 39% | Acceptable |
| | D | Annual | 15 | 25% | Standing | 22 | 22% | Acceptable |
| | E | Annual | 15 | 25% | Standing | 21 | 17% | Acceptable |
| **35** | A | Annual | 14 | | Standing | 21 | | Acceptable |
| | B | Annual | 16 | 14% | Walking | 23 | | Acceptable |
| | C | Annual | 14 | | Standing | 20 | | Acceptable |
| | D | Annual | 12 | -14% | Sitting | 18 | -14% | Acceptable |
| | E | Annual | 11 | -21% | Sitting | 17 | -19% | Acceptable |
| **36** | A | Annual | 13 | | Standing | 19 | | Acceptable |
| | B | Annual | 16 | 23% | Walking | 22 | 16% | Acceptable |
| | C | Annual | 14 | | Standing | 19 | | Acceptable |
| | D | Annual | 11 | -15% | Sitting | 16 | -16% | Acceptable |
| | E | Annual | 10 | -23% | Sitting | 15 | -21% | Acceptable |
| **37** | A | Annual | 12 | | Sitting | 17 | | Acceptable |
| | B | Annual | 23 | 92% | Uncomfortable | 30 | 76% | Acceptable |
| | C | Annual | 18 | 50% | Walking | 25 | 47% | Acceptable |
| | D | Annual | 10 | -17% | Sitting | 16 | | Acceptable |
| | E | Annual | 9 | -25% | Sitting | 15 | -12% | Acceptable |
| **38** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 24 | -- | Uncomfortable | 30 | -- | Acceptable |
| | C | Annual | 18 | -- | Walking | 25 | -- | Acceptable |
| | D | Annual | 13 | -- | Standing | 18 | -- | Acceptable |
| | E | Annual | 12 | -- | Sitting | 17 | -- | Acceptable |
| **39** | A | Annual | 11 | | Sitting | 16 | | Acceptable |
| | B | Annual | 19 | 73% | Walking | 25 | 56% | Acceptable |
| | C | Annual | 21 | 91% | Uncomfortable | 27 | 69% | Acceptable |
| | D | Annual | 8 | -27% | Sitting | 14 | -12% | Acceptable |
| | E | Annual | 8 | -27% | Sitting | 13 | -19% | Acceptable |
| **40** | A | Annual | 8 | | Sitting | 12 | | Acceptable |
| | B | Annual | 16 | 100% | Walking | 22 | 83% | Acceptable |
| | C | Annual | 18 | 125% | Walking | 24 | 100% | Acceptable |
| | D | Annual | 10 | 25% | Sitting | 15 | 25% | Acceptable |
| | E | Annual | 9 | 12% | Sitting | 14 | 17% | Acceptable |

**Table 1: Mean Speed and Effective Gust Categories - Annual**

| Location | Configuration | Season | Mean Wind Speed | | | Effective Gust Wind Speed | | |
|---|---|---|---|---|---|---|---|---|
| | | | Speed (mph) | % Change | Rating | Speed (mph) | % Change | Rating |
| **41** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 14 | -- | Standing | 20 | -- | Acceptable |
| | C | Annual | 15 | -- | Standing | 21 | -- | Acceptable |
| | D | Annual | 20 | -- | Uncomfortable | 26 | -- | Acceptable |
| | E | Annual | 18 | -- | Walking | 25 | -- | Acceptable |
| **42** | A | Annual | 10 | | Sitting | 15 | | Acceptable |
| | B | Annual | 14 | 40% | Standing | 20 | 33% | Acceptable |
| | C | Annual | 15 | 50% | Standing | 21 | 40% | Acceptable |
| | D | Annual | 18 | 80% | Walking | 24 | 60% | Acceptable |
| | E | Annual | 17 | 70% | Walking | 23 | 53% | Acceptable |
| **43** | A | Annual | 23 | | Uncomfortable | 31 | | Acceptable |
| | B | Annual | 14 | -39% | Standing | 21 | -32% | Acceptable |
| | C | Annual | 16 | -30% | Walking | 22 | -29% | Acceptable |
| | D | Annual | 21 | | Uncomfortable | 28 | | Acceptable |
| | E | Annual | 20 | -13% | Uncomfortable | 26 | -16% | Acceptable |
| **44** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 14 | -- | Standing | 21 | -- | Acceptable |
| | C | Annual | 15 | -- | Standing | 21 | -- | Acceptable |
| | D | Annual | 21 | -- | Uncomfortable | 28 | -- | Acceptable |
| | E | Annual | 20 | -- | Uncomfortable | 27 | -- | Acceptable |
| **45** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 13 | -- | Standing | 20 | -- | Acceptable |
| | C | Annual | 14 | -- | Standing | 21 | -- | Acceptable |
| | D | Annual | 20 | -- | Uncomfortable | 28 | -- | Acceptable |
| | E | Annual | 19 | -- | Walking | 27 | -- | Acceptable |
| **46** | A | Annual | 18 | | Walking | 24 | | Acceptable |
| | B | Annual | 14 | -22% | Standing | 21 | -12% | Acceptable |
| | C | Annual | 15 | -17% | Standing | 22 | | Acceptable |
| | D | Annual | 21 | 17% | Uncomfortable | 29 | 21% | Acceptable |
| | E | Annual | 20 | 11% | Uncomfortable | 27 | 12% | Acceptable |
| **47** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 13 | -- | Standing | 20 | -- | Acceptable |
| | C | Annual | 15 | -- | Standing | 21 | -- | Acceptable |
| | D | Annual | 16 | -- | Walking | 24 | -- | Acceptable |
| | E | Annual | 16 | -- | Walking | 23 | -- | Acceptable |
| **48** | A | Annual | 17 | | Walking | 23 | | Acceptable |
| | B | Annual | 13 | -24% | Standing | 20 | -13% | Acceptable |
| | C | Annual | 15 | -12% | Standing | 21 | | Acceptable |
| | D | Annual | 22 | 29% | Uncomfortable | 30 | 30% | Acceptable |
| | E | Annual | 21 | 24% | Uncomfortable | 29 | 26% | Acceptable |

**Table 1: Mean Speed and Effective Gust Categories - Annual**

| Location | Configuration | Season | Mean Wind Speed | | | Effective Gust Wind Speed | | |
|---|---|---|---|---|---|---|---|---|
| | | | Speed (mph) | % Change | Rating | Speed (mph) | % Change | Rating |
| **49** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 15 | -- | Standing | 21 | -- | Acceptable |
| | C | Annual | 16 | -- | Walking | 22 | -- | Acceptable |
| | D | Annual | 15 | -- | Standing | 22 | -- | Acceptable |
| | E | Annual | 14 | -- | Standing | 21 | -- | Acceptable |
| **50** | A | Annual | 15 | | Standing | 22 | | Acceptable |
| | B | Annual | 17 | 13% | Walking | 23 | | Acceptable |
| | C | Annual | 17 | 13% | Walking | 24 | | Acceptable |
| | D | Annual | 20 | 33% | Uncomfortable | 29 | 32% | Acceptable |
| | E | Annual | 19 | 27% | Walking | 27 | 23% | Acceptable |
| **51** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 17 | -- | Walking | 23 | -- | Acceptable |
| | C | Annual | 17 | -- | Walking | 24 | -- | Acceptable |
| | D | Annual | 16 | -- | Walking | 25 | -- | Acceptable |
| | E | Annual | 16 | -- | Walking | 24 | -- | Acceptable |
| **52** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 17 | -- | Walking | 23 | -- | Acceptable |
| | C | Annual | 18 | -- | Walking | 24 | -- | Acceptable |
| | D | Annual | 15 | -- | Standing | 21 | -- | Acceptable |
| | E | Annual | 15 | -- | Standing | 20 | -- | Acceptable |
| **53** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 18 | -- | Walking | 24 | -- | Acceptable |
| | C | Annual | 18 | -- | Walking | 25 | -- | Acceptable |
| | D | Annual | 20 | -- | Uncomfortable | 26 | -- | Acceptable |
| | E | Annual | 19 | -- | Walking | 25 | -- | Acceptable |
| **54** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 14 | -- | Standing | 23 | -- | Acceptable |
| | C | Annual | 14 | -- | Standing | 22 | -- | Acceptable |
| | D | Annual | 22 | -- | Uncomfortable | 31 | -- | Acceptable |
| | E | Annual | 21 | -- | Uncomfortable | 29 | -- | Acceptable |
| **55** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 14 | -- | Standing | 23 | -- | Acceptable |
| | C | Annual | 13 | -- | Standing | 22 | -- | Acceptable |
| | D | Annual | 18 | -- | Walking | 25 | -- | Acceptable |
| | E | Annual | 17 | -- | Walking | 24 | -- | Acceptable |
| **56** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 16 | -- | Walking | 24 | -- | Acceptable |
| | C | Annual | 16 | -- | Walking | 24 | -- | Acceptable |
| | D | Annual | 10 | -- | Sitting | 15 | -- | Acceptable |
| | E | Annual | 9 | -- | Sitting | 14 | -- | Acceptable |

**Table 1: Mean Speed and Effective Gust Categories - Annual**

| Location | Configuration | Season | Mean Wind Speed | | | Effective Gust Wind Speed | | |
|---|---|---|---|---|---|---|---|---|
| | | | Speed (mph) | % Change | Rating | Speed (mph) | % Change | Rating |
| **57** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 15 | -- | Standing | 23 | -- | Acceptable |
| | C | Annual | 16 | -- | Walking | 23 | -- | Acceptable |
| | D | Annual | 12 | -- | Sitting | 18 | -- | Acceptable |
| | E | Annual | 11 | -- | Sitting | 16 | -- | Acceptable |
| **58** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 15 | -- | Standing | 24 | -- | Acceptable |
| | C | Annual | 15 | -- | Standing | 23 | -- | Acceptable |
| | D | Annual | 15 | -- | Standing | 22 | -- | Acceptable |
| | E | Annual | 14 | -- | Standing | 20 | -- | Acceptable |
| **59** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 14 | -- | Standing | 23 | -- | Acceptable |
| | C | Annual | 14 | -- | Standing | 22 | -- | Acceptable |
| | D | Annual | 17 | -- | Walking | 24 | -- | Acceptable |
| | E | Annual | 15 | -- | Standing | 22 | -- | Acceptable |
| **60** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 9 | -- | Sitting | 14 | -- | Acceptable |
| | C | Annual | 16 | -- | Walking | 24 | -- | Acceptable |
| | D | Annual | 11 | -- | Sitting | 17 | -- | Acceptable |
| | E | Annual | 10 | -- | Sitting | 16 | -- | Acceptable |
| **61** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 11 | -- | Sitting | 17 | -- | Acceptable |
| | C | Annual | 17 | -- | Walking | 26 | -- | Acceptable |
| | D | Annual | 13 | -- | Standing | 19 | -- | Acceptable |
| | E | Annual | 10 | -- | Sitting | 15 | -- | Acceptable |
| **62** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 14 | -- | Standing | 19 | -- | Acceptable |
| | C | Annual | 9 | -- | Sitting | 14 | -- | Acceptable |
| | D | Annual | 10 | -- | Sitting | 15 | -- | Acceptable |
| | E | Annual | 10 | -- | Sitting | 15 | -- | Acceptable |
| **63** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 15 | -- | Standing | 21 | -- | Acceptable |
| | C | Annual | 14 | -- | Standing | 21 | -- | Acceptable |
| | D | Annual | 14 | -- | Standing | 19 | -- | Acceptable |
| | E | Annual | 14 | -- | Standing | 18 | -- | Acceptable |
| **64** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 10 | -- | Sitting | 16 | -- | Acceptable |
| | C | Annual | 18 | -- | Walking | 23 | -- | Acceptable |
| | D | Annual | 16 | -- | Walking | 21 | -- | Acceptable |
| | E | Annual | 11 | -- | Sitting | 17 | -- | Acceptable |

**Table 1: Mean Speed and Effective Gust Categories - Annual**

| Location | Configuration | Season | Mean Wind Speed | | | Effective Gust Wind Speed | | |
|---|---|---|---|---|---|---|---|---|
| | | | Speed (mph) | % Change | Rating | Speed (mph) | % Change | Rating |
| **65** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 13 | -- | Standing | 19 | -- | Acceptable |
| | C | Annual | -- | -- | -- | -- | -- | -- |
| | D | Annual | -- | -- | -- | -- | -- | -- |
| | E | Annual | -- | -- | -- | -- | -- | -- |
| **66** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 10 | -- | Sitting | 16 | -- | Acceptable |
| | C | Annual | 17 | -- | Walking | 22 | -- | Acceptable |
| | D | Annual | 13 | -- | Standing | 18 | -- | Acceptable |
| | E | Annual | 11 | -- | Sitting | 15 | -- | Acceptable |
| **67** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 12 | -- | Sitting | 19 | -- | Acceptable |
| | C | Annual | 11 | -- | Sitting | 16 | -- | Acceptable |
| | D | Annual | 11 | -- | Sitting | 16 | -- | Acceptable |
| | E | Annual | 8 | -- | Sitting | 13 | -- | Acceptable |
| **68** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 11 | -- | Sitting | 17 | -- | Acceptable |
| | C | Annual | 15 | -- | Standing | 19 | -- | Acceptable |
| | D | Annual | 15 | -- | Standing | 19 | -- | Acceptable |
| | E | Annual | 12 | -- | Sitting | 16 | -- | Acceptable |
| **69** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 12 | -- | Sitting | 17 | -- | Acceptable |
| | C | Annual | 12 | -- | Sitting | 18 | -- | Acceptable |
| | D | Annual | 11 | -- | Sitting | 17 | -- | Acceptable |
| | E | Annual | 9 | -- | Sitting | 15 | -- | Acceptable |
| **70** | A | Annual | 11 | | Sitting | 17 | | Acceptable |
| | B | Annual | 12 | | Sitting | 18 | | Acceptable |
| | C | Annual | 20 | 82% | Uncomfortable | 27 | 59% | Acceptable |
| | D | Annual | 20 | 82% | Uncomfortable | 26 | 53% | Acceptable |
| | E | Annual | 18 | 64% | Walking | 25 | 47% | Acceptable |
| **71** | A | Annual | 12 | | Sitting | 18 | | Acceptable |
| | B | Annual | 12 | | Sitting | 18 | | Acceptable |
| | C | Annual | 14 | 17% | Standing | 20 | 11% | Acceptable |
| | D | Annual | 14 | 17% | Standing | 21 | 17% | Acceptable |
| | E | Annual | 20 | 67% | Uncomfortable | 26 | 44% | Acceptable |
| **72** | A | Annual | 16 | | Walking | 21 | | Acceptable |
| | B | Annual | 12 | -25% | Sitting | 18 | -14% | Acceptable |
| | C | Annual | 14 | -12% | Standing | 20 | | Acceptable |
| | D | Annual | 14 | -12% | Standing | 19 | | Acceptable |
| | E | Annual | 17 | | Walking | 22 | | Acceptable |

**Table 1: Mean Speed and Effective Gust Categories - Annual**

| Location | Configuration | Season | Mean Wind Speed | | | Effective Gust Wind Speed | | |
|---|---|---|---|---|---|---|---|---|
| | | | Speed (mph) | % Change | Rating | Speed (mph) | % Change | Rating |
| **73** | A | Annual | 17 | | Walking | 23 | | Acceptable |
| | B | Annual | 13 | -24% | Standing | 19 | -17% | Acceptable |
| | C | Annual | 15 | -12% | Standing | 23 | | Acceptable |
| | D | Annual | 15 | -12% | Standing | 22 | | Acceptable |
| | E | Annual | 14 | -18% | Standing | 22 | | Acceptable |
| **74** | A | Annual | 16 | | Walking | 22 | | Acceptable |
| | B | Annual | 14 | -12% | Standing | 20 | | Acceptable |
| | C | Annual | 17 | | Walking | 25 | 14% | Acceptable |
| | D | Annual | 17 | | Walking | 25 | 14% | Acceptable |
| | E | Annual | 11 | -31% | Sitting | 19 | -14% | Acceptable |
| **75** | A | Annual | 17 | | Walking | 22 | | Acceptable |
| | B | Annual | 15 | -12% | Standing | 21 | | Acceptable |
| | C | Annual | 18 | | Walking | 27 | 23% | Acceptable |
| | D | Annual | 18 | | Walking | 27 | 23% | Acceptable |
| | E | Annual | 5 | -71% | Sitting | 7 | -68% | Acceptable |
| **76** | A | Annual | 17 | | Walking | 22 | | Acceptable |
| | B | Annual | 16 | | Walking | 22 | | Acceptable |
| | C | Annual | 16 | | Walking | 24 | | Acceptable |
| | D | Annual | 16 | | Walking | 24 | | Acceptable |
| | E | Annual | 17 | | Walking | 24 | | Acceptable |
| **77** | A | Annual | 17 | | Walking | 23 | | Acceptable |
| | B | Annual | 16 | | Walking | 23 | | Acceptable |
| | C | Annual | 16 | | Walking | 25 | | Acceptable |
| | D | Annual | 16 | | Walking | 25 | | Acceptable |
| | E | Annual | 12 | -29% | Sitting | 18 | -22% | Acceptable |
| **78** | A | Annual | 16 | | Walking | 22 | | Acceptable |
| | B | Annual | 17 | | Walking | 24 | | Acceptable |
| | C | Annual | 15 | | Standing | 23 | | Acceptable |
| | D | Annual | 15 | | Standing | 23 | | Acceptable |
| | E | Annual | 16 | | Walking | 21 | | Acceptable |
| **79** | A | Annual | 17 | | Walking | 22 | | Acceptable |
| | B | Annual | 15 | -12% | Standing | 22 | | Acceptable |
| | C | Annual | 13 | -24% | Standing | 19 | -14% | Acceptable |
| | D | Annual | 13 | -24% | Standing | 20 | | Acceptable |
| | E | Annual | 7 | -59% | Sitting | 11 | -50% | Acceptable |
| **80** | A | Annual | 16 | | Walking | 22 | | Acceptable |
| | B | Annual | 13 | -19% | Standing | 20 | | Acceptable |
| | C | Annual | 11 | -31% | Sitting | 17 | -23% | Acceptable |
| | D | Annual | 11 | -31% | Sitting | 17 | -23% | Acceptable |
| | E | Annual | 12 | -25% | Sitting | 19 | -14% | Acceptable |

**Table 1: Mean Speed and Effective Gust Categories - Annual**

| Location | Configuration | Season | Mean Wind Speed | | | Effective Gust Wind Speed | | |
|---|---|---|---|---|---|---|---|---|
| | | | Speed (mph) | % Change | Rating | Speed (mph) | % Change | Rating |
| **81** | A | Annual | 16 | | Walking | 21 | | Acceptable |
| | B | Annual | 12 | -25% | Sitting | 19 | | Acceptable |
| | C | Annual | 12 | -25% | Sitting | 18 | -14% | Acceptable |
| | D | Annual | 11 | -31% | Sitting | 17 | -19% | Acceptable |
| | E | Annual | 9 | -44% | Sitting | 14 | -33% | Acceptable |
| **82** | A | Annual | 15 | | Standing | 20 | | Acceptable |
| | B | Annual | 16 | | Walking | 23 | 15% | Acceptable |
| | C | Annual | 12 | -20% | Sitting | 17 | -15% | Acceptable |
| | D | Annual | 12 | -20% | Sitting | 17 | -15% | Acceptable |
| | E | Annual | 9 | -40% | Sitting | 14 | -30% | Acceptable |
| **83** | A | Annual | 16 | | Walking | 21 | | Acceptable |
| | B | Annual | 14 | -12% | Standing | 21 | | Acceptable |
| | C | Annual | 20 | 25% | Uncomfortable | 29 | 38% | Acceptable |
| | D | Annual | 19 | 19% | Walking | 26 | 24% | Acceptable |
| | E | Annual | 13 | -19% | Standing | 20 | | Acceptable |
| **84** | A | Annual | 17 | | Walking | 23 | | Acceptable |
| | B | Annual | 13 | -24% | Standing | 20 | -13% | Acceptable |
| | C | Annual | 17 | | Walking | 25 | | Acceptable |
| | D | Annual | 16 | | Walking | 23 | | Acceptable |
| | E | Annual | 17 | | Walking | 26 | 13% | Acceptable |
| **85** | A | Annual | 18 | | Walking | 23 | | Acceptable |
| | B | Annual | 12 | -33% | Sitting | 19 | -17% | Acceptable |
| | C | Annual | 17 | | Walking | 22 | | Acceptable |
| | D | Annual | 16 | -11% | Walking | 22 | | Acceptable |
| | E | Annual | 16 | -11% | Walking | 21 | | Acceptable |
| **86** | A | Annual | 15 | | Standing | 20 | | Acceptable |
| | B | Annual | 14 | | Standing | 21 | | Acceptable |
| | C | Annual | 25 | 67% | Uncomfortable | 30 | 50% | Acceptable |
| | D | Annual | 24 | 60% | Uncomfortable | 29 | 45% | Acceptable |
| | E | Annual | 14 | | Standing | 19 | | Acceptable |
| **87** | A | Annual | 10 | | Sitting | 16 | | Acceptable |
| | B | Annual | 10 | | Sitting | 16 | | Acceptable |
| | C | Annual | 8 | -20% | Sitting | 12 | -25% | Acceptable |
| | D | Annual | 7 | -30% | Sitting | 12 | -25% | Acceptable |
| | E | Annual | 8 | -20% | Sitting | 13 | -19% | Acceptable |
| **88** | A | Annual | 10 | | Sitting | 17 | | Acceptable |
| | B | Annual | 10 | | Sitting | 15 | -12% | Acceptable |
| | C | Annual | -- | -- | -- | -- | -- | -- |
| | D | Annual | -- | -- | -- | -- | -- | -- |
| | E | Annual | -- | -- | -- | -- | -- | -- |

**Table 1: Mean Speed and Effective Gust Categories - Annual**

| Location | Configuration | Season | Mean Wind Speed | | | Effective Gust Wind Speed | | |
|---|---|---|---|---|---|---|---|---|
| | | | Speed (mph) | % Change | Rating | Speed (mph) | % Change | Rating |
| **89** | A | Annual | 10 | | Sitting | 16 | | Acceptable |
| | B | Annual | 11 | | Sitting | 18 | 12% | Acceptable |
| | C | Annual | -- | -- | -- | -- | -- | -- |
| | D | Annual | -- | -- | -- | -- | -- | -- |
| | E | Annual | -- | -- | -- | -- | -- | -- |
| **90** | A | Annual | 11 | | Sitting | 17 | | Acceptable |
| | B | Annual | 12 | | Sitting | 17 | | Acceptable |
| | C | Annual | 13 | 18% | Standing | 19 | 12% | Acceptable |
| | D | Annual | 14 | 27% | Standing | 20 | 18% | Acceptable |
| | E | Annual | 13 | 18% | Standing | 19 | 12% | Acceptable |
| **91** | A | Annual | 8 | | Sitting | 14 | | Acceptable |
| | B | Annual | 10 | 25% | Sitting | 16 | 14% | Acceptable |
| | C | Annual | 27 | 238% | Uncomfortable | 35 | 150% | Unacceptable |
| | D | Annual | 25 | 212% | Uncomfortable | 33 | 136% | Unacceptable |
| | E | Annual | 22 | 175% | Uncomfortable | 29 | 107% | Acceptable |
| **92** | A | Annual | 10 | | Sitting | 15 | | Acceptable |
| | B | Annual | 16 | 60% | Walking | 21 | 40% | Acceptable |
| | C | Annual | 20 | 100% | Uncomfortable | 28 | 87% | Acceptable |
| | D | Annual | 21 | 110% | Uncomfortable | 28 | 87% | Acceptable |
| | E | Annual | 19 | 90% | Walking | 26 | 73% | Acceptable |
| **93** | A | Annual | 10 | | Sitting | 15 | | Acceptable |
| | B | Annual | 16 | 60% | Walking | 21 | 40% | Acceptable |
| | C | Annual | 22 | 120% | Uncomfortable | 30 | 100% | Acceptable |
| | D | Annual | 21 | 110% | Uncomfortable | 28 | 87% | Acceptable |
| | E | Annual | 18 | 80% | Walking | 25 | 67% | Acceptable |
| **94** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 10 | -- | Sitting | 16 | -- | Acceptable |
| | C | Annual | 13 | -- | Standing | 19 | -- | Acceptable |
| | D | Annual | 12 | -- | Sitting | 18 | -- | Acceptable |
| | E | Annual | 11 | -- | Sitting | 16 | -- | Acceptable |
| **95** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 12 | -- | Sitting | 18 | -- | Acceptable |
| | C | Annual | 13 | -- | Standing | 20 | -- | Acceptable |
| | D | Annual | 15 | -- | Standing | 22 | -- | Acceptable |
| | E | Annual | 14 | -- | Standing | 21 | -- | Acceptable |
| **96** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 6 | -- | Sitting | 9 | -- | Acceptable |
| | C | Annual | 4 | -- | Sitting | 7 | -- | Acceptable |
| | D | Annual | 5 | -- | Sitting | 8 | -- | Acceptable |
| | E | Annual | 5 | -- | Sitting | 7 | -- | Acceptable |

**Table 1: Mean Speed and Effective Gust Categories - Annual**

| Location | Configuration | Season | Mean Wind Speed | | | Effective Gust Wind Speed | | |
|---|---|---|---|---|---|---|---|---|
| | | | Speed (mph) | % Change | Rating | Speed (mph) | % Change | Rating |
| **97** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 14 | -- | Standing | 23 | -- | Acceptable |
| | C | Annual | 14 | -- | Standing | 22 | -- | Acceptable |
| | D | Annual | 21 | -- | Uncomfortable | 27 | -- | Acceptable |
| | E | Annual | 20 | -- | Uncomfortable | 27 | -- | Acceptable |
| **98** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 15 | -- | Standing | 25 | -- | Acceptable |
| | C | Annual | 13 | -- | Standing | 20 | -- | Acceptable |
| | D | Annual | 18 | -- | Walking | 24 | -- | Acceptable |
| | E | Annual | 18 | -- | Walking | 24 | -- | Acceptable |
| **99** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 17 | -- | Walking | 23 | -- | Acceptable |
| | C | Annual | 12 | -- | Sitting | 20 | -- | Acceptable |
| | D | Annual | 17 | -- | Walking | 23 | -- | Acceptable |
| | E | Annual | 16 | -- | Walking | 22 | -- | Acceptable |
| **100** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 15 | -- | Standing | 23 | -- | Acceptable |
| | C | Annual | 14 | -- | Standing | 23 | -- | Acceptable |
| | D | Annual | 20 | -- | Uncomfortable | 27 | -- | Acceptable |
| | E | Annual | 19 | -- | Walking | 26 | -- | Acceptable |
| **101** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 17 | -- | Walking | 24 | -- | Acceptable |
| | C | Annual | 18 | -- | Walking | 25 | -- | Acceptable |
| | D | Annual | 19 | -- | Walking | 26 | -- | Acceptable |
| | E | Annual | 19 | -- | Walking | 26 | -- | Acceptable |
| **102** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 19 | -- | Walking | 25 | -- | Acceptable |
| | C | Annual | 19 | -- | Walking | 25 | -- | Acceptable |
| | D | Annual | 21 | -- | Uncomfortable | 31 | -- | Acceptable |
| | E | Annual | 21 | -- | Uncomfortable | 30 | -- | Acceptable |
| **103** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 18 | -- | Walking | 24 | -- | Acceptable |
| | C | Annual | 18 | -- | Walking | 25 | -- | Acceptable |
| | D | Annual | 22 | -- | Uncomfortable | 30 | -- | Acceptable |
| | E | Annual | 21 | -- | Uncomfortable | 29 | -- | Acceptable |
| **104** | A | Annual | 16 | | Walking | 24 | | Acceptable |
| | B | Annual | 17 | | Walking | 23 | | Acceptable |
| | C | Annual | 17 | | Walking | 24 | | Acceptable |
| | D | Annual | 18 | 12% | Walking | 28 | 17% | Acceptable |
| | E | Annual | 18 | 12% | Walking | 27 | 12% | Acceptable |

**Table 1: Mean Speed and Effective Gust Categories - Annual**

| Location | Configuration | Season | Mean Wind Speed | | | Effective Gust Wind Speed | | |
|---|---|---|---|---|---|---|---|---|
| | | | Speed (mph) | % Change | Rating | Speed (mph) | % Change | Rating |
| **105** | A | Annual | 19 | | Walking | 27 | | Acceptable |
| | B | Annual | 17 | -11% | Walking | 23 | -15% | Acceptable |
| | C | Annual | 17 | -11% | Walking | 24 | -11% | Acceptable |
| | D | Annual | 14 | -26% | Standing | 23 | -15% | Acceptable |
| | E | Annual | 14 | -26% | Standing | 22 | -19% | Acceptable |
| **106** | A | Annual | 18 | | Walking | 27 | | Acceptable |
| | B | Annual | 18 | | Walking | 24 | -11% | Acceptable |
| | C | Annual | 17 | | Walking | 24 | -11% | Acceptable |
| | D | Annual | 8 | -56% | Sitting | 13 | -52% | Acceptable |
| | E | Annual | 8 | -56% | Sitting | 13 | -52% | Acceptable |
| **107** | A | Annual | 16 | | Walking | 25 | | Acceptable |
| | B | Annual | 17 | | Walking | 23 | | Acceptable |
| | C | Annual | 17 | | Walking | 24 | | Acceptable |
| | D | Annual | 14 | -12% | Standing | 22 | -12% | Acceptable |
| | E | Annual | 14 | -12% | Standing | 21 | -16% | Acceptable |
| **108** | A | Annual | 19 | | Walking | 27 | | Acceptable |
| | B | Annual | 17 | -11% | Walking | 23 | -15% | Acceptable |
| | C | Annual | 16 | -16% | Walking | 23 | -15% | Acceptable |
| | D | Annual | 17 | -11% | Walking | 25 | | Acceptable |
| | E | Annual | 17 | -11% | Walking | 25 | | Acceptable |
| **109** | A | Annual | 14 | | Standing | 23 | | Acceptable |
| | B | Annual | 17 | 21% | Walking | 23 | | Acceptable |
| | C | Annual | 17 | 21% | Walking | 24 | | Acceptable |
| | D | Annual | 17 | 21% | Walking | 26 | 13% | Acceptable |
| | E | Annual | 17 | 21% | Walking | 25 | | Acceptable |
| **110** | A | Annual | 13 | | Standing | 21 | | Acceptable |
| | B | Annual | 17 | 31% | Walking | 23 | | Acceptable |
| | C | Annual | 16 | 23% | Walking | 23 | | Acceptable |
| | D | Annual | -- | -- | -- | -- | -- | -- |
| | E | Annual | -- | -- | -- | -- | -- | -- |
| **111** | A | Annual | 12 | | Sitting | 19 | | Acceptable |
| | B | Annual | 18 | 50% | Walking | 24 | 26% | Acceptable |
| | C | Annual | 17 | 42% | Walking | 24 | 26% | Acceptable |
| | D | Annual | -- | -- | -- | -- | -- | -- |
| | E | Annual | -- | -- | -- | -- | -- | -- |
| **112** | A | Annual | 12 | | Sitting | 21 | | Acceptable |
| | B | Annual | 17 | 42% | Walking | 23 | | Acceptable |
| | C | Annual | 16 | 33% | Walking | 23 | | Acceptable |
| | D | Annual | -- | -- | -- | -- | -- | -- |
| | E | Annual | -- | -- | -- | -- | -- | -- |

**Table 1: Mean Speed and Effective Gust Categories - Annual**

| Location | Configuration | Season | Mean Wind Speed | | | Effective Gust Wind Speed | | |
|---|---|---|---|---|---|---|---|---|
| | | | Speed (mph) | % Change | Rating | Speed (mph) | % Change | Rating |
| **113** | A | Annual | 15 | | Standing | 23 | | Acceptable |
| | B | Annual | 16 | | Walking | 22 | | Acceptable |
| | C | Annual | 16 | | Walking | 23 | | Acceptable |
| | D | Annual | -- | -- | -- | -- | -- | -- |
| | E | Annual | -- | -- | -- | -- | -- | -- |
| **114** | A | Annual | 16 | | Walking | 23 | | Acceptable |
| | B | Annual | 17 | | Walking | 23 | | Acceptable |
| | C | Annual | 16 | | Walking | 23 | | Acceptable |
| | D | Annual | 22 | 38% | Uncomfortable | 31 | 39% | Acceptable |
| | E | Annual | 22 | 38% | Uncomfortable | 31 | 35% | Acceptable |
| **115** | A | Annual | 13 | | Standing | 22 | | Acceptable |
| | B | Annual | 16 | 23% | Walking | 22 | | Acceptable |
| | C | Annual | 15 | 15% | Standing | 22 | | Acceptable |
| | D | Annual | 16 | 23% | Walking | 26 | 18% | Acceptable |
| | E | Annual | 15 | 15% | Standing | 25 | 14% | Acceptable |
| **116** | A | Annual | 16 | | Walking | 25 | | Acceptable |
| | B | Annual | 16 | | Walking | 23 | | Acceptable |
| | C | Annual | 15 | | Standing | 22 | -12% | Acceptable |
| | D | Annual | 16 | | Walking | 24 | | Acceptable |
| | E | Annual | 16 | | Walking | 24 | | Acceptable |
| **117** | A | Annual | 15 | | Standing | 23 | | Acceptable |
| | B | Annual | 16 | | Walking | 23 | | Acceptable |
| | C | Annual | 16 | | Walking | 23 | | Acceptable |
| | D | Annual | 21 | 40% | Uncomfortable | 30 | 30% | Acceptable |
| | E | Annual | 21 | 40% | Uncomfortable | 29 | 26% | Acceptable |
| **118** | A | Annual | 16 | | Walking | 25 | | Acceptable |
| | B | Annual | 15 | | Standing | 22 | -12% | Acceptable |
| | C | Annual | 14 | -12% | Standing | 21 | -16% | Acceptable |
| | D | Annual | 19 | 19% | Walking | 27 | | Acceptable |
| | E | Annual | 19 | 19% | Walking | 27 | | Acceptable |
| **119** | A | Annual | 13 | | Standing | 23 | | Acceptable |
| | B | Annual | 14 | | Standing | 21 | | Acceptable |
| | C | Annual | 14 | | Standing | 21 | | Acceptable |
| | D | Annual | -- | -- | -- | -- | -- | -- |
| | E | Annual | -- | -- | -- | -- | -- | -- |
| **120** | A | Annual | 17 | | Walking | 26 | | Acceptable |
| | B | Annual | 14 | -18% | Standing | 21 | -19% | Acceptable |
| | C | Annual | 14 | -18% | Standing | 20 | -23% | Acceptable |
| | D | Annual | 23 | 35% | Uncomfortable | 31 | 19% | Acceptable |
| | E | Annual | 23 | 35% | Uncomfortable | 30 | 15% | Acceptable |

**Table 1: Mean Speed and Effective Gust Categories - Annual**

| Location | Configuration | Season | Mean Wind Speed | | | Effective Gust Wind Speed | | |
|---|---|---|---|---|---|---|---|---|
| | | | Speed (mph) | % Change | Rating | Speed (mph) | % Change | Rating |
| **121** | A | Annual | 15 | | Standing | 22 | | Acceptable |
| | B | Annual | 15 | | Standing | 21 | | Acceptable |
| | C | Annual | 14 | | Standing | 21 | | Acceptable |
| | D | Annual | 19 | 27% | Walking | 28 | 27% | Acceptable |
| | E | Annual | 19 | 27% | Walking | 27 | 23% | Acceptable |
| **122** | A | Annual | 22 | | Uncomfortable | 30 | | Acceptable |
| | B | Annual | 11 | -50% | Sitting | 17 | -43% | Acceptable |
| | C | Annual | 10 | -55% | Sitting | 17 | -43% | Acceptable |
| | D | Annual | 16 | -27% | Walking | 25 | -17% | Acceptable |
| | E | Annual | 16 | -27% | Walking | 25 | -17% | Acceptable |
| **123** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 12 | -- | Sitting | 19 | -- | Acceptable |
| | C | Annual | 12 | -- | Sitting | 19 | -- | Acceptable |
| | D | Annual | 9 | -- | Sitting | 15 | -- | Acceptable |
| | E | Annual | 9 | -- | Sitting | 15 | -- | Acceptable |
| **124** | A | Annual | 14 | | Standing | 19 | | Acceptable |
| | B | Annual | 13 | | Standing | 19 | | Acceptable |
| | C | Annual | 13 | | Standing | 19 | | Acceptable |
| | D | Annual | 15 | | Standing | 22 | 16% | Acceptable |
| | E | Annual | 14 | | Standing | 21 | 11% | Acceptable |
| **125** | A | Annual | 16 | | Walking | 22 | | Acceptable |
| | B | Annual | 17 | | Walking | 25 | 14% | Acceptable |
| | C | Annual | 18 | 12% | Walking | 25 | 14% | Acceptable |
| | D | Annual | 15 | | Standing | 22 | | Acceptable |
| | E | Annual | 14 | -12% | Standing | 21 | | Acceptable |
| **126** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 14 | -- | Standing | 23 | -- | Acceptable |
| | C | Annual | 15 | -- | Standing | 23 | -- | Acceptable |
| | D | Annual | 17 | -- | Walking | 24 | -- | Acceptable |
| | E | Annual | 17 | -- | Walking | 24 | -- | Acceptable |
| **127** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 15 | -- | Standing | 24 | -- | Acceptable |
| | C | Annual | 14 | -- | Standing | 24 | -- | Acceptable |
| | D | Annual | 17 | -- | Walking | 25 | -- | Acceptable |
| | E | Annual | 17 | -- | Walking | 24 | -- | Acceptable |
| **128** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 14 | -- | Standing | 23 | -- | Acceptable |
| | C | Annual | 13 | -- | Standing | 22 | -- | Acceptable |
| | D | Annual | 13 | -- | Standing | 18 | -- | Acceptable |
| | E | Annual | 13 | -- | Standing | 18 | -- | Acceptable |

**Table 1: Mean Speed and Effective Gust Categories - Annual**

| Location | Configuration | Season | Mean Wind Speed | | | Effective Gust Wind Speed | | |
|---|---|---|---|---|---|---|---|---|
| | | | Speed (mph) | % Change | Rating | Speed (mph) | % Change | Rating |
| **129** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 14 | -- | Standing | 21 | -- | Acceptable |
| | C | Annual | 15 | -- | Standing | 23 | -- | Acceptable |
| | D | Annual | 22 | -- | Uncomfortable | 31 | -- | Acceptable |
| | E | Annual | 22 | -- | Uncomfortable | 30 | -- | Acceptable |
| **130** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 15 | -- | Standing | 21 | -- | Acceptable |
| | C | Annual | 14 | -- | Standing | 21 | -- | Acceptable |
| | D | Annual | 15 | -- | Standing | 23 | -- | Acceptable |
| | E | Annual | 15 | -- | Standing | 22 | -- | Acceptable |
| **131** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 14 | -- | Standing | 23 | -- | Acceptable |
| | C | Annual | 13 | -- | Standing | 21 | -- | Acceptable |
| | D | Annual | 15 | -- | Standing | 22 | -- | Acceptable |
| | E | Annual | 16 | -- | Walking | 23 | -- | Acceptable |
| **132** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 14 | -- | Standing | 23 | -- | Acceptable |
| | C | Annual | 14 | -- | Standing | 22 | -- | Acceptable |
| | D | Annual | 12 | -- | Sitting | 18 | -- | Acceptable |
| | E | Annual | 12 | -- | Sitting | 18 | -- | Acceptable |
| **133** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 18 | -- | Walking | 24 | -- | Acceptable |
| | C | Annual | 17 | -- | Walking | 25 | -- | Acceptable |
| | D | Annual | -- | -- | -- | -- | -- | -- |
| | E | Annual | -- | -- | -- | -- | -- | -- |
| **134** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 16 | -- | Walking | 23 | -- | Acceptable |
| | C | Annual | 17 | -- | Walking | 25 | -- | Acceptable |
| | D | Annual | -- | -- | -- | -- | -- | -- |
| | E | Annual | -- | -- | -- | -- | -- | -- |
| **135** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 13 | -- | Standing | 22 | -- | Acceptable |
| | C | Annual | 12 | -- | Sitting | 19 | -- | Acceptable |
| | D | Annual | 23 | -- | Uncomfortable | 31 | -- | Acceptable |
| | E | Annual | 22 | -- | Uncomfortable | 30 | -- | Acceptable |
| **136** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 12 | -- | Sitting | 17 | -- | Acceptable |
| | C | Annual | 7 | -- | Sitting | 12 | -- | Acceptable |
| | D | Annual | 8 | -- | Sitting | 13 | -- | Acceptable |
| | E | Annual | 8 | -- | Sitting | 12 | -- | Acceptable |

**Table 1: Mean Speed and Effective Gust Categories - Annual**

| Location | Configuration | Season | Mean Wind Speed | | | Effective Gust Wind Speed | | |
|---|---|---|---|---|---|---|---|---|
| | | | Speed (mph) | % Change | Rating | Speed (mph) | % Change | Rating |
| **137** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 17 | -- | Walking | 24 | -- | Acceptable |
| | C | Annual | 10 | -- | Sitting | 16 | -- | Acceptable |
| | D | Annual | 12 | -- | Sitting | 19 | -- | Acceptable |
| | E | Annual | 11 | -- | Sitting | 19 | -- | Acceptable |
| **138** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 20 | -- | Uncomfortable | 25 | -- | Acceptable |
| | C | Annual | 17 | -- | Walking | 26 | -- | Acceptable |
| | D | Annual | 18 | -- | Walking | 27 | -- | Acceptable |
| | E | Annual | 16 | -- | Walking | 25 | -- | Acceptable |
| **139** | A | Annual | 7 | | Sitting | 11 | | Acceptable |
| | B | Annual | 14 | 100% | Standing | 20 | 82% | Acceptable |
| | C | Annual | 11 | 57% | Sitting | 16 | 45% | Acceptable |
| | D | Annual | 10 | 43% | Sitting | 15 | 36% | Acceptable |
| | E | Annual | 9 | 29% | Sitting | 14 | 27% | Acceptable |
| **140** | A | Annual | 6 | | Sitting | 11 | | Acceptable |
| | B | Annual | -- | -- | -- | -- | -- | -- |
| | C | Annual | -- | -- | -- | -- | -- | -- |
| | D | Annual | -- | -- | -- | -- | -- | -- |
| | E | Annual | -- | -- | -- | -- | -- | -- |
| **141** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 13 | -- | Standing | 20 | -- | Acceptable |
| | C | Annual | 9 | -- | Sitting | 14 | -- | Acceptable |
| | D | Annual | 11 | -- | Sitting | 18 | -- | Acceptable |
| | E | Annual | 12 | -- | Sitting | 18 | -- | Acceptable |
| **142** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 19 | -- | Walking | 26 | -- | Acceptable |
| | C | Annual | 15 | -- | Standing | 22 | -- | Acceptable |
| | D | Annual | 18 | -- | Walking | 25 | -- | Acceptable |
| | E | Annual | 17 | -- | Walking | 23 | -- | Acceptable |
| **143** | A | Annual | 6 | | Sitting | 11 | | Acceptable |
| | B | Annual | -- | -- | -- | -- | -- | -- |
| | C | Annual | -- | -- | -- | -- | -- | -- |
| | D | Annual | -- | -- | -- | -- | -- | -- |
| | E | Annual | -- | -- | -- | -- | -- | -- |
| **144** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 16 | -- | Walking | 23 | -- | Acceptable |
| | C | Annual | 12 | -- | Sitting | 18 | -- | Acceptable |
| | D | Annual | 10 | -- | Sitting | 14 | -- | Acceptable |
| | E | Annual | 9 | -- | Sitting | 14 | -- | Acceptable |

**Table 1: Mean Speed and Effective Gust Categories - Annual**

| Location | Configuration | Season | Mean Wind Speed | | | Effective Gust Wind Speed | | |
|---|---|---|---|---|---|---|---|---|
| | | | Speed (mph) | % Change | Rating | Speed (mph) | % Change | Rating |
| **145** | A | Annual | 10 | | Sitting | 15 | | Acceptable |
| | B | Annual | 9 | | Sitting | 14 | | Acceptable |
| | C | Annual | 10 | | Sitting | 15 | | Acceptable |
| | D | Annual | 8 | -20% | Sitting | 12 | -20% | Acceptable |
| | E | Annual | 7 | -30% | Sitting | 11 | -27% | Acceptable |
| **146** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 17 | -- | Walking | 23 | -- | Acceptable |
| | C | Annual | 17 | -- | Walking | 24 | -- | Acceptable |
| | D | Annual | 17 | -- | Walking | 23 | -- | Acceptable |
| | E | Annual | 16 | -- | Walking | 22 | -- | Acceptable |
| **147** | A | Annual | 6 | | Sitting | 10 | | Acceptable |
| | B | Annual | 16 | 167% | Walking | 22 | 120% | Acceptable |
| | C | Annual | 12 | 100% | Sitting | 19 | 90% | Acceptable |
| | D | Annual | 10 | 67% | Sitting | 16 | 60% | Acceptable |
| | E | Annual | 10 | 67% | Sitting | 15 | 50% | Acceptable |
| **148** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 8 | -- | Sitting | 12 | -- | Acceptable |
| | C | Annual | 7 | -- | Sitting | 11 | -- | Acceptable |
| | D | Annual | 7 | -- | Sitting | 11 | -- | Acceptable |
| | E | Annual | 7 | -- | Sitting | 10 | -- | Acceptable |
| **149** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 17 | 467% | Walking | 24 | 500% | Acceptable |
| | C | Annual | 19 | 533% | Walking | 24 | 500% | Acceptable |
| | D | Annual | 17 | 467% | Walking | 22 | 450% | Acceptable |
| | E | Annual | 16 | 433% | Walking | 21 | 425% | Acceptable |
| **150** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 15 | -- | Standing | 21 | -- | Acceptable |
| | C | Annual | 17 | -- | Walking | 22 | -- | Acceptable |
| | D | Annual | 16 | -- | Walking | 21 | -- | Acceptable |
| | E | Annual | 15 | -- | Standing | 20 | -- | Acceptable |
| **151** | A | Annual | 9 | | Sitting | 13 | | Acceptable |
| | B | Annual | 13 | 44% | Standing | 19 | 46% | Acceptable |
| | C | Annual | 15 | 67% | Standing | 22 | 69% | Acceptable |
| | D | Annual | 12 | 33% | Sitting | 17 | 31% | Acceptable |
| | E | Annual | 11 | 22% | Sitting | 16 | 23% | Acceptable |
| **152** | A | Annual | 17 | | Walking | 23 | | Acceptable |
| | B | Annual | 9 | -47% | Sitting | 14 | -39% | Acceptable |
| | C | Annual | 10 | -41% | Sitting | 15 | -35% | Acceptable |
| | D | Annual | 13 | -24% | Standing | 21 | | Acceptable |
| | E | Annual | 13 | -24% | Standing | 20 | -13% | Acceptable |

**Table 1: Mean Speed and Effective Gust Categories - Annual**

| Location | Configuration | Season | Mean Wind Speed | | | Effective Gust Wind Speed | | |
|---|---|---|---|---|---|---|---|---|
| | | | Speed (mph) | % Change | Rating | Speed (mph) | % Change | Rating |
| **153** | A | Annual | 19 | | Walking | 25 | | Acceptable |
| | B | Annual | 13 | -32% | Standing | 18 | -28% | Acceptable |
| | C | Annual | 14 | -26% | Standing | 20 | -20% | Acceptable |
| | D | Annual | 14 | -26% | Standing | 21 | -16% | Acceptable |
| | E | Annual | 13 | -32% | Standing | 20 | -20% | Acceptable |
| **154** | A | Annual | 16 | | Walking | 20 | | Acceptable |
| | B | Annual | 14 | -12% | Standing | 17 | -15% | Acceptable |
| | C | Annual | 14 | -12% | Standing | 19 | | Acceptable |
| | D | Annual | 13 | -19% | Standing | 17 | -15% | Acceptable |
| | E | Annual | 13 | -19% | Standing | 17 | -15% | Acceptable |
| **155** | A | Annual | 13 | | Standing | 19 | | Acceptable |
| | B | Annual | 14 | | Standing | 18 | | Acceptable |
| | C | Annual | 15 | 15% | Standing | 19 | | Acceptable |
| | D | Annual | 14 | | Standing | 18 | | Acceptable |
| | E | Annual | 14 | | Standing | 18 | | Acceptable |
| **156** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | 11 | -- | Sitting | 18 | -- | Acceptable |
| | C | Annual | 12 | -- | Sitting | 19 | -- | Acceptable |
| | D | Annual | 12 | -- | Sitting | 18 | -- | Acceptable |
| | E | Annual | 11 | -- | Sitting | 16 | -- | Acceptable |
| **157** | A | Annual | -- | -- | -- | -- | -- | -- |
| | B | Annual | -- | -- | -- | -- | -- | -- |
| | C | Annual | -- | -- | -- | -- | -- | -- |
| | D | Annual | -- | -- | -- | -- | -- | -- |
| | E | Annual | -- | -- | -- | -- | -- | -- |
| **158** | A | Annual | 12 | | Sitting | 17 | | Acceptable |
| | B | Annual | 16 | 33% | Walking | 23 | 35% | Acceptable |
| | C | Annual | 17 | 42% | Walking | 23 | 35% | Acceptable |
| | D | Annual | 17 | 42% | Walking | 24 | 41% | Acceptable |
| | E | Annual | 14 | 17% | Standing | 20 | 18% | Acceptable |
| **159** | A | Annual | 12 | | Sitting | 17 | | Acceptable |
| | B | Annual | 21 | 75% | Uncomfortable | 28 | 65% | Acceptable |
| | C | Annual | 22 | 83% | Uncomfortable | 28 | 65% | Acceptable |
| | D | Annual | 22 | 83% | Uncomfortable | 28 | 65% | Acceptable |
| | E | Annual | 15 | 25% | Standing | 21 | 24% | Acceptable |
| **160** | A | Annual | 12 | | Sitting | 16 | | Acceptable |
| | B | Annual | 22 | 83% | Uncomfortable | 29 | 81% | Acceptable |
| | C | Annual | 23 | 92% | Uncomfortable | 28 | 75% | Acceptable |
| | D | Annual | 22 | 83% | Uncomfortable | 27 | 69% | Acceptable |
| | E | Annual | 12 | | Sitting | 19 | 19% | Acceptable |

**Table 1: Mean Speed and Effective Gust Categories - Annual**

| Location | Configuration | Season | Mean Wind Speed | | | Effective Gust Wind Speed | | |
|---|---|---|---|---|---|---|---|---|
| | | | Speed (mph) | % Change | Rating | Speed (mph) | % Change | Rating |
| **161** | A | Annual | 13 | | Standing | 18 | | Acceptable |
| | B | Annual | 18 | 38% | Walking | 25 | 39% | Acceptable |
| | C | Annual | 21 | 62% | Uncomfortable | 27 | 50% | Acceptable |
| | D | Annual | 20 | 54% | Uncomfortable | 26 | 44% | Acceptable |
| | E | Annual | 13 | | Standing | 20 | 11% | Acceptable |
| **162** | A | Annual | 8 | | Sitting | 13 | | Acceptable |
| | B | Annual | 9 | 12% | Sitting | 15 | 15% | Acceptable |
| | C | Annual | 11 | 38% | Sitting | 17 | 31% | Acceptable |
| | D | Annual | 10 | 25% | Sitting | 15 | 15% | Acceptable |
| | E | Annual | 9 | 12% | Sitting | 15 | 15% | Acceptable |
| **163** | A | Annual | 15 | | Standing | 21 | | Acceptable |
| | B | Annual | 16 | | Walking | 25 | 19% | Acceptable |
| | C | Annual | 14 | | Standing | 21 | | Acceptable |
| | D | Annual | 13 | -13% | Standing | 21 | | Acceptable |
| | E | Annual | 10 | -33% | Sitting | 16 | -24% | Acceptable |
| **164** | A | Annual | 16 | | Walking | 22 | | Acceptable |
| | B | Annual | 14 | -12% | Standing | 21 | | Acceptable |
| | C | Annual | 13 | -19% | Standing | 21 | | Acceptable |
| | D | Annual | 13 | -19% | Standing | 21 | | Acceptable |
| | E | Annual | 14 | -12% | Standing | 20 | | Acceptable |
| **165** | A | Annual | 16 | | Walking | 22 | | Acceptable |
| | B | Annual | 16 | | Walking | 23 | | Acceptable |
| | C | Annual | 16 | | Walking | 24 | | Acceptable |
| | D | Annual | 16 | | Walking | 24 | | Acceptable |
| | E | Annual | 15 | | Standing | 20 | | Acceptable |
| **166** | A | Annual | 16 | | Walking | 22 | | Acceptable |
| | B | Annual | 21 | 31% | Uncomfortable | 29 | 32% | Acceptable |
| | C | Annual | 21 | 31% | Uncomfortable | 29 | 32% | Acceptable |
| | D | Annual | 20 | 25% | Uncomfortable | 28 | 27% | Acceptable |
| | E | Annual | 22 | 38% | Uncomfortable | 27 | 23% | Acceptable |
| **167** | A | Annual | 16 | | Walking | 22 | | Acceptable |
| | B | Annual | 21 | 31% | Uncomfortable | 30 | 36% | Acceptable |
| | C | Annual | 21 | 31% | Uncomfortable | 30 | 36% | Acceptable |
| | D | Annual | 21 | 31% | Uncomfortable | 30 | 36% | Acceptable |
| | E | Annual | 14 | -12% | Standing | 20 | | Acceptable |
| **168** | A | Annual | 16 | | Walking | 22 | | Acceptable |
| | B | Annual | 14 | -12% | Standing | 22 | | Acceptable |
| | C | Annual | 10 | -38% | Sitting | 17 | -23% | Acceptable |
| | D | Annual | 10 | -38% | Sitting | 17 | -23% | Acceptable |
| | E | Annual | 25 | 56% | Uncomfortable | 31 | 45% | Acceptable |

**Table 1: Mean Speed and Effective Gust Categories - Annual**

| Location | Configuration | Season | Mean Wind Speed | | | Effective Gust Wind Speed | | |
|---|---|---|---|---|---|---|---|---|
| | | | Speed (mph) | % Change | Rating | Speed (mph) | % Change | Rating |
| **169** | A | Annual | 16 | | Walking | 22 | | Acceptable |
| | B | Annual | 9 | -44% | Sitting | 16 | -27% | Acceptable |
| | C | Annual | 8 | -50% | Sitting | 14 | -36% | Acceptable |
| | D | Annual | 8 | -50% | Sitting | 14 | -36% | Acceptable |
| | E | Annual | 19 | 19% | Walking | 25 | 14% | Acceptable |
| **170** | A | Annual | 16 | | Walking | 21 | | Acceptable |
| | B | Annual | 8 | -50% | Sitting | 13 | -38% | Acceptable |
| | C | Annual | 9 | -44% | Sitting | 14 | -33% | Acceptable |
| | D | Annual | 8 | -50% | Sitting | 14 | -33% | Acceptable |
| | E | Annual | 13 | -19% | Standing | 19 | | Acceptable |
| **171** | A | Annual | 15 | | Standing | 21 | | Acceptable |
| | B | Annual | 10 | -33% | Sitting | 17 | -19% | Acceptable |
| | C | Annual | 10 | -33% | Sitting | 18 | -14% | Acceptable |
| | D | Annual | 8 | -47% | Sitting | 15 | -29% | Acceptable |
| | E | Annual | 15 | | Standing | 22 | | Acceptable |
| **172** | A | Annual | 16 | | Walking | 21 | | Acceptable |
| | B | Annual | -- | -- | -- | -- | -- | -- |
| | C | Annual | -- | -- | -- | -- | -- | -- |
| | D | Annual | -- | -- | -- | -- | -- | -- |
| | E | Annual | -- | -- | -- | -- | -- | -- |
| **173** | A | Annual | 15 | | Standing | 20 | | Acceptable |
| | B | Annual | 21 | 40% | Uncomfortable | 28 | 40% | Acceptable |
| | C | Annual | 16 | | Walking | 22 | | Acceptable |
| | D | Annual | 16 | | Walking | 22 | | Acceptable |
| | E | Annual | 11 | -27% | Sitting | 17 | -15% | Acceptable |
| **174** | A | Annual | 14 | | Standing | 19 | | Acceptable |
| | B | Annual | 18 | 29% | Walking | 27 | 42% | Acceptable |
| | C | Annual | 15 | | Standing | 23 | 21% | Acceptable |
| | D | Annual | 14 | | Standing | 21 | 11% | Acceptable |
| | E | Annual | 16 | 14% | Walking | 24 | 26% | Acceptable |
| **175** | A | Annual | 14 | | Standing | 19 | | Acceptable |
| | B | Annual | 13 | | Standing | 20 | | Acceptable |
| | C | Annual | 14 | | Standing | 22 | 16% | Acceptable |
| | D | Annual | 13 | | Standing | 20 | | Acceptable |
| | E | Annual | 17 | 21% | Walking | 24 | 26% | Acceptable |
| **176** | A | Annual | 14 | | Standing | 18 | | Acceptable |
| | B | Annual | 12 | -14% | Sitting | 18 | | Acceptable |
| | C | Annual | 12 | -14% | Sitting | 18 | | Acceptable |
| | D | Annual | 12 | -14% | Sitting | 18 | | Acceptable |
| | E | Annual | 13 | | Standing | 20 | 11% | Acceptable |

**Table 1: Mean Speed and Effective Gust Categories - Annual**

| Location | Configuration | Season | Mean Wind Speed | | | Effective Gust Wind Speed | | |
|---|---|---|---|---|---|---|---|---|
| | | | Speed (mph) | % Change | Rating | Speed (mph) | % Change | Rating |
| **177** | A | Annual | 14 | | Standing | 19 | | Acceptable |
| | B | Annual | 13 | | Standing | 20 | | Acceptable |
| | C | Annual | 12 | -14% | Sitting | 18 | | Acceptable |
| | D | Annual | 12 | -14% | Sitting | 18 | | Acceptable |
| | E | Annual | 12 | -14% | Sitting | 20 | | Acceptable |
| **178** | A | Annual | 15 | | Standing | 19 | | Acceptable |
| | B | Annual | 16 | | Walking | 22 | 16% | Acceptable |
| | C | Annual | 14 | | Standing | 20 | | Acceptable |
| | D | Annual | 13 | -13% | Standing | 19 | | Acceptable |
| | E | Annual | 14 | | Standing | 21 | 11% | Acceptable |
| **179** | A | Annual | 16 | | Walking | 21 | | Acceptable |
| | B | Annual | 10 | -38% | Sitting | 15 | -29% | Acceptable |
| | C | Annual | 11 | -31% | Sitting | 16 | -24% | Acceptable |
| | D | Annual | 10 | -38% | Sitting | 16 | -24% | Acceptable |
| | E | Annual | 10 | -38% | Sitting | 15 | -29% | Acceptable |
| **180** | A | Annual | 16 | | Walking | 21 | | Acceptable |
| | B | Annual | -- | -- | -- | -- | -- | -- |
| | C | Annual | -- | -- | -- | -- | -- | -- |
| | D | Annual | -- | -- | -- | -- | -- | -- |
| | E | Annual | -- | -- | -- | -- | -- | -- |
| **181** | A | Annual | 16 | | Walking | 21 | | Acceptable |
| | B | Annual | -- | -- | -- | -- | -- | -- |
| | C | Annual | -- | -- | -- | -- | -- | -- |
| | D | Annual | -- | -- | -- | -- | -- | -- |
| | E | Annual | -- | -- | -- | -- | -- | -- |
| **182** | A | Annual | 16 | | Walking | 21 | | Acceptable |
| | B | Annual | -- | -- | -- | -- | -- | -- |
| | C | Annual | -- | -- | -- | -- | -- | -- |
| | D | Annual | -- | -- | -- | -- | -- | -- |
| | E | Annual | -- | -- | -- | -- | -- | -- |
| **183** | A | Annual | 16 | | Walking | 22 | | Acceptable |
| | B | Annual | -- | -- | -- | -- | -- | -- |
| | C | Annual | -- | -- | -- | -- | -- | -- |
| | D | Annual | -- | -- | -- | -- | -- | -- |
| | E | Annual | -- | -- | -- | -- | -- | -- |
| **184** | A | Annual | 16 | | Walking | 22 | | Acceptable |
| | B | Annual | 12 | -25% | Sitting | 19 | -14% | Acceptable |
| | C | Annual | 13 | -19% | Standing | 20 | | Acceptable |
| | D | Annual | 13 | -19% | Standing | 20 | | Acceptable |
| | E | Annual | 19 | 19% | Walking | 25 | 14% | Acceptable |

**Table 1: Mean Speed and Effective Gust Categories - Annual**

| Location | Configuration | Season | Mean Wind Speed | | | Effective Gust Wind Speed | | |
|---|---|---|---|---|---|---|---|---|
| | | | Speed (mph) | % Change | Rating | Speed (mph) | % Change | Rating |
| **185** | A | Annual | 16 | | Walking | 22 | | Acceptable |
| | B | Annual | 13 | -19% | Standing | 19 | -14% | Acceptable |
| | C | Annual | 13 | -19% | Standing | 20 | | Acceptable |
| | D | Annual | 13 | -19% | Standing | 19 | -14% | Acceptable |
| | E | Annual | 18 | 12% | Walking | 24 | | Acceptable |
| **186** | A | Annual | 16 | | Walking | 21 | | Acceptable |
| | B | Annual | -- | -- | -- | -- | -- | -- |
| | C | Annual | -- | -- | -- | -- | -- | -- |
| | D | Annual | -- | -- | -- | -- | -- | -- |
| | E | Annual | -- | -- | -- | -- | -- | -- |
| **187** | A | Annual | 16 | | Walking | 21 | | Acceptable |
| | B | Annual | 12 | -25% | Sitting | 18 | -14% | Acceptable |
| | C | Annual | 13 | -19% | Standing | 19 | | Acceptable |
| | D | Annual | 12 | -25% | Sitting | 19 | | Acceptable |
| | E | Annual | 12 | -25% | Sitting | 19 | | Acceptable |
| **188** | A | Annual | 16 | | Walking | 21 | | Acceptable |
| | B | Annual | 13 | -19% | Standing | 19 | | Acceptable |
| | C | Annual | 14 | -12% | Standing | 21 | | Acceptable |
| | D | Annual | 13 | -19% | Standing | 20 | | Acceptable |
| | E | Annual | 12 | -25% | Sitting | 20 | | Acceptable |
| **189** | A | Annual | 16 | | Walking | 22 | | Acceptable |
| | B | Annual | 19 | 19% | Walking | 26 | 18% | Acceptable |
| | C | Annual | 21 | 31% | Uncomfortable | 28 | 27% | Acceptable |
| | D | Annual | 20 | 25% | Uncomfortable | 27 | 23% | Acceptable |
| | E | Annual | 21 | 31% | Uncomfortable | 27 | 23% | Acceptable |
| **190** | A | Annual | 16 | | Walking | 22 | | Acceptable |
| | B | Annual | 18 | 12% | Walking | 25 | 14% | Acceptable |
| | C | Annual | 19 | 19% | Walking | 27 | 23% | Acceptable |
| | D | Annual | 19 | 19% | Walking | 26 | 18% | Acceptable |
| | E | Annual | 18 | 12% | Walking | 24 | | Acceptable |
| **191** | A | Annual | 16 | | Walking | 22 | | Acceptable |
| | B | Annual | 18 | 12% | Walking | 24 | | Acceptable |
| | C | Annual | 19 | 19% | Walking | 25 | 14% | Acceptable |
| | D | Annual | 19 | 19% | Walking | 25 | 14% | Acceptable |
| | E | Annual | 18 | 12% | Walking | 24 | | Acceptable |
| **192** | A | Annual | 17 | | Walking | 22 | | Acceptable |
| | B | Annual | 17 | | Walking | 23 | | Acceptable |
| | C | Annual | 18 | | Walking | 24 | | Acceptable |
| | D | Annual | 18 | | Walking | 23 | | Acceptable |
| | E | Annual | 18 | | Walking | 23 | | Acceptable |

**Table 1: Mean Speed and Effective Gust Categories - Annual**

| Location | Configuration | Season | Mean Wind Speed | | | Effective Gust Wind Speed | | |
|---|---|---|---|---|---|---|---|---|
| | | | Speed (mph) | % Change | Rating | Speed (mph) | % Change | Rating |
| **193** | A | Annual | 16 | | Walking | 22 | | Acceptable |
| | B | Annual | 14 | -12% | Standing | 20 | | Acceptable |
| | C | Annual | 14 | -12% | Standing | 21 | | Acceptable |
| | D | Annual | 13 | -19% | Standing | 20 | | Acceptable |
| | E | Annual | 14 | -12% | Standing | 21 | | Acceptable |
| **194** | A | Annual | 14 | | Standing | 19 | | Acceptable |
| | B | Annual | 13 | | Standing | 20 | | Acceptable |
| | C | Annual | 10 | -29% | Sitting | 16 | -16% | Acceptable |
| | D | Annual | 10 | -29% | Sitting | 16 | -16% | Acceptable |
| | E | Annual | 11 | -21% | Sitting | 17 | -11% | Acceptable |
| **195** | A | Annual | 10 | | Sitting | 16 | | Acceptable |
| | B | Annual | 9 | | Sitting | 15 | | Acceptable |
| | C | Annual | 9 | | Sitting | 15 | | Acceptable |
| | D | Annual | 9 | | Sitting | 16 | | Acceptable |
| | E | Annual | 9 | | Sitting | 15 | | Acceptable |
| **196** | A | Annual | 16 | | Walking | 22 | | Acceptable |
| | B | Annual | 15 | | Standing | 22 | | Acceptable |
| | C | Annual | 16 | | Walking | 24 | | Acceptable |
| | D | Annual | 14 | -12% | Standing | 20 | | Acceptable |
| | E | Annual | 13 | -19% | Standing | 20 | | Acceptable |
| **197** | A | Annual | 18 | | Walking | 27 | | Acceptable |
| | B | Annual | 15 | -17% | Standing | 21 | -22% | Acceptable |
| | C | Annual | 16 | -11% | Walking | 22 | -19% | Acceptable |
| | D | Annual | 17 | | Walking | 26 | | Acceptable |
| | E | Annual | 17 | | Walking | 25 | | Acceptable |
| **198** | A | Annual | 17 | | Walking | 28 | | Acceptable |
| | B | Annual | 18 | | Walking | 25 | -11% | Acceptable |
| | C | Annual | 18 | | Walking | 25 | -11% | Acceptable |
| | D | Annual | 20 | 18% | Uncomfortable | 30 | | Acceptable |
| | E | Annual | 20 | 18% | Uncomfortable | 30 | | Acceptable |
| **199** | A | Annual | 13 | | Standing | 20 | | Acceptable |
| | B | Annual | 16 | 23% | Walking | 22 | | Acceptable |
| | C | Annual | 16 | 23% | Walking | 22 | | Acceptable |
| | D | Annual | 14 | | Standing | 22 | | Acceptable |
| | E | Annual | 14 | | Standing | 21 | | Acceptable |
| **200** | A | Annual | 13 | | Standing | 19 | | Acceptable |
| | B | Annual | 12 | | Sitting | 19 | | Acceptable |
| | C | Annual | 12 | | Sitting | 19 | | Acceptable |
| | D | Annual | 13 | | Standing | 20 | | Acceptable |
| | E | Annual | 13 | | Standing | 20 | | Acceptable |

**Table 1: Mean Speed and Effective Gust Categories - Annual**

| Location | Configuration | Season | Mean Wind Speed | | | Effective Gust Wind Speed | | |
|---|---|---|---|---|---|---|---|---|
| | | | Speed (mph) | % Change | Rating | Speed (mph) | % Change | Rating |
| **201** | A | Annual | 12 | | Sitting | 19 | | Acceptable |
| | B | Annual | 12 | | Sitting | 19 | | Acceptable |
| | C | Annual | 12 | | Sitting | 19 | | Acceptable |
| | D | Annual | 13 | | Standing | 20 | | Acceptable |
| | E | Annual | 13 | | Standing | 20 | | Acceptable |
| **202** | A | Annual | 12 | | Sitting | 19 | | Acceptable |
| | B | Annual | 15 | 25% | Standing | 22 | 16% | Acceptable |
| | C | Annual | 14 | 17% | Standing | 21 | 11% | Acceptable |
| | D | Annual | 14 | 17% | Standing | 22 | 16% | Acceptable |
| | E | Annual | 14 | 17% | Standing | 22 | 16% | Acceptable |
| **203** | A | Annual | 14 | | Standing | 21 | | Acceptable |
| | B | Annual | 15 | | Standing | 21 | | Acceptable |
| | C | Annual | 14 | | Standing | 20 | | Acceptable |
| | D | Annual | 16 | 14% | Walking | 23 | | Acceptable |
| | E | Annual | 16 | 14% | Walking | 22 | | Acceptable |
| **204** | A | Annual | 17 | | Walking | 25 | | Acceptable |
| | B | Annual | 14 | -18% | Standing | 21 | -16% | Acceptable |
| | C | Annual | 14 | -18% | Standing | 21 | -16% | Acceptable |
| | D | Annual | 11 | -35% | Sitting | 16 | -36% | Acceptable |
| | E | Annual | 10 | -41% | Sitting | 16 | -36% | Acceptable |
| **205** | A | Annual | 14 | | Standing | 22 | | Acceptable |
| | B | Annual | 14 | | Standing | 20 | | Acceptable |
| | C | Annual | 14 | | Standing | 21 | | Acceptable |
| | D | Annual | 14 | | Standing | 21 | | Acceptable |
| | E | Annual | 13 | | Standing | 20 | | Acceptable |
| **206** | A | Annual | 14 | | Standing | 20 | | Acceptable |
| | B | Annual | 13 | | Standing | 19 | | Acceptable |
| | C | Annual | 13 | | Standing | 19 | | Acceptable |
| | D | Annual | 11 | -21% | Sitting | 17 | -15% | Acceptable |
| | E | Annual | 11 | -21% | Sitting | 16 | -20% | Acceptable |
| **207** | A | Annual | 16 | | Walking | 22 | | Acceptable |
| | B | Annual | 17 | | Walking | 22 | | Acceptable |
| | C | Annual | 17 | | Walking | 22 | | Acceptable |
| | D | Annual | 16 | | Walking | 21 | | Acceptable |
| | E | Annual | 15 | | Standing | 20 | | Acceptable |
| **208** | A | Annual | 17 | | Walking | 25 | | Acceptable |
| | B | Annual | 19 | 12% | Walking | 26 | | Acceptable |
| | C | Annual | 19 | 12% | Walking | 26 | | Acceptable |
| | D | Annual | 18 | | Walking | 25 | | Acceptable |
| | E | Annual | 16 | | Walking | 23 | | Acceptable |

**Table 1: Mean Speed and Effective Gust Categories - Annual**

| Location | Configuration | Season | Mean Wind Speed | | | Effective Gust Wind Speed | | |
|---|---|---|---|---|---|---|---|---|
| | | | Speed (mph) | % Change | Rating | Speed (mph) | % Change | Rating |
| **209** | A | Annual | 21 | | Uncomfortable | 28 | | Acceptable |
| | B | Annual | 12 | -43% | Sitting | 19 | -32% | Acceptable |
| | C | Annual | 14 | -33% | Standing | 22 | -21% | Acceptable |
| | D | Annual | 16 | -24% | Walking | 23 | -18% | Acceptable |
| | E | Annual | 16 | -24% | Walking | 22 | -21% | Acceptable |
| **210** | A | Annual | 20 | | Uncomfortable | 26 | | Acceptable |
| | B | Annual | 12 | -40% | Sitting | 19 | -27% | Acceptable |
| | C | Annual | 14 | -30% | Standing | 21 | -19% | Acceptable |
| | D | Annual | 14 | -30% | Standing | 21 | -19% | Acceptable |
| | E | Annual | 13 | -35% | Standing | 20 | -23% | Acceptable |
| **211** | A | Annual | 17 | | Walking | 23 | | Acceptable |
| | B | Annual | 18 | | Walking | 25 | | Acceptable |
| | C | Annual | 19 | 12% | Walking | 26 | 13% | Acceptable |
| | D | Annual | 19 | 12% | Walking | 25 | | Acceptable |
| | E | Annual | 18 | | Walking | 24 | | Acceptable |
| **212** | A | Annual | 13 | | Standing | 20 | | Acceptable |
| | B | Annual | 15 | 15% | Standing | 23 | 15% | Acceptable |
| | C | Annual | 15 | 15% | Standing | 24 | 20% | Acceptable |
| | D | Annual | 14 | | Standing | 22 | | Acceptable |
| | E | Annual | 13 | | Standing | 20 | | Acceptable |
| **213** | A | Annual | 21 | | Uncomfortable | 27 | | Acceptable |
| | B | Annual | 15 | -29% | Standing | 22 | -19% | Acceptable |
| | C | Annual | 17 | -19% | Walking | 23 | -15% | Acceptable |
| | D | Annual | 19 | | Walking | 24 | -11% | Acceptable |
| | E | Annual | 18 | -14% | Walking | 23 | -15% | Acceptable |
| **214** | A | Annual | 15 | | Standing | 23 | | Acceptable |
| | B | Annual | 11 | -27% | Sitting | 18 | -22% | Acceptable |
| | C | Annual | 12 | -20% | Sitting | 18 | -22% | Acceptable |
| | D | Annual | 11 | -27% | Sitting | 17 | -26% | Acceptable |
| | E | Annual | 10 | -33% | Sitting | 16 | -30% | Acceptable |
| **215** | A | Annual | 18 | | Walking | 26 | | Acceptable |
| | B | Annual | 16 | -11% | Walking | 23 | -12% | Acceptable |
| | C | Annual | 16 | -11% | Walking | 23 | -12% | Acceptable |
| | D | Annual | 18 | | Walking | 25 | | Acceptable |
| | E | Annual | 17 | | Walking | 24 | | Acceptable |
| **216** | A | Annual | 20 | | Uncomfortable | 26 | | Acceptable |
| | B | Annual | 10 | -50% | Sitting | 17 | -35% | Acceptable |
| | C | Annual | 11 | -45% | Sitting | 17 | -35% | Acceptable |
| | D | Annual | 14 | -30% | Standing | 21 | -19% | Acceptable |
| | E | Annual | 13 | -35% | Standing | 19 | -27% | Acceptable |

**Table 1: Mean Speed and Effective Gust Categories - Annual**

| Location | Configuration | Season | Mean Wind Speed | | | Effective Gust Wind Speed | | |
|---|---|---|---|---|---|---|---|---|
| | | | Speed (mph) | % Change | Rating | Speed (mph) | % Change | Rating |
| **217** | A | Annual | 18 | | Walking | 24 | | Acceptable |
| | B | Annual | 14 | -22% | Standing | 20 | -17% | Acceptable |
| | C | Annual | 15 | -17% | Standing | 20 | -17% | Acceptable |
| | D | Annual | 16 | -11% | Walking | 22 | | Acceptable |
| | E | Annual | 15 | -17% | Standing | 21 | -12% | Acceptable |
| **218** | A | Annual | 15 | | Standing | 22 | | Acceptable |
| | B | Annual | 14 | | Standing | 20 | | Acceptable |
| | C | Annual | 16 | | Walking | 21 | | Acceptable |
| | D | Annual | 15 | | Standing | 22 | | Acceptable |
| | E | Annual | 15 | | Standing | 20 | | Acceptable |
| **219** | A | Annual | 16 | | Walking | 22 | | Acceptable |
| | B | Annual | 16 | | Walking | 22 | | Acceptable |
| | C | Annual | 17 | | Walking | 23 | | Acceptable |
| | D | Annual | 17 | | Walking | 23 | | Acceptable |
| | E | Annual | 16 | | Walking | 21 | | Acceptable |
| **220** | A | Annual | 15 | | Standing | 20 | | Acceptable |
| | B | Annual | 15 | | Standing | 21 | | Acceptable |
| | C | Annual | 16 | | Walking | 21 | | Acceptable |
| | D | Annual | 16 | | Walking | 21 | | Acceptable |
| | E | Annual | 15 | | Standing | 20 | | Acceptable |
| **221** | A | Annual | 16 | | Walking | 22 | | Acceptable |
| | B | Annual | 16 | | Walking | 22 | | Acceptable |
| | C | Annual | 18 | 12% | Walking | 25 | 14% | Acceptable |
| | D | Annual | 18 | 12% | Walking | 24 | | Acceptable |
| | E | Annual | 17 | | Walking | 22 | | Acceptable |
| **222** | A | Annual | 14 | | Standing | 21 | | Acceptable |
| | B | Annual | 17 | 21% | Walking | 24 | 14% | Acceptable |
| | C | Annual | 17 | 21% | Walking | 23 | | Acceptable |
| | D | Annual | 16 | 14% | Walking | 22 | | Acceptable |
| | E | Annual | 13 | | Standing | 20 | | Acceptable |
| **223** | A | Annual | 13 | | Standing | 20 | | Acceptable |
| | B | Annual | 15 | 15% | Standing | 22 | | Acceptable |
| | C | Annual | 16 | 23% | Walking | 23 | 15% | Acceptable |
| | D | Annual | 16 | 23% | Walking | 22 | | Acceptable |
| | E | Annual | 14 | | Standing | 20 | | Acceptable |
| **224** | A | Annual | 13 | | Standing | 20 | | Acceptable |
| | B | Annual | 15 | 15% | Standing | 21 | | Acceptable |
| | C | Annual | 17 | 31% | Walking | 24 | 20% | Acceptable |
| | D | Annual | 16 | 23% | Walking | 23 | 15% | Acceptable |
| | E | Annual | 15 | 15% | Standing | 21 | | Acceptable |

**Table 1: Mean Speed and Effective Gust Categories - Annual**

| Location | Configuration | Season | Mean Wind Speed | | | Effective Gust Wind Speed | | |
|---|---|---|---|---|---|---|---|---|
| | | | Speed (mph) | % Change | Rating | Speed (mph) | % Change | Rating |
| **225** | A | Annual | 17 | | Walking | 22 | | Acceptable |
| | B | Annual | 18 | | Walking | 24 | | Acceptable |
| | C | Annual | 19 | 12% | Walking | 26 | 18% | Acceptable |
| | D | Annual | 18 | | Walking | 24 | | Acceptable |
| | E | Annual | 17 | | Walking | 23 | | Acceptable |
| **226** | A | Annual | 17 | | Walking | 23 | | Acceptable |
| | B | Annual | 18 | | Walking | 24 | | Acceptable |
| | C | Annual | 20 | 18% | Uncomfortable | 27 | 17% | Acceptable |
| | D | Annual | 19 | 12% | Walking | 25 | | Acceptable |
| | E | Annual | 20 | 18% | Uncomfortable | 26 | 13% | Acceptable |
| **227** | A | Annual | 18 | | Walking | 23 | | Acceptable |
| | B | Annual | 18 | | Walking | 24 | | Acceptable |
| | C | Annual | 20 | 11% | Uncomfortable | 26 | 13% | Acceptable |
| | D | Annual | 20 | 11% | Uncomfortable | 25 | | Acceptable |
| | E | Annual | 19 | | Walking | 27 | 17% | Acceptable |
| **228** | A | Annual | 17 | | Walking | 23 | | Acceptable |
| | B | Annual | 18 | | Walking | 23 | | Acceptable |
| | C | Annual | 18 | | Walking | 24 | | Acceptable |
| | D | Annual | 18 | | Walking | 23 | | Acceptable |
| | E | Annual | 18 | | Walking | 23 | | Acceptable |
| **229** | A | Annual | 17 | | Walking | 23 | | Acceptable |
| | B | Annual | 16 | | Walking | 21 | | Acceptable |
| | C | Annual | 16 | | Walking | 22 | | Acceptable |
| | D | Annual | 16 | | Walking | 21 | | Acceptable |
| | E | Annual | 16 | | Walking | 22 | | Acceptable |
| **230** | A | Annual | 14 | | Standing | 19 | | Acceptable |
| | B | Annual | 10 | -29% | Sitting | 16 | -16% | Acceptable |
| | C | Annual | 11 | -21% | Sitting | 17 | -11% | Acceptable |
| | D | Annual | 11 | -21% | Sitting | 16 | -16% | Acceptable |
| | E | Annual | 10 | -29% | Sitting | 15 | -21% | Acceptable |
| **231** | A | Annual | 13 | | Standing | 18 | | Acceptable |
| | B | Annual | 9 | -31% | Sitting | 14 | -22% | Acceptable |
| | C | Annual | 11 | -15% | Sitting | 16 | -11% | Acceptable |
| | D | Annual | 10 | -23% | Sitting | 15 | -17% | Acceptable |
| | E | Annual | 9 | -31% | Sitting | 14 | -22% | Acceptable |
| **232** | A | Annual | 16 | | Walking | 21 | | Acceptable |
| | B | Annual | 14 | -12% | Standing | 20 | | Acceptable |
| | C | Annual | 16 | | Walking | 21 | | Acceptable |
| | D | Annual | 15 | | Standing | 21 | | Acceptable |
| | E | Annual | 15 | | Standing | 20 | | Acceptable |

**Table 1: Mean Speed and Effective Gust Categories - Annual**

| Location | Configuration | Season | Mean Wind Speed | | | Effective Gust Wind Speed | | |
|---|---|---|---|---|---|---|---|---|
| | | | Speed (mph) | % Change | Rating | Speed (mph) | % Change | Rating |
| **233** | A | Annual | 13 | | Standing | 18 | | Acceptable |
| | B | Annual | 10 | -23% | Sitting | 16 | -11% | Acceptable |
| | C | Annual | 12 | | Sitting | 19 | | Acceptable |
| | D | Annual | 9 | -31% | Sitting | 15 | -17% | Acceptable |
| | E | Annual | 9 | -31% | Sitting | 15 | -17% | Acceptable |
| **234** | A | Annual | 18 | | Walking | 24 | | Acceptable |
| | B | Annual | 18 | | Walking | 25 | | Acceptable |
| | C | Annual | 19 | | Walking | 25 | | Acceptable |
| | D | Annual | 15 | -17% | Standing | 22 | | Acceptable |
| | E | Annual | 14 | -22% | Standing | 22 | | Acceptable |
| **235** | A | Annual | 14 | | Standing | 21 | | Acceptable |
| | B | Annual | 12 | -14% | Sitting | 19 | | Acceptable |
| | C | Annual | 13 | | Standing | 20 | | Acceptable |
| | D | Annual | 14 | | Standing | 22 | | Acceptable |
| | E | Annual | 14 | | Standing | 22 | | Acceptable |
| **236** | A | Annual | 18 | | Walking | 25 | | Acceptable |
| | B | Annual | 16 | -11% | Walking | 23 | | Acceptable |
| | C | Annual | 17 | | Walking | 24 | | Acceptable |
| | D | Annual | 18 | | Walking | 25 | | Acceptable |
| | E | Annual | 19 | | Walking | 25 | | Acceptable |
| **237** | A | Annual | 8 | | Sitting | 13 | | Acceptable |
| | B | Annual | 8 | | Sitting | 13 | | Acceptable |
| | C | Annual | 8 | | Sitting | 13 | | Acceptable |
| | D | Annual | 8 | | Sitting | 13 | | Acceptable |
| | E | Annual | 8 | | Sitting | 13 | | Acceptable |
| **238** | A | Annual | 7 | | Sitting | 12 | | Acceptable |
| | B | Annual | 9 | 29% | Sitting | 15 | 25% | Acceptable |
| | C | Annual | 8 | 14% | Sitting | 14 | 17% | Acceptable |
| | D | Annual | 7 | | Sitting | 13 | | Acceptable |
| | E | Annual | 7 | | Sitting | 12 | | Acceptable |
| **239** | A | Annual | 17 | | Walking | 24 | | Acceptable |
| | B | Annual | 17 | | Walking | 24 | | Acceptable |
| | C | Annual | 17 | | Walking | 24 | | Acceptable |
| | D | Annual | 17 | | Walking | 24 | | Acceptable |
| | E | Annual | 18 | | Walking | 25 | | Acceptable |
| **240** | A | Annual | 19 | | Walking | 26 | | Acceptable |
| | B | Annual | 18 | | Walking | 25 | | Acceptable |
| | C | Annual | 18 | | Walking | 26 | | Acceptable |
| | D | Annual | 18 | | Walking | 26 | | Acceptable |
| | E | Annual | 18 | | Walking | 25 | | Acceptable |

**Table 1: Mean Speed and Effective Gust Categories - Annual**

| Location | Configuration | Season | Mean Wind Speed | | | Effective Gust Wind Speed | | |
|---|---|---|---|---|---|---|---|---|
| | | | Speed (mph) | % Change | Rating | Speed (mph) | % Change | Rating |
| **241** | A | Annual | 19 | | Walking | 27 | | Acceptable |
| | B | Annual | 19 | | Walking | 28 | | Acceptable |
| | C | Annual | 19 | | Walking | 28 | | Acceptable |
| | D | Annual | 19 | | Walking | 27 | | Acceptable |
| | E | Annual | 18 | | Walking | 27 | | Acceptable |
| **242** | A | Annual | 16 | | Walking | 24 | | Acceptable |
| | B | Annual | 16 | | Walking | 24 | | Acceptable |
| | C | Annual | 17 | | Walking | 25 | | Acceptable |
| | D | Annual | 17 | | Walking | 25 | | Acceptable |
| | E | Annual | 17 | | Walking | 24 | | Acceptable |
| **243** | A | Annual | 19 | | Walking | 26 | | Acceptable |
| | B | Annual | 18 | | Walking | 26 | | Acceptable |
| | C | Annual | 19 | | Walking | 27 | | Acceptable |
| | D | Annual | 20 | | Uncomfortable | 27 | | Acceptable |
| | E | Annual | 19 | | Walking | 26 | | Acceptable |
| **244** | A | Annual | 14 | | Standing | 21 | | Acceptable |
| | B | Annual | 13 | | Standing | 19 | | Acceptable |
| | C | Annual | 13 | | Standing | 20 | | Acceptable |
| | D | Annual | 15 | | Standing | 22 | | Acceptable |
| | E | Annual | 15 | | Standing | 21 | | Acceptable |
| **245** | A | Annual | 17 | | Walking | 22 | | Acceptable |
| | B | Annual | 16 | | Walking | 22 | | Acceptable |
| | C | Annual | 17 | | Walking | 23 | | Acceptable |
| | D | Annual | 17 | | Walking | 22 | | Acceptable |
| | E | Annual | 17 | | Walking | 22 | | Acceptable |
| **246** | A | Annual | 17 | | Walking | 23 | | Acceptable |
| | B | Annual | 16 | | Walking | 22 | | Acceptable |
| | C | Annual | 17 | | Walking | 23 | | Acceptable |
| | D | Annual | 17 | | Walking | 22 | | Acceptable |
| | E | Annual | 18 | | Walking | 23 | | Acceptable |
| **247** | A | Annual | 18 | | Walking | 24 | | Acceptable |
| | B | Annual | 18 | | Walking | 24 | | Acceptable |
| | C | Annual | 19 | | Walking | 25 | | Acceptable |
| | D | Annual | 18 | | Walking | 24 | | Acceptable |
| | E | Annual | 19 | | Walking | 25 | | Acceptable |
| **248** | A | Annual | 18 | | Walking | 24 | | Acceptable |
| | B | Annual | 18 | | Walking | 24 | | Acceptable |
| | C | Annual | 19 | | Walking | 25 | | Acceptable |
| | D | Annual | 19 | | Walking | 25 | | Acceptable |
| | E | Annual | 19 | | Walking | 25 | | Acceptable |

## Table 1: Mean Speed and Effective Gust Categories - Annual

| Location | Configuration | Season | Mean Wind Speed | | | Effective Gust Wind Speed | | |
|---|---|---|---|---|---|---|---|---|
| | | | Speed (mph) | % Change | Rating | Speed (mph) | % Change | Rating |

| Configurations | | Mean Wind Criteria Speed (mph) | | Effective Gust Criteria (mph) | |
|---|---|---|---|---|---|
| A | No Build | ≤ 12 | Comfortable for Sitting | ≤ 31 | Acceptable |
| B | Phase 1A Mitigation | 13 - 15 | Comfortable for Standing | > 31 | Unacceptable |
| C | Phase 1B Mitigation | 16 - 19 | Comfortable for Walking | | |
| D | Phase 2 Mitigation | 20 - 27 | Uncomfortable for Walking | | |
| E | Phase 3 Mitigation | > 27 | Dangerous Conditions | | |

1) Wind Speeds are for a 1% probability of exceedance; and,

2) % Change is based on comaprison with Configuration A and only those that are greater than 10% are listed

**Table 2: Mean Speed and Effective Gust Categories - Seasonal**

| Location | Configuration | Mean Wind Speed (mph) | | | | Effective Gust Wind Speed (mph) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Spring | Summer | Fall | Winter | Spring | Summer | Fall | Winter |
| **1** | A | 16 | 12 | 15 | 17 | 25 | 20 | 24 | 26 |
| | B | 14 | 12 | 13 | 14 | 21 | 18 | 20 | 22 |
| | C | 15 | 13 | 15 | 16 | 22 | 19 | 21 | 23 |
| | D | 20 | 18 | 19 | 21 | 27 | 24 | 27 | 29 |
| | E | 19 | 17 | 18 | 20 | 26 | 23 | 25 | 27 |
| **2** | A | 16 | 12 | 14 | 16 | 23 | 18 | 21 | 23 |
| | B | 14 | 12 | 13 | 14 | 20 | 17 | 19 | 21 |
| | C | 14 | 12 | 14 | 15 | 21 | 18 | 20 | 22 |
| | D | 16 | 13 | 15 | 17 | 23 | 20 | 22 | 25 |
| | E | 14 | 12 | 14 | 15 | 21 | 18 | 21 | 23 |
| **3** | A | 18 | 13 | 17 | 17 | 27 | 19 | 25 | 25 |
| | B | 15 | 13 | 15 | 16 | 22 | 19 | 21 | 23 |
| | C | 17 | 14 | 16 | 17 | 24 | 20 | 22 | 24 |
| | D | 15 | 11 | 14 | 15 | 22 | 17 | 20 | 23 |
| | E | 13 | 10 | 12 | 13 | 19 | 15 | 18 | 20 |
| **4** | A | 16 | 13 | 15 | 16 | 22 | 18 | 21 | 24 |
| | B | 17 | 14 | 16 | 18 | 23 | 19 | 22 | 24 |
| | C | 18 | 14 | 17 | 18 | 24 | 20 | 23 | 25 |
| | D | 16 | 12 | 15 | 17 | 22 | 17 | 21 | 23 |
| | E | 13 | 10 | 12 | 14 | 19 | 14 | 18 | 21 |
| **5** | A | 14 | 11 | 13 | 15 | 21 | 16 | 20 | 22 |
| | B | 19 | 15 | 18 | 19 | 26 | 21 | 25 | 27 |
| | C | 18 | 13 | 17 | 17 | 23 | 17 | 22 | 23 |
| | D | 15 | 11 | 14 | 16 | 21 | 16 | 20 | 23 |
| | E | 13 | 9 | 12 | 14 | 19 | 14 | 18 | 20 |
| **6** | A | 14 | 10 | 13 | 15 | 20 | 16 | 19 | 22 |
| | B | 16 | 12 | 15 | 17 | 22 | 17 | 21 | 24 |
| | C | 17 | 13 | 15 | 18 | 23 | 19 | 21 | 25 |
| | D | 17 | 13 | 15 | 18 | 23 | 18 | 21 | 25 |
| | E | 12 | 9 | 11 | 13 | 19 | 14 | 17 | 20 |
| **7** | A | 14 | 11 | 13 | 15 | 21 | 16 | 20 | 22 |
| | B | 18 | 14 | 16 | 19 | 24 | 18 | 22 | 26 |
| | C | 19 | 15 | 17 | 20 | 25 | 20 | 23 | 27 |
| | D | 19 | 15 | 17 | 20 | 25 | 20 | 23 | 26 |
| | E | 15 | 11 | 14 | 15 | 21 | 15 | 19 | 22 |
| **8** | A | 17 | 13 | 16 | 18 | 23 | 18 | 21 | 24 |
| | B | 18 | 13 | 17 | 20 | 24 | 18 | 23 | 26 |
| | C | 19 | 15 | 18 | 21 | 27 | 22 | 25 | 28 |
| | D | 19 | 14 | 17 | 20 | 25 | 19 | 23 | 27 |
| | E | 18 | 13 | 16 | 18 | 24 | 18 | 22 | 25 |

**Table 2: Mean Speed and Effective Gust Categories - Seasonal**

| Location | Configuration | Mean Wind Speed (mph) | | | | Effective Gust Wind Speed (mph) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Spring | Summer | Fall | Winter | Spring | Summer | Fall | Winter |
| **9** | A | 18 | 14 | 17 | 19 | 24 | 18 | 22 | 25 |
| | B | 18 | 13 | 16 | 19 | 24 | 18 | 22 | 26 |
| | C | 20 | 16 | 18 | 22 | 27 | 22 | 26 | 29 |
| | D | 19 | 15 | 18 | 21 | 26 | 20 | 24 | 28 |
| | E | 20 | 15 | 19 | 20 | 28 | 20 | 26 | 27 |
| **10** | A | 18 | 14 | 17 | 20 | 24 | 19 | 23 | 26 |
| | B | 18 | 13 | 16 | 19 | 24 | 18 | 22 | 26 |
| | C | 20 | 15 | 19 | 22 | 27 | 22 | 26 | 30 |
| | D | 19 | 14 | 18 | 21 | 26 | 19 | 24 | 28 |
| | E | 21 | 15 | 19 | 21 | 29 | 21 | 27 | 30 |
| **11** | A | 18 | 13 | 17 | 19 | 24 | 18 | 23 | 25 |
| | B | 18 | 13 | 16 | 19 | 24 | 18 | 22 | 25 |
| | C | 20 | 15 | 19 | 22 | 27 | 21 | 26 | 30 |
| | D | 19 | 14 | 18 | 21 | 25 | 19 | 23 | 27 |
| | E | 14 | 11 | 13 | 14 | 21 | 16 | 19 | 21 |
| **12** | A | 18 | 14 | 17 | 19 | 24 | 18 | 23 | 25 |
| | B | 18 | 13 | 17 | 19 | 24 | 18 | 22 | 25 |
| | C | 20 | 15 | 18 | 21 | 27 | 20 | 25 | 29 |
| | D | 19 | 14 | 18 | 21 | 25 | 19 | 24 | 27 |
| | E | 14 | 11 | 12 | 14 | 21 | 17 | 19 | 22 |
| **13** | A | 18 | 14 | 17 | 18 | 23 | 18 | 22 | 24 |
| | B | 18 | 13 | 17 | 19 | 24 | 18 | 22 | 25 |
| | C | 19 | 14 | 18 | 21 | 26 | 20 | 24 | 28 |
| | D | 19 | 14 | 17 | 20 | 24 | 18 | 23 | 26 |
| | E | 23 | 18 | 21 | 24 | 30 | 24 | 27 | 31 |
| **14** | A | 18 | 14 | 17 | 18 | 24 | 19 | 23 | 24 |
| | B | 18 | 13 | 17 | 19 | 24 | 18 | 23 | 26 |
| | C | 19 | 15 | 18 | 21 | 27 | 20 | 25 | 29 |
| | D | 19 | 14 | 18 | 20 | 25 | 19 | 23 | 27 |
| | E | 14 | 11 | 13 | 15 | 22 | 17 | 20 | 23 |
| **15** | A | 18 | 14 | 17 | 18 | 24 | 19 | 22 | 24 |
| | B | 18 | 13 | 17 | 19 | 24 | 18 | 22 | 25 |
| | C | 19 | 14 | 17 | 20 | 26 | 19 | 24 | 28 |
| | D | 18 | 14 | 17 | 20 | 25 | 19 | 23 | 27 |
| | E | 24 | 19 | 23 | 26 | 31 | 24 | 29 | 33 |
| **16** | A | 18 | 14 | 17 | 18 | 23 | 18 | 22 | 23 |
| | B | 18 | 13 | 16 | 18 | 24 | 17 | 22 | 25 |
| | C | 18 | 14 | 17 | 19 | 25 | 19 | 23 | 27 |
| | D | 18 | 14 | 17 | 19 | 24 | 18 | 22 | 26 |
| | E | 12 | 10 | 12 | 12 | 19 | 15 | 18 | 19 |

**Table 2: Mean Speed and Effective Gust Categories - Seasonal**

| Location | Configuration | Mean Wind Speed (mph) | | | | Effective Gust Wind Speed (mph) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Spring | Summer | Fall | Winter | Spring | Summer | Fall | Winter |
| **17** | A | 18 | 14 | 17 | 18 | 23 | 19 | 22 | 24 |
| | B | 17 | 13 | 16 | 18 | 23 | 17 | 22 | 25 |
| | C | 17 | 13 | 16 | 18 | 24 | 18 | 22 | 26 |
| | D | 17 | 13 | 16 | 17 | 23 | 17 | 21 | 24 |
| | E | 15 | 11 | 14 | 13 | 22 | 16 | 20 | 20 |
| **18** | A | 18 | 14 | 17 | 18 | 24 | 19 | 23 | 24 |
| | B | 16 | 13 | 16 | 17 | 23 | 17 | 22 | 24 |
| | C | 18 | 13 | 16 | 19 | 25 | 19 | 23 | 27 |
| | D | 18 | 13 | 16 | 19 | 25 | 19 | 23 | 27 |
| | E | 23 | 16 | 21 | 21 | 28 | 20 | 26 | 27 |
| **19** | A | 18 | 14 | 17 | 18 | 23 | 19 | 22 | 23 |
| | B | 16 | 12 | 15 | 17 | 22 | 17 | 21 | 24 |
| | C | 19 | 14 | 17 | 21 | 28 | 20 | 25 | 30 |
| | D | 18 | 14 | 17 | 20 | 27 | 20 | 24 | 30 |
| | E | 23 | 17 | 21 | 22 | 30 | 23 | 28 | 29 |
| **20** | A | 17 | 13 | 17 | 17 | 23 | 18 | 22 | 23 |
| | B | 15 | 12 | 14 | 16 | 21 | 16 | 20 | 22 |
| | C | 21 | 16 | 18 | 23 | 31 | 22 | 27 | 34 |
| | D | 20 | 15 | 18 | 23 | 29 | 22 | 26 | 32 |
| | E | 15 | 12 | 14 | 15 | 22 | 17 | 20 | 22 |
| **21** | A | 17 | 13 | 16 | 17 | 22 | 18 | 21 | 23 |
| | B | 15 | 11 | 14 | 15 | 20 | 16 | 19 | 21 |
| | C | 18 | 14 | 17 | 19 | 27 | 21 | 25 | 29 |
| | D | 18 | 14 | 16 | 19 | 26 | 20 | 24 | 28 |
| | E | 9 | 8 | 9 | 10 | 15 | 13 | 14 | 16 |
| **22** | A | 16 | 13 | 15 | 15 | 22 | 18 | 21 | 22 |
| | B | 14 | 11 | 13 | 14 | 20 | 15 | 19 | 20 |
| | C | 16 | 13 | 14 | 15 | 23 | 18 | 21 | 23 |
| | D | 15 | 13 | 14 | 15 | 22 | 18 | 20 | 22 |
| | E | 12 | 10 | 12 | 13 | 19 | 14 | 18 | 20 |
| **23** | A | 15 | 11 | 14 | 14 | 21 | 16 | 20 | 20 |
| | B | 14 | 11 | 13 | 14 | 19 | 15 | 18 | 20 |
| | C | 17 | 14 | 15 | 17 | 24 | 20 | 21 | 24 |
| | D | 17 | 14 | 15 | 17 | 24 | 20 | 21 | 24 |
| | E | 9 | 7 | 8 | 9 | 14 | 11 | 13 | 14 |
| **24** | A | 14 | 11 | 14 | 14 | 21 | 17 | 20 | 21 |
| | B | 14 | 11 | 13 | 14 | 20 | 15 | 18 | 20 |
| | C | 22 | 17 | 20 | 24 | 31 | 23 | 29 | 34 |
| | D | 22 | 16 | 19 | 23 | 30 | 23 | 27 | 32 |
| | E | 14 | 11 | 13 | 15 | 21 | 16 | 19 | 22 |

**Table 2: Mean Speed and Effective Gust Categories - Seasonal**

| Location | Configuration | Mean Wind Speed (mph) | | | | Effective Gust Wind Speed (mph) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Spring | Summer | Fall | Winter | Spring | Summer | Fall | Winter |
| **25** | A | 16 | 12 | 15 | 17 | 22 | 18 | 21 | 23 |
| | B | 16 | 12 | 15 | 17 | 22 | 16 | 20 | 23 |
| | C | 21 | 16 | 20 | 24 | 31 | 24 | 29 | 34 |
| | D | 19 | 15 | 17 | 19 | 26 | 21 | 24 | 27 |
| | E | 13 | 10 | 13 | 13 | 20 | 16 | 19 | 20 |
| **26** | A | 20 | 16 | 19 | 21 | 27 | 21 | 25 | 28 |
| | B | 17 | 13 | 16 | 19 | 24 | 18 | 22 | 26 |
| | C | 20 | 16 | 19 | 22 | 29 | 23 | 27 | 31 |
| | D | 17 | 14 | 16 | 19 | 24 | 18 | 22 | 25 |
| | E | 10 | 8 | 10 | 11 | 17 | 13 | 17 | 17 |
| **27** | A | 11 | 8 | 10 | 10 | 17 | 13 | 16 | 16 |
| | B | 15 | 11 | 14 | 15 | 21 | 16 | 19 | 22 |
| | C | 24 | 19 | 22 | 25 | 32 | 25 | 30 | 35 |
| | D | 21 | 18 | 19 | 21 | 27 | 22 | 25 | 28 |
| | E | 16 | 12 | 15 | 16 | 23 | 18 | 22 | 25 |
| **28** | A | 20 | 16 | 19 | 21 | 27 | 22 | 26 | 29 |
| | B | 18 | 13 | 17 | 20 | 25 | 19 | 23 | 28 |
| | C | 17 | 12 | 15 | 18 | 25 | 18 | 22 | 27 |
| | D | 18 | 13 | 16 | 19 | 24 | 18 | 22 | 27 |
| | E | 12 | 8 | 11 | 10 | 19 | 13 | 17 | 17 |
| **29** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 15 | 11 | 14 | 15 | 22 | 17 | 20 | 23 |
| | C | 11 | 10 | 10 | 11 | 18 | 15 | 16 | 17 |
| | D | 11 | 10 | 10 | 11 | 18 | 16 | 16 | 17 |
| | E | 10 | 8 | 9 | 10 | 16 | 13 | 15 | 15 |
| **30** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 13 | 10 | 12 | 13 | 20 | 15 | 18 | 20 |
| | C | 17 | 14 | 16 | 18 | 24 | 20 | 23 | 26 |
| | D | 13 | 10 | 11 | 13 | 19 | 15 | 17 | 19 |
| | E | 12 | 9 | 11 | 11 | 18 | 13 | 17 | 17 |
| **31** | A | 13 | 10 | 12 | 13 | 20 | 15 | 19 | 21 |
| | B | 18 | 14 | 17 | 20 | 25 | 19 | 23 | 27 |
| | C | 18 | 15 | 16 | 18 | 25 | 21 | 23 | 26 |
| | D | 15 | 12 | 13 | 16 | 22 | 17 | 20 | 23 |
| | E | 11 | 9 | 10 | 11 | 18 | 14 | 17 | 18 |
| **32** | A | 13 | 10 | 12 | 13 | 20 | 15 | 18 | 21 |
| | B | 22 | 19 | 21 | 23 | 27 | 22 | 26 | 28 |
| | C | 23 | 19 | 21 | 23 | 29 | 23 | 27 | 30 |
| | D | 22 | 17 | 20 | 22 | 28 | 22 | 26 | 29 |
| | E | 20 | 15 | 19 | 20 | 26 | 19 | 24 | 26 |

**Table 2: Mean Speed and Effective Gust Categories - Seasonal**

| Location | Configuration | Mean Wind Speed (mph) | | | | Effective Gust Wind Speed (mph) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Spring | Summer | Fall | Winter | Spring | Summer | Fall | Winter |
| **33** | A | 13 | 10 | 12 | 12 | 19 | 15 | 18 | 19 |
| | B | 15 | 10 | 14 | 14 | 21 | 15 | 20 | 20 |
| | C | 15 | 11 | 14 | 14 | 22 | 16 | 20 | 20 |
| | D | 14 | 10 | 13 | 13 | 20 | 14 | 18 | 19 |
| | E | 13 | 9 | 12 | 11 | 19 | 13 | 18 | 17 |
| **34** | A | 13 | 10 | 12 | 12 | 20 | 15 | 18 | 18 |
| | B | 18 | 12 | 17 | 16 | 25 | 18 | 23 | 23 |
| | C | 21 | 15 | 19 | 18 | 28 | 20 | 26 | 24 |
| | D | 18 | 12 | 16 | 15 | 24 | 17 | 23 | 21 |
| | E | 17 | 12 | 15 | 14 | 24 | 17 | 22 | 21 |
| **35** | A | 15 | 11 | 14 | 15 | 22 | 17 | 20 | 22 |
| | B | 16 | 12 | 15 | 17 | 24 | 17 | 22 | 25 |
| | C | 15 | 11 | 14 | 14 | 22 | 16 | 20 | 22 |
| | D | 13 | 9 | 12 | 13 | 19 | 14 | 18 | 20 |
| | E | 11 | 8 | 11 | 11 | 18 | 13 | 17 | 18 |
| **36** | A | 14 | 11 | 13 | 14 | 20 | 16 | 19 | 21 |
| | B | 18 | 13 | 17 | 17 | 24 | 17 | 22 | 24 |
| | C | 16 | 11 | 15 | 14 | 21 | 15 | 20 | 19 |
| | D | 12 | 9 | 11 | 12 | 17 | 13 | 16 | 18 |
| | E | 11 | 8 | 10 | 10 | 16 | 12 | 15 | 16 |
| **37** | A | 13 | 11 | 11 | 12 | 19 | 16 | 17 | 18 |
| | B | 25 | 19 | 24 | 24 | 32 | 25 | 30 | 32 |
| | C | 18 | 16 | 18 | 19 | 25 | 22 | 24 | 26 |
| | D | 10 | 8 | 10 | 11 | 16 | 12 | 15 | 18 |
| | E | 10 | 7 | 9 | 10 | 15 | 11 | 14 | 16 |
| **38** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 27 | 19 | 25 | 24 | 33 | 24 | 31 | 31 |
| | C | 19 | 16 | 18 | 19 | 26 | 21 | 24 | 26 |
| | D | 13 | 10 | 12 | 14 | 18 | 14 | 17 | 20 |
| | E | 12 | 9 | 11 | 13 | 17 | 13 | 16 | 18 |
| **39** | A | 11 | 8 | 10 | 12 | 16 | 13 | 15 | 17 |
| | B | 21 | 15 | 19 | 20 | 26 | 20 | 25 | 26 |
| | C | 23 | 17 | 22 | 22 | 29 | 22 | 27 | 28 |
| | D | 9 | 7 | 8 | 9 | 14 | 11 | 13 | 15 |
| | E | 9 | 7 | 8 | 9 | 14 | 10 | 13 | 14 |
| **40** | A | 9 | 7 | 8 | 8 | 13 | 10 | 12 | 13 |
| | B | 17 | 13 | 16 | 17 | 23 | 19 | 22 | 23 |
| | C | 19 | 15 | 18 | 19 | 25 | 20 | 24 | 25 |
| | D | 11 | 8 | 10 | 11 | 16 | 12 | 15 | 17 |
| | E | 10 | 7 | 9 | 9 | 15 | 11 | 14 | 15 |

**Table 2: Mean Speed and Effective Gust Categories - Seasonal**

| Location | Configuration | Mean Wind Speed (mph) | | | | Effective Gust Wind Speed (mph) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Spring | Summer | Fall | Winter | Spring | Summer | Fall | Winter |
| **41** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 14 | 12 | 14 | 15 | 21 | 17 | 20 | 22 |
| | C | 16 | 13 | 15 | 16 | 22 | 18 | 21 | 23 |
| | D | 20 | 17 | 19 | 21 | 27 | 22 | 26 | 28 |
| | E | 19 | 16 | 18 | 20 | 26 | 21 | 24 | 26 |
| **42** | A | 11 | 8 | 10 | 11 | 16 | 12 | 15 | 17 |
| | B | 14 | 12 | 14 | 15 | 21 | 18 | 20 | 22 |
| | C | 15 | 13 | 15 | 16 | 22 | 18 | 21 | 23 |
| | D | 19 | 16 | 18 | 20 | 25 | 21 | 24 | 26 |
| | E | 18 | 15 | 17 | 19 | 24 | 20 | 23 | 25 |
| **43** | A | 23 | 21 | 23 | 25 | 32 | 28 | 31 | 33 |
| | B | 15 | 12 | 14 | 16 | 21 | 18 | 20 | 22 |
| | C | 16 | 14 | 16 | 17 | 23 | 19 | 22 | 23 |
| | D | 22 | 19 | 21 | 22 | 28 | 25 | 28 | 30 |
| | E | 20 | 18 | 20 | 21 | 27 | 23 | 26 | 28 |
| **44** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 14 | 12 | 14 | 15 | 21 | 18 | 20 | 22 |
| | C | 15 | 13 | 15 | 16 | 22 | 19 | 21 | 23 |
| | D | 22 | 17 | 21 | 22 | 29 | 23 | 28 | 29 |
| | E | 21 | 16 | 20 | 20 | 28 | 22 | 27 | 28 |
| **45** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 14 | 11 | 13 | 14 | 20 | 17 | 20 | 21 |
| | C | 15 | 12 | 14 | 15 | 21 | 18 | 21 | 22 |
| | D | 20 | 18 | 20 | 21 | 29 | 25 | 27 | 30 |
| | E | 19 | 17 | 19 | 20 | 27 | 23 | 26 | 28 |
| **46** | A | 18 | 15 | 17 | 19 | 25 | 21 | 24 | 26 |
| | B | 14 | 12 | 14 | 15 | 22 | 18 | 21 | 23 |
| | C | 16 | 13 | 15 | 16 | 23 | 19 | 22 | 24 |
| | D | 22 | 19 | 21 | 23 | 30 | 25 | 29 | 31 |
| | E | 20 | 18 | 20 | 22 | 28 | 24 | 27 | 30 |
| **47** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 14 | 11 | 13 | 14 | 21 | 17 | 20 | 22 |
| | C | 15 | 12 | 15 | 16 | 22 | 18 | 21 | 23 |
| | D | 17 | 14 | 16 | 18 | 25 | 20 | 24 | 26 |
| | E | 16 | 13 | 15 | 17 | 24 | 19 | 23 | 25 |
| **48** | A | 18 | 14 | 17 | 18 | 25 | 19 | 23 | 25 |
| | B | 13 | 10 | 13 | 14 | 20 | 16 | 19 | 21 |
| | C | 15 | 11 | 14 | 16 | 22 | 17 | 21 | 23 |
| | D | 22 | 19 | 21 | 23 | 30 | 25 | 29 | 31 |
| | E | 21 | 17 | 20 | 22 | 29 | 24 | 27 | 31 |

**Table 2: Mean Speed and Effective Gust Categories - Seasonal**

| Location | Configuration | Mean Wind Speed (mph) | | | | Effective Gust Wind Speed (mph) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Spring | Summer | Fall | Winter | Spring | Summer | Fall | Winter |
| **49** | A | 3 | 2 | 3 | 3 | 5 | 3 | 4 | 5 |
| | B | 15 | 12 | 15 | 15 | 22 | 18 | 21 | 22 |
| | C | 17 | 13 | 16 | 17 | 23 | 19 | 22 | 24 |
| | D | 16 | 14 | 15 | 15 | 23 | 19 | 21 | 23 |
| | E | 15 | 13 | 14 | 15 | 22 | 18 | 20 | 22 |
| **50** | A | 16 | 12 | 15 | 16 | 23 | 17 | 22 | 23 |
| | B | 18 | 15 | 17 | 18 | 24 | 20 | 23 | 25 |
| | C | 18 | 15 | 17 | 19 | 25 | 20 | 23 | 25 |
| | D | 20 | 16 | 19 | 22 | 29 | 23 | 27 | 31 |
| | E | 19 | 16 | 19 | 21 | 28 | 22 | 26 | 30 |
| **51** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 18 | 15 | 17 | 18 | 24 | 20 | 23 | 25 |
| | C | 18 | 15 | 17 | 19 | 25 | 20 | 23 | 26 |
| | D | 17 | 15 | 16 | 17 | 26 | 22 | 24 | 26 |
| | E | 17 | 14 | 15 | 17 | 25 | 22 | 23 | 25 |
| **52** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 18 | 14 | 17 | 18 | 25 | 19 | 23 | 25 |
| | C | 19 | 14 | 18 | 18 | 26 | 20 | 24 | 25 |
| | D | 17 | 14 | 15 | 16 | 22 | 18 | 20 | 23 |
| | E | 16 | 13 | 14 | 15 | 21 | 17 | 20 | 21 |
| **53** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 20 | 14 | 19 | 18 | 26 | 19 | 25 | 25 |
| | C | 20 | 14 | 18 | 18 | 27 | 19 | 25 | 25 |
| | D | 20 | 17 | 19 | 21 | 27 | 23 | 26 | 28 |
| | E | 19 | 16 | 18 | 20 | 26 | 21 | 24 | 27 |
| **54** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 15 | 12 | 14 | 16 | 24 | 18 | 21 | 25 |
| | C | 15 | 11 | 14 | 15 | 23 | 17 | 21 | 24 |
| | D | 23 | 19 | 22 | 24 | 32 | 26 | 30 | 33 |
| | E | 22 | 18 | 21 | 23 | 30 | 25 | 29 | 31 |
| **55** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 15 | 12 | 14 | 15 | 24 | 19 | 22 | 25 |
| | C | 14 | 11 | 13 | 14 | 22 | 18 | 21 | 24 |
| | D | 19 | 16 | 18 | 19 | 26 | 22 | 25 | 27 |
| | E | 18 | 15 | 17 | 19 | 25 | 21 | 24 | 26 |
| **56** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 17 | 13 | 16 | 16 | 25 | 19 | 24 | 25 |
| | C | 18 | 13 | 17 | 16 | 25 | 19 | 23 | 25 |
| | D | 10 | 9 | 10 | 11 | 15 | 13 | 15 | 16 |
| | E | 9 | 8 | 9 | 10 | 14 | 12 | 14 | 15 |

**Table 2: Mean Speed and Effective Gust Categories - Seasonal**

| Location | Configuration | Mean Wind Speed (mph) | | | | Effective Gust Wind Speed (mph) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Spring | Summer | Fall | Winter | Spring | Summer | Fall | Winter |
| **57** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 16 | 13 | 15 | 16 | 24 | 19 | 23 | 25 |
| | C | 17 | 13 | 16 | 16 | 24 | 19 | 22 | 24 |
| | D | 12 | 9 | 11 | 13 | 18 | 13 | 17 | 19 |
| | E | 11 | 8 | 10 | 12 | 17 | 13 | 16 | 18 |
| **58** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 15 | 14 | 15 | 16 | 24 | 21 | 23 | 25 |
| | C | 15 | 13 | 15 | 16 | 23 | 20 | 22 | 24 |
| | D | 15 | 11 | 14 | 17 | 22 | 17 | 20 | 24 |
| | E | 14 | 10 | 13 | 15 | 21 | 15 | 19 | 22 |
| **59** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 15 | 12 | 14 | 15 | 23 | 19 | 22 | 25 |
| | C | 14 | 12 | 13 | 14 | 22 | 18 | 21 | 23 |
| | D | 17 | 13 | 16 | 18 | 24 | 19 | 23 | 27 |
| | E | 15 | 12 | 14 | 16 | 22 | 18 | 21 | 24 |
| **60** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 10 | 8 | 9 | 10 | 15 | 13 | 14 | 15 |
| | C | 16 | 14 | 15 | 17 | 24 | 19 | 22 | 26 |
| | D | 12 | 9 | 11 | 13 | 18 | 14 | 16 | 20 |
| | E | 11 | 8 | 10 | 12 | 16 | 13 | 15 | 17 |
| **61** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 11 | 9 | 11 | 12 | 17 | 14 | 17 | 18 |
| | C | 17 | 15 | 17 | 18 | 26 | 21 | 25 | 28 |
| | D | 14 | 11 | 13 | 14 | 20 | 16 | 18 | 20 |
| | E | 11 | 9 | 10 | 11 | 16 | 14 | 15 | 16 |
| **62** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 15 | 11 | 14 | 14 | 21 | 16 | 19 | 20 |
| | C | 9 | 8 | 9 | 9 | 14 | 12 | 14 | 15 |
| | D | 10 | 8 | 10 | 10 | 16 | 13 | 15 | 16 |
| | E | 11 | 9 | 10 | 10 | 15 | 13 | 15 | 15 |
| **63** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 16 | 11 | 15 | 15 | 23 | 16 | 22 | 21 |
| | C | 15 | 11 | 14 | 15 | 22 | 16 | 21 | 22 |
| | D | 15 | 11 | 13 | 16 | 20 | 15 | 18 | 21 |
| | E | 14 | 10 | 13 | 15 | 18 | 14 | 17 | 20 |
| **64** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 11 | 7 | 10 | 9 | 17 | 12 | 16 | 16 |
| | C | 20 | 14 | 18 | 18 | 25 | 18 | 23 | 23 |
| | D | 18 | 13 | 16 | 16 | 23 | 16 | 21 | 22 |
| | E | 12 | 9 | 11 | 12 | 18 | 13 | 16 | 18 |

**Table 2: Mean Speed and Effective Gust Categories - Seasonal**

| Location | Configuration | Mean Wind Speed (mph) | | | | Effective Gust Wind Speed (mph) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Spring | Summer | Fall | Winter | Spring | Summer | Fall | Winter |
| **65** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 14 | 10 | 13 | 13 | 21 | 16 | 20 | 20 |
| | C | -- | -- | -- | -- | -- | -- | -- | -- |
| | D | -- | -- | -- | -- | -- | -- | -- | -- |
| | E | -- | -- | -- | -- | -- | -- | -- | -- |
| **66** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 11 | 8 | 10 | 10 | 18 | 13 | 17 | 16 |
| | C | 17 | 15 | 16 | 18 | 23 | 19 | 22 | 24 |
| | D | 13 | 10 | 12 | 14 | 19 | 14 | 17 | 20 |
| | E | 11 | 9 | 11 | 12 | 16 | 13 | 15 | 17 |
| **67** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 13 | 10 | 12 | 13 | 20 | 15 | 19 | 20 |
| | C | 12 | 9 | 11 | 12 | 18 | 14 | 16 | 18 |
| | D | 12 | 9 | 11 | 12 | 18 | 14 | 16 | 17 |
| | E | 9 | 6 | 9 | 8 | 14 | 10 | 13 | 13 |
| **68** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 12 | 9 | 11 | 12 | 18 | 14 | 17 | 18 |
| | C | 17 | 12 | 16 | 16 | 21 | 15 | 20 | 21 |
| | D | 17 | 12 | 16 | 16 | 21 | 15 | 20 | 21 |
| | E | 13 | 9 | 12 | 13 | 17 | 12 | 16 | 17 |
| **69** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 12 | 9 | 11 | 12 | 18 | 14 | 17 | 19 |
| | C | 13 | 9 | 12 | 12 | 19 | 14 | 18 | 19 |
| | D | 13 | 9 | 12 | 12 | 18 | 13 | 17 | 18 |
| | E | 10 | 7 | 9 | 10 | 16 | 11 | 14 | 16 |
| **70** | A | 12 | 9 | 11 | 11 | 19 | 14 | 18 | 18 |
| | B | 13 | 10 | 12 | 13 | 19 | 15 | 18 | 19 |
| | C | 21 | 18 | 19 | 21 | 28 | 23 | 26 | 30 |
| | D | 21 | 18 | 19 | 21 | 27 | 22 | 25 | 28 |
| | E | 19 | 15 | 18 | 20 | 25 | 20 | 24 | 27 |
| **71** | A | 13 | 9 | 13 | 12 | 20 | 14 | 19 | 18 |
| | B | 13 | 10 | 12 | 13 | 18 | 14 | 17 | 19 |
| | C | 14 | 11 | 14 | 16 | 21 | 16 | 20 | 22 |
| | D | 15 | 11 | 14 | 16 | 21 | 16 | 20 | 23 |
| | E | 20 | 15 | 19 | 22 | 26 | 20 | 24 | 28 |
| **72** | A | 17 | 12 | 16 | 16 | 23 | 16 | 21 | 21 |
| | B | 13 | 10 | 12 | 13 | 19 | 15 | 18 | 20 |
| | C | 15 | 11 | 14 | 15 | 22 | 16 | 20 | 21 |
| | D | 15 | 11 | 14 | 15 | 21 | 15 | 20 | 21 |
| | E | 17 | 13 | 16 | 18 | 23 | 17 | 21 | 24 |

**Table 2: Mean Speed and Effective Gust Categories - Seasonal**

| Location | Configuration | Mean Wind Speed (mph) | | | | Effective Gust Wind Speed (mph) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Spring | Summer | Fall | Winter | Spring | Summer | Fall | Winter |
| **73** | A | 18 | 15 | 17 | 18 | 24 | 20 | 23 | 24 |
| | B | 13 | 10 | 12 | 13 | 20 | 15 | 18 | 20 |
| | C | 17 | 13 | 15 | 16 | 24 | 19 | 22 | 24 |
| | D | 16 | 12 | 15 | 16 | 23 | 18 | 21 | 23 |
| | E | 14 | 11 | 13 | 15 | 22 | 17 | 21 | 25 |
| **74** | A | 17 | 14 | 17 | 17 | 23 | 19 | 22 | 23 |
| | B | 14 | 11 | 13 | 15 | 20 | 16 | 19 | 22 |
| | C | 17 | 13 | 16 | 18 | 26 | 20 | 24 | 28 |
| | D | 17 | 13 | 16 | 18 | 26 | 19 | 23 | 27 |
| | E | 12 | 8 | 10 | 13 | 19 | 14 | 17 | 21 |
| **75** | A | 18 | 14 | 17 | 18 | 23 | 19 | 22 | 23 |
| | B | 15 | 12 | 14 | 16 | 22 | 16 | 20 | 23 |
| | C | 18 | 14 | 16 | 20 | 28 | 20 | 25 | 31 |
| | D | 18 | 14 | 16 | 20 | 27 | 20 | 24 | 30 |
| | E | 6 | 4 | 5 | 5 | 7 | 6 | 7 | 7 |
| **76** | A | 17 | 13 | 17 | 17 | 23 | 18 | 22 | 23 |
| | B | 16 | 13 | 15 | 17 | 22 | 17 | 21 | 23 |
| | C | 17 | 13 | 16 | 18 | 25 | 19 | 23 | 26 |
| | D | 17 | 13 | 16 | 18 | 24 | 19 | 23 | 26 |
| | E | 18 | 14 | 17 | 17 | 26 | 19 | 25 | 26 |
| **77** | A | 18 | 14 | 17 | 18 | 24 | 19 | 23 | 24 |
| | B | 17 | 13 | 16 | 18 | 23 | 18 | 22 | 25 |
| | C | 16 | 13 | 15 | 18 | 25 | 19 | 23 | 27 |
| | D | 17 | 13 | 16 | 18 | 25 | 19 | 23 | 27 |
| | E | 13 | 9 | 13 | 13 | 19 | 14 | 19 | 20 |
| **78** | A | 17 | 14 | 16 | 17 | 23 | 18 | 22 | 23 |
| | B | 17 | 13 | 16 | 19 | 24 | 19 | 23 | 26 |
| | C | 16 | 13 | 15 | 16 | 23 | 19 | 22 | 25 |
| | D | 16 | 13 | 15 | 17 | 24 | 19 | 22 | 25 |
| | E | 17 | 12 | 17 | 16 | 23 | 16 | 22 | 22 |
| **79** | A | 17 | 14 | 17 | 17 | 23 | 18 | 22 | 23 |
| | B | 17 | 14 | 14 | 16 | 23 | 19 | 20 | 24 |
| | C | 14 | 12 | 12 | 13 | 21 | 17 | 18 | 20 |
| | D | 14 | 12 | 12 | 13 | 21 | 17 | 19 | 21 |
| | E | 7 | 5 | 7 | 7 | 11 | 9 | 11 | 12 |
| **80** | A | 17 | 13 | 17 | 17 | 23 | 18 | 22 | 23 |
| | B | 14 | 12 | 12 | 14 | 21 | 17 | 18 | 21 |
| | C | 11 | 9 | 10 | 12 | 18 | 15 | 16 | 19 |
| | D | 11 | 9 | 10 | 11 | 18 | 15 | 16 | 18 |
| | E | 13 | 11 | 12 | 13 | 20 | 17 | 19 | 20 |

**Table 2: Mean Speed and Effective Gust Categories - Seasonal**

| Location | Configuration | Mean Wind Speed (mph) | | | | Effective Gust Wind Speed (mph) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Spring | Summer | Fall | Winter | Spring | Summer | Fall | Winter |
| **81** | A | 17 | 13 | 17 | 17 | 23 | 18 | 22 | 23 |
| | B | 13 | 10 | 12 | 13 | 20 | 15 | 18 | 20 |
| | C | 12 | 9 | 11 | 13 | 19 | 14 | 17 | 20 |
| | D | 11 | 9 | 10 | 12 | 18 | 14 | 16 | 19 |
| | E | 10 | 8 | 9 | 10 | 15 | 12 | 14 | 15 |
| **82** | A | 16 | 12 | 15 | 15 | 22 | 16 | 21 | 22 |
| | B | 17 | 15 | 16 | 17 | 24 | 21 | 23 | 25 |
| | C | 13 | 9 | 12 | 13 | 19 | 14 | 17 | 18 |
| | D | 13 | 9 | 12 | 12 | 18 | 13 | 17 | 18 |
| | E | 10 | 8 | 10 | 10 | 15 | 11 | 14 | 15 |
| **83** | A | 17 | 13 | 16 | 16 | 22 | 17 | 21 | 22 |
| | B | 15 | 13 | 14 | 15 | 22 | 19 | 21 | 22 |
| | C | 21 | 16 | 20 | 22 | 29 | 23 | 28 | 31 |
| | D | 20 | 15 | 18 | 20 | 27 | 21 | 25 | 29 |
| | E | 13 | 10 | 13 | 14 | 20 | 15 | 19 | 22 |
| **84** | A | 18 | 14 | 17 | 18 | 24 | 19 | 22 | 24 |
| | B | 14 | 11 | 13 | 14 | 20 | 17 | 19 | 21 |
| | C | 19 | 14 | 17 | 18 | 26 | 21 | 24 | 26 |
| | D | 18 | 13 | 16 | 17 | 25 | 19 | 23 | 24 |
| | E | 18 | 13 | 16 | 19 | 26 | 19 | 24 | 29 |
| **85** | A | 19 | 14 | 18 | 18 | 25 | 19 | 23 | 24 |
| | B | 13 | 10 | 12 | 13 | 20 | 17 | 19 | 20 |
| | C | 19 | 13 | 18 | 17 | 25 | 18 | 23 | 23 |
| | D | 18 | 13 | 17 | 17 | 24 | 17 | 22 | 22 |
| | E | 17 | 12 | 16 | 17 | 22 | 16 | 21 | 23 |
| **86** | A | 16 | 12 | 15 | 15 | 22 | 16 | 21 | 21 |
| | B | 15 | 13 | 14 | 15 | 22 | 20 | 21 | 23 |
| | C | 27 | 20 | 25 | 26 | 32 | 24 | 30 | 31 |
| | D | 27 | 19 | 24 | 25 | 32 | 23 | 29 | 30 |
| | E | 15 | 11 | 14 | 15 | 20 | 15 | 19 | 21 |
| **87** | A | 10 | 8 | 10 | 11 | 16 | 13 | 15 | 17 |
| | B | 10 | 8 | 9 | 10 | 16 | 14 | 15 | 17 |
| | C | 8 | 7 | 8 | 8 | 13 | 11 | 12 | 13 |
| | D | 8 | 6 | 7 | 8 | 12 | 10 | 12 | 13 |
| | E | 8 | 7 | 8 | 9 | 13 | 11 | 12 | 14 |
| **88** | A | 11 | 9 | 10 | 11 | 17 | 14 | 16 | 18 |
| | B | 10 | 8 | 9 | 10 | 16 | 13 | 15 | 16 |
| | C | -- | -- | -- | -- | -- | -- | -- | -- |
| | D | -- | -- | -- | -- | -- | -- | -- | -- |
| | E | -- | -- | -- | -- | -- | -- | -- | -- |

**Table 2: Mean Speed and Effective Gust Categories - Seasonal**

| Location | Configuration | Mean Wind Speed (mph) | | | | Effective Gust Wind Speed (mph) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Spring | Summer | Fall | Winter | Spring | Summer | Fall | Winter |
| **89** | A | 10 | 9 | 10 | 10 | 17 | 14 | 15 | 16 |
| | B | 12 | 9 | 11 | 12 | 19 | 15 | 18 | 19 |
| | C | -- | -- | -- | -- | -- | -- | -- | -- |
| | D | -- | -- | -- | -- | -- | -- | -- | -- |
| | E | -- | -- | -- | -- | -- | -- | -- | -- |
| **90** | A | 12 | 10 | 11 | 12 | 19 | 15 | 17 | 18 |
| | B | 12 | 9 | 12 | 12 | 18 | 14 | 17 | 18 |
| | C | 13 | 10 | 12 | 14 | 20 | 15 | 18 | 21 |
| | D | 14 | 11 | 13 | 16 | 21 | 16 | 19 | 23 |
| | E | 13 | 10 | 12 | 14 | 19 | 14 | 18 | 21 |
| **91** | A | 9 | 7 | 8 | 9 | 15 | 11 | 14 | 14 |
| | B | 11 | 9 | 10 | 11 | 17 | 13 | 16 | 17 |
| | C | 28 | 20 | 25 | 30 | 35 | 27 | 33 | 39 |
| | D | 25 | 18 | 23 | 28 | 33 | 24 | 30 | 36 |
| | E | 22 | 16 | 20 | 25 | 29 | 22 | 26 | 32 |
| **92** | A | 11 | 8 | 10 | 10 | 17 | 12 | 15 | 15 |
| | B | 17 | 13 | 16 | 16 | 23 | 17 | 22 | 23 |
| | C | 20 | 16 | 19 | 22 | 29 | 23 | 27 | 31 |
| | D | 21 | 16 | 19 | 23 | 29 | 21 | 26 | 32 |
| | E | 20 | 15 | 18 | 22 | 27 | 20 | 24 | 29 |
| **93** | A | 11 | 8 | 10 | 10 | 16 | 12 | 15 | 15 |
| | B | 17 | 12 | 16 | 16 | 22 | 17 | 21 | 22 |
| | C | 22 | 18 | 21 | 24 | 30 | 24 | 29 | 33 |
| | D | 21 | 15 | 19 | 23 | 29 | 21 | 27 | 32 |
| | E | 18 | 13 | 17 | 20 | 26 | 19 | 23 | 28 |
| **94** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 11 | 8 | 11 | 11 | 17 | 13 | 16 | 17 |
| | C | 13 | 10 | 12 | 14 | 20 | 15 | 18 | 21 |
| | D | 13 | 10 | 12 | 14 | 19 | 14 | 18 | 20 |
| | E | 11 | 8 | 10 | 12 | 16 | 12 | 15 | 18 |
| **95** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 13 | 9 | 12 | 12 | 19 | 14 | 19 | 18 |
| | C | 13 | 11 | 13 | 14 | 20 | 17 | 19 | 21 |
| | D | 15 | 11 | 14 | 16 | 23 | 17 | 21 | 25 |
| | E | 14 | 10 | 13 | 15 | 21 | 16 | 20 | 24 |
| **96** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 6 | 4 | 5 | 6 | 9 | 7 | 9 | 10 |
| | C | 5 | 3 | 4 | 5 | 8 | 6 | 7 | 8 |
| | D | 5 | 4 | 5 | 6 | 8 | 7 | 8 | 9 |
| | E | 5 | 4 | 5 | 5 | 8 | 6 | 7 | 8 |

**Table 2: Mean Speed and Effective Gust Categories - Seasonal**

| Location | Configuration | Mean Wind Speed (mph) | | | | Effective Gust Wind Speed (mph) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Spring | Summer | Fall | Winter | Spring | Summer | Fall | Winter |
| **97** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 15 | 11 | 13 | 15 | 23 | 18 | 21 | 25 |
| | C | 15 | 12 | 14 | 15 | 23 | 17 | 21 | 24 |
| | D | 21 | 18 | 20 | 22 | 28 | 24 | 27 | 29 |
| | E | 20 | 18 | 20 | 21 | 27 | 23 | 26 | 28 |
| **98** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 16 | 12 | 14 | 17 | 26 | 19 | 23 | 28 |
| | C | 13 | 10 | 12 | 13 | 21 | 16 | 19 | 22 |
| | D | 18 | 16 | 17 | 19 | 26 | 22 | 24 | 26 |
| | E | 18 | 15 | 17 | 19 | 25 | 21 | 24 | 26 |
| **99** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 18 | 14 | 17 | 18 | 24 | 19 | 23 | 25 |
| | C | 13 | 10 | 12 | 14 | 20 | 16 | 19 | 22 |
| | D | 17 | 14 | 16 | 18 | 24 | 20 | 23 | 25 |
| | E | 16 | 14 | 15 | 17 | 23 | 19 | 22 | 24 |
| **100** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 16 | 13 | 15 | 16 | 24 | 19 | 22 | 24 |
| | C | 15 | 12 | 14 | 16 | 23 | 18 | 22 | 25 |
| | D | 20 | 17 | 19 | 21 | 28 | 23 | 26 | 29 |
| | E | 19 | 16 | 18 | 21 | 27 | 22 | 25 | 28 |
| **101** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 18 | 13 | 17 | 17 | 25 | 19 | 24 | 25 |
| | C | 20 | 14 | 19 | 18 | 28 | 20 | 25 | 27 |
| | D | 20 | 17 | 19 | 20 | 27 | 23 | 26 | 28 |
| | E | 20 | 17 | 18 | 19 | 27 | 22 | 25 | 27 |
| **102** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 21 | 15 | 19 | 18 | 28 | 20 | 26 | 25 |
| | C | 21 | 15 | 19 | 18 | 28 | 20 | 26 | 26 |
| | D | 22 | 18 | 21 | 22 | 32 | 27 | 30 | 33 |
| | E | 21 | 18 | 20 | 22 | 31 | 26 | 29 | 32 |
| **103** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 19 | 14 | 18 | 18 | 26 | 19 | 24 | 25 |
| | C | 20 | 14 | 18 | 18 | 27 | 20 | 25 | 25 |
| | D | 22 | 18 | 21 | 23 | 30 | 25 | 29 | 32 |
| | E | 22 | 18 | 20 | 23 | 30 | 24 | 28 | 32 |
| **104** | A | 16 | 12 | 15 | 18 | 25 | 18 | 22 | 27 |
| | B | 18 | 14 | 17 | 18 | 25 | 19 | 23 | 24 |
| | C | 18 | 14 | 17 | 17 | 25 | 19 | 23 | 25 |
| | D | 18 | 14 | 17 | 20 | 28 | 21 | 26 | 30 |
| | E | 18 | 14 | 17 | 20 | 28 | 21 | 25 | 30 |

**Table 2: Mean Speed and Effective Gust Categories - Seasonal**

| Location | Configuration | Mean Wind Speed (mph) | | | | Effective Gust Wind Speed (mph) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Spring | Summer | Fall | Winter | Spring | Summer | Fall | Winter |
| **105** | A | 19 | 15 | 18 | 20 | 28 | 21 | 26 | 30 |
| | B | 18 | 14 | 17 | 18 | 24 | 19 | 23 | 25 |
| | C | 18 | 14 | 17 | 18 | 25 | 20 | 24 | 25 |
| | D | 15 | 12 | 14 | 16 | 23 | 18 | 22 | 25 |
| | E | 15 | 11 | 13 | 16 | 23 | 18 | 21 | 25 |
| **106** | A | 19 | 14 | 17 | 21 | 27 | 20 | 24 | 30 |
| | B | 19 | 14 | 18 | 18 | 26 | 19 | 24 | 24 |
| | C | 19 | 14 | 18 | 17 | 26 | 19 | 24 | 25 |
| | D | 8 | 7 | 8 | 9 | 14 | 11 | 13 | 14 |
| | E | 8 | 7 | 8 | 9 | 14 | 11 | 13 | 14 |
| **107** | A | 16 | 12 | 14 | 17 | 25 | 19 | 23 | 28 |
| | B | 19 | 14 | 18 | 17 | 25 | 19 | 24 | 24 |
| | C | 19 | 13 | 17 | 17 | 26 | 19 | 24 | 25 |
| | D | 15 | 12 | 14 | 15 | 23 | 18 | 21 | 24 |
| | E | 15 | 12 | 14 | 15 | 22 | 18 | 20 | 23 |
| **108** | A | 19 | 14 | 17 | 20 | 28 | 21 | 25 | 30 |
| | B | 18 | 13 | 17 | 17 | 25 | 18 | 23 | 23 |
| | C | 18 | 13 | 17 | 17 | 25 | 18 | 24 | 24 |
| | D | 18 | 13 | 16 | 19 | 26 | 20 | 24 | 28 |
| | E | 17 | 13 | 16 | 18 | 25 | 19 | 23 | 27 |
| **109** | A | 15 | 11 | 13 | 16 | 23 | 18 | 21 | 25 |
| | B | 19 | 14 | 18 | 17 | 25 | 18 | 24 | 23 |
| | C | 19 | 13 | 17 | 17 | 26 | 19 | 24 | 24 |
| | D | 18 | 14 | 16 | 19 | 27 | 20 | 24 | 28 |
| | E | 18 | 14 | 16 | 18 | 26 | 20 | 24 | 27 |
| **110** | A | 13 | 10 | 12 | 14 | 21 | 17 | 20 | 23 |
| | B | 19 | 13 | 18 | 17 | 25 | 18 | 24 | 23 |
| | C | 18 | 13 | 17 | 17 | 26 | 18 | 23 | 24 |
| | D | -- | -- | -- | -- | -- | -- | -- | -- |
| | E | -- | -- | -- | -- | -- | -- | -- | -- |
| **111** | A | 12 | 10 | 11 | 13 | 20 | 16 | 18 | 20 |
| | B | 20 | 14 | 19 | 17 | 26 | 19 | 25 | 24 |
| | C | 19 | 13 | 17 | 17 | 26 | 19 | 25 | 25 |
| | D | -- | -- | -- | -- | -- | -- | -- | -- |
| | E | -- | -- | -- | -- | -- | -- | -- | -- |
| **112** | A | 12 | 9 | 11 | 14 | 21 | 16 | 19 | 23 |
| | B | 19 | 13 | 17 | 16 | 25 | 18 | 23 | 23 |
| | C | 18 | 12 | 16 | 16 | 25 | 18 | 23 | 24 |
| | D | -- | -- | -- | -- | -- | -- | -- | -- |
| | E | -- | -- | -- | -- | -- | -- | -- | -- |

**Table 2: Mean Speed and Effective Gust Categories - Seasonal**

| Location | Configuration | Mean Wind Speed (mph) | | | | Effective Gust Wind Speed (mph) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Spring | Summer | Fall | Winter | Spring | Summer | Fall | Winter |
| **113** | A | 15 | 11 | 14 | 16 | 23 | 18 | 21 | 25 |
| | B | 18 | 13 | 17 | 16 | 25 | 18 | 23 | 22 |
| | C | 17 | 12 | 16 | 16 | 25 | 18 | 23 | 23 |
| | D | -- | -- | -- | -- | -- | -- | -- | -- |
| | E | -- | -- | -- | -- | -- | -- | -- | -- |
| **114** | A | 16 | 12 | 14 | 17 | 24 | 18 | 22 | 26 |
| | B | 19 | 13 | 17 | 16 | 25 | 18 | 23 | 23 |
| | C | 17 | 13 | 16 | 16 | 25 | 18 | 23 | 23 |
| | D | 23 | 18 | 21 | 25 | 33 | 24 | 30 | 35 |
| | E | 23 | 18 | 21 | 24 | 32 | 24 | 29 | 33 |
| **115** | A | 14 | 10 | 12 | 15 | 22 | 17 | 21 | 25 |
| | B | 18 | 13 | 16 | 15 | 24 | 18 | 23 | 22 |
| | C | 17 | 12 | 15 | 15 | 24 | 18 | 22 | 23 |
| | D | 16 | 12 | 14 | 18 | 27 | 20 | 24 | 29 |
| | E | 16 | 12 | 14 | 17 | 26 | 20 | 24 | 28 |
| **116** | A | 17 | 12 | 15 | 18 | 25 | 19 | 23 | 28 |
| | B | 18 | 13 | 16 | 16 | 25 | 18 | 23 | 23 |
| | C | 17 | 12 | 16 | 15 | 24 | 18 | 23 | 23 |
| | D | 17 | 13 | 16 | 18 | 24 | 19 | 23 | 27 |
| | E | 17 | 13 | 16 | 18 | 24 | 19 | 23 | 26 |
| **117** | A | 15 | 11 | 14 | 17 | 24 | 17 | 21 | 26 |
| | B | 18 | 14 | 17 | 17 | 25 | 19 | 23 | 23 |
| | C | 17 | 13 | 16 | 16 | 25 | 19 | 23 | 23 |
| | D | 21 | 16 | 19 | 23 | 31 | 23 | 28 | 34 |
| | E | 21 | 16 | 19 | 23 | 30 | 23 | 27 | 33 |
| **118** | A | 17 | 12 | 15 | 19 | 26 | 19 | 23 | 28 |
| | B | 16 | 12 | 15 | 15 | 23 | 18 | 22 | 22 |
| | C | 16 | 12 | 14 | 14 | 23 | 17 | 21 | 22 |
| | D | 19 | 15 | 17 | 20 | 28 | 21 | 25 | 30 |
| | E | 20 | 15 | 18 | 20 | 28 | 21 | 25 | 29 |
| **119** | A | 14 | 10 | 12 | 15 | 24 | 17 | 21 | 26 |
| | B | 16 | 12 | 15 | 14 | 23 | 17 | 21 | 22 |
| | C | 15 | 11 | 14 | 14 | 23 | 17 | 21 | 22 |
| | D | -- | -- | -- | -- | -- | -- | -- | -- |
| | E | -- | -- | -- | -- | -- | -- | -- | -- |
| **120** | A | 17 | 12 | 15 | 19 | 26 | 19 | 24 | 29 |
| | B | 15 | 12 | 14 | 15 | 22 | 17 | 21 | 22 |
| | C | 14 | 12 | 14 | 14 | 22 | 17 | 20 | 21 |
| | D | 23 | 17 | 21 | 25 | 32 | 24 | 29 | 34 |
| | E | 23 | 17 | 21 | 25 | 31 | 23 | 28 | 34 |

**Table 2: Mean Speed and Effective Gust Categories - Seasonal**

| Location | Configuration | Mean Wind Speed (mph) | | | | Effective Gust Wind Speed (mph) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Spring | Summer | Fall | Winter | Spring | Summer | Fall | Winter |
| **121** | A | 15 | 12 | 14 | 16 | 22 | 17 | 21 | 24 |
| | B | 16 | 13 | 15 | 16 | 23 | 18 | 21 | 23 |
| | C | 15 | 12 | 14 | 15 | 22 | 17 | 21 | 22 |
| | D | 19 | 14 | 18 | 21 | 28 | 21 | 26 | 30 |
| | E | 19 | 14 | 18 | 20 | 27 | 21 | 25 | 30 |
| **122** | A | 22 | 16 | 20 | 24 | 30 | 23 | 28 | 33 |
| | B | 11 | 9 | 11 | 12 | 18 | 14 | 17 | 19 |
| | C | 11 | 8 | 10 | 11 | 18 | 13 | 16 | 18 |
| | D | 17 | 14 | 16 | 18 | 25 | 20 | 25 | 28 |
| | E | 17 | 14 | 16 | 18 | 26 | 20 | 24 | 28 |
| **123** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 13 | 10 | 12 | 13 | 20 | 15 | 18 | 20 |
| | C | 13 | 9 | 12 | 13 | 20 | 14 | 18 | 21 |
| | D | 9 | 7 | 9 | 10 | 16 | 13 | 14 | 17 |
| | E | 9 | 7 | 9 | 10 | 15 | 12 | 14 | 16 |
| **124** | A | 15 | 11 | 14 | 15 | 21 | 15 | 19 | 20 |
| | B | 13 | 10 | 13 | 14 | 19 | 14 | 18 | 20 |
| | C | 13 | 10 | 13 | 14 | 19 | 14 | 18 | 21 |
| | D | 15 | 13 | 14 | 15 | 23 | 19 | 21 | 24 |
| | E | 15 | 13 | 14 | 15 | 22 | 18 | 21 | 23 |
| **125** | A | 17 | 14 | 16 | 17 | 23 | 19 | 22 | 24 |
| | B | 17 | 13 | 16 | 19 | 25 | 18 | 23 | 27 |
| | C | 18 | 14 | 17 | 19 | 25 | 19 | 23 | 28 |
| | D | 15 | 13 | 14 | 16 | 22 | 19 | 21 | 23 |
| | E | 15 | 13 | 14 | 15 | 21 | 18 | 20 | 22 |
| **126** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 15 | 11 | 13 | 16 | 23 | 18 | 21 | 25 |
| | C | 15 | 12 | 14 | 17 | 24 | 18 | 22 | 26 |
| | D | 18 | 16 | 17 | 18 | 25 | 22 | 24 | 26 |
| | E | 17 | 16 | 17 | 18 | 24 | 21 | 23 | 25 |
| **127** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 15 | 11 | 13 | 16 | 24 | 18 | 22 | 26 |
| | C | 15 | 11 | 13 | 16 | 24 | 18 | 22 | 27 |
| | D | 18 | 16 | 17 | 18 | 26 | 23 | 25 | 27 |
| | E | 17 | 16 | 17 | 18 | 25 | 23 | 24 | 26 |
| **128** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 15 | 11 | 13 | 16 | 24 | 18 | 22 | 26 |
| | C | 14 | 10 | 13 | 15 | 23 | 17 | 21 | 25 |
| | D | 13 | 10 | 12 | 14 | 19 | 15 | 18 | 19 |
| | E | 14 | 10 | 13 | 14 | 20 | 15 | 18 | 20 |

**Table 2: Mean Speed and Effective Gust Categories - Seasonal**

| Location | Configuration | Mean Wind Speed (mph) | | | | Effective Gust Wind Speed (mph) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Spring | Summer | Fall | Winter | Spring | Summer | Fall | Winter |
| **129** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 15 | 11 | 14 | 15 | 22 | 16 | 21 | 23 |
| | C | 16 | 12 | 15 | 16 | 24 | 18 | 22 | 25 |
| | D | 23 | 17 | 21 | 25 | 31 | 24 | 29 | 34 |
| | E | 23 | 17 | 21 | 25 | 31 | 23 | 28 | 34 |
| **130** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 17 | 12 | 15 | 15 | 23 | 16 | 21 | 21 |
| | C | 16 | 11 | 14 | 15 | 23 | 17 | 21 | 22 |
| | D | 16 | 12 | 14 | 17 | 24 | 17 | 21 | 25 |
| | E | 16 | 12 | 14 | 17 | 23 | 17 | 21 | 24 |
| **131** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 14 | 11 | 13 | 15 | 23 | 18 | 21 | 25 |
| | C | 13 | 10 | 12 | 14 | 21 | 16 | 19 | 23 |
| | D | 16 | 12 | 15 | 15 | 24 | 18 | 22 | 24 |
| | E | 17 | 12 | 16 | 16 | 25 | 18 | 23 | 24 |
| **132** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 15 | 11 | 13 | 16 | 24 | 18 | 21 | 25 |
| | C | 15 | 11 | 14 | 16 | 23 | 17 | 21 | 25 |
| | D | 12 | 10 | 12 | 12 | 19 | 15 | 17 | 19 |
| | E | 13 | 10 | 13 | 13 | 19 | 15 | 18 | 19 |
| **133** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 20 | 14 | 18 | 17 | 26 | 18 | 24 | 24 |
| | C | 19 | 14 | 18 | 18 | 27 | 20 | 25 | 26 |
| | D | -- | -- | -- | -- | -- | -- | -- | -- |
| | E | -- | -- | -- | -- | -- | -- | -- | -- |
| **134** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 18 | 13 | 17 | 17 | 24 | 18 | 23 | 24 |
| | C | 18 | 13 | 17 | 18 | 26 | 19 | 24 | 27 |
| | D | -- | -- | -- | -- | -- | -- | -- | -- |
| | E | -- | -- | -- | -- | -- | -- | -- | -- |
| **135** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 14 | 11 | 12 | 14 | 22 | 18 | 20 | 24 |
| | C | 12 | 10 | 12 | 13 | 20 | 16 | 19 | 21 |
| | D | 23 | 19 | 22 | 24 | 31 | 26 | 30 | 33 |
| | E | 22 | 18 | 21 | 24 | 30 | 25 | 29 | 33 |
| **136** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 13 | 10 | 11 | 13 | 19 | 14 | 17 | 18 |
| | C | 8 | 6 | 7 | 8 | 12 | 10 | 12 | 13 |
| | D | 8 | 6 | 8 | 9 | 13 | 10 | 12 | 14 |
| | E | 8 | 6 | 7 | 8 | 12 | 9 | 11 | 13 |

**Table 2: Mean Speed and Effective Gust Categories - Seasonal**

| Location | Configuration | Mean Wind Speed (mph) | | | | Effective Gust Wind Speed (mph) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Spring | Summer | Fall | Winter | Spring | Summer | Fall | Winter |
| **137** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 19 | 14 | 17 | 18 | 26 | 19 | 24 | 25 |
| | C | 10 | 8 | 10 | 11 | 16 | 13 | 15 | 17 |
| | D | 12 | 9 | 12 | 13 | 20 | 15 | 19 | 21 |
| | E | 12 | 9 | 11 | 13 | 19 | 14 | 18 | 21 |
| **138** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 22 | 15 | 20 | 20 | 27 | 19 | 26 | 26 |
| | C | 17 | 12 | 15 | 19 | 26 | 19 | 24 | 29 |
| | D | 18 | 13 | 16 | 21 | 27 | 20 | 25 | 30 |
| | E | 17 | 12 | 15 | 18 | 25 | 18 | 22 | 28 |
| **139** | A | 7 | 5 | 7 | 7 | 12 | 9 | 11 | 12 |
| | B | 15 | 11 | 14 | 14 | 21 | 16 | 20 | 21 |
| | C | 11 | 9 | 10 | 11 | 17 | 14 | 16 | 18 |
| | D | 10 | 8 | 9 | 10 | 16 | 12 | 15 | 16 |
| | E | 10 | 9 | 9 | 9 | 15 | 13 | 14 | 15 |
| **140** | A | 7 | 5 | 7 | 7 | 12 | 9 | 12 | 11 |
| | B | -- | -- | -- | -- | -- | -- | -- | -- |
| | C | -- | -- | -- | -- | -- | -- | -- | -- |
| | D | -- | -- | -- | -- | -- | -- | -- | -- |
| | E | -- | -- | -- | -- | -- | -- | -- | -- |
| **141** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 13 | 10 | 13 | 14 | 21 | 15 | 20 | 21 |
| | C | 9 | 7 | 8 | 9 | 15 | 11 | 13 | 16 |
| | D | 12 | 9 | 11 | 13 | 18 | 14 | 17 | 20 |
| | E | 12 | 9 | 11 | 13 | 18 | 14 | 17 | 20 |
| **142** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 21 | 15 | 20 | 20 | 28 | 20 | 27 | 27 |
| | C | 15 | 12 | 14 | 16 | 22 | 17 | 20 | 24 |
| | D | 18 | 14 | 16 | 20 | 25 | 19 | 23 | 27 |
| | E | 18 | 13 | 16 | 19 | 24 | 18 | 22 | 26 |
| **143** | A | 7 | 5 | 7 | 7 | 12 | 8 | 11 | 11 |
| | B | -- | -- | -- | -- | -- | -- | -- | -- |
| | C | -- | -- | -- | -- | -- | -- | -- | -- |
| | D | -- | -- | -- | -- | -- | -- | -- | -- |
| | E | -- | -- | -- | -- | -- | -- | -- | -- |
| **144** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 16 | 12 | 15 | 18 | 23 | 17 | 22 | 26 |
| | C | 12 | 9 | 11 | 13 | 18 | 14 | 18 | 20 |
| | D | 10 | 8 | 9 | 10 | 15 | 13 | 14 | 15 |
| | E | 9 | 8 | 9 | 10 | 14 | 12 | 13 | 14 |

**Table 2: Mean Speed and Effective Gust Categories - Seasonal**

| Location | Configuration | Mean Wind Speed (mph) | | | | Effective Gust Wind Speed (mph) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Spring | Summer | Fall | Winter | Spring | Summer | Fall | Winter |
| **145** | A | 11 | 8 | 10 | 11 | 16 | 12 | 15 | 16 |
| | B | 9 | 7 | 8 | 10 | 15 | 11 | 13 | 16 |
| | C | 10 | 8 | 10 | 12 | 15 | 11 | 14 | 17 |
| | D | 8 | 6 | 8 | 9 | 12 | 9 | 11 | 13 |
| | E | 8 | 6 | 7 | 8 | 11 | 9 | 10 | 12 |
| **146** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 18 | 14 | 18 | 19 | 25 | 18 | 24 | 25 |
| | C | 18 | 14 | 17 | 19 | 25 | 20 | 23 | 26 |
| | D | 18 | 14 | 17 | 19 | 24 | 19 | 23 | 26 |
| | E | 17 | 13 | 16 | 18 | 23 | 18 | 21 | 24 |
| **147** | A | 6 | 5 | 6 | 6 | 11 | 9 | 10 | 11 |
| | B | 16 | 12 | 15 | 17 | 23 | 18 | 21 | 25 |
| | C | 12 | 10 | 11 | 13 | 19 | 15 | 18 | 20 |
| | D | 11 | 10 | 10 | 11 | 16 | 15 | 15 | 17 |
| | E | 10 | 9 | 10 | 11 | 15 | 14 | 15 | 16 |
| **148** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 8 | 7 | 8 | 8 | 12 | 11 | 12 | 13 |
| | C | 7 | 6 | 7 | 8 | 11 | 9 | 10 | 12 |
| | D | 8 | 7 | 7 | 8 | 11 | 10 | 11 | 12 |
| | E | 7 | 6 | 6 | 7 | 10 | 9 | 10 | 11 |
| **149** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 17 | 14 | 16 | 18 | 24 | 19 | 23 | 26 |
| | C | 20 | 16 | 18 | 20 | 25 | 20 | 23 | 25 |
| | D | 18 | 15 | 17 | 18 | 24 | 19 | 22 | 24 |
| | E | 18 | 15 | 16 | 17 | 23 | 19 | 21 | 22 |
| **150** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 16 | 13 | 15 | 16 | 21 | 18 | 21 | 22 |
| | C | 19 | 15 | 17 | 18 | 24 | 19 | 22 | 24 |
| | D | 17 | 14 | 15 | 17 | 22 | 18 | 21 | 23 |
| | E | 16 | 14 | 15 | 16 | 21 | 18 | 20 | 21 |
| **151** | A | 10 | 8 | 9 | 10 | 14 | 11 | 13 | 14 |
| | B | 13 | 10 | 13 | 14 | 19 | 15 | 18 | 21 |
| | C | 15 | 12 | 14 | 16 | 22 | 16 | 20 | 24 |
| | D | 12 | 10 | 12 | 13 | 18 | 15 | 17 | 19 |
| | E | 11 | 10 | 11 | 12 | 16 | 14 | 16 | 17 |
| **152** | A | 18 | 15 | 17 | 18 | 24 | 21 | 23 | 24 |
| | B | 9 | 7 | 9 | 10 | 15 | 11 | 14 | 16 |
| | C | 10 | 8 | 9 | 11 | 16 | 13 | 14 | 16 |
| | D | 14 | 10 | 12 | 15 | 22 | 16 | 19 | 23 |
| | E | 14 | 10 | 12 | 15 | 21 | 15 | 19 | 23 |

**Table 2: Mean Speed and Effective Gust Categories - Seasonal**

| Location | Configuration | Mean Wind Speed (mph) | | | | Effective Gust Wind Speed (mph) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Spring | Summer | Fall | Winter | Spring | Summer | Fall | Winter |
| **153** | A | 20 | 17 | 18 | 20 | 26 | 22 | 25 | 26 |
| | B | 14 | 12 | 13 | 13 | 19 | 16 | 19 | 19 |
| | C | 15 | 13 | 14 | 14 | 21 | 17 | 20 | 21 |
| | D | 14 | 12 | 13 | 15 | 21 | 16 | 20 | 23 |
| | E | 14 | 11 | 13 | 14 | 21 | 16 | 19 | 22 |
| **154** | A | 17 | 12 | 16 | 16 | 22 | 16 | 21 | 21 |
| | B | 15 | 13 | 13 | 13 | 19 | 15 | 17 | 18 |
| | C | 15 | 13 | 13 | 14 | 20 | 16 | 18 | 20 |
| | D | 15 | 13 | 12 | 13 | 18 | 15 | 17 | 17 |
| | E | 14 | 12 | 13 | 13 | 18 | 15 | 17 | 18 |
| **155** | A | 14 | 11 | 13 | 14 | 20 | 16 | 18 | 20 |
| | B | 15 | 13 | 13 | 13 | 19 | 17 | 17 | 18 |
| | C | 17 | 14 | 13 | 14 | 20 | 17 | 18 | 19 |
| | D | 16 | 14 | 13 | 14 | 20 | 17 | 17 | 18 |
| | E | 15 | 13 | 13 | 14 | 20 | 17 | 17 | 18 |
| **156** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | 12 | 10 | 11 | 12 | 19 | 17 | 18 | 18 |
| | C | 13 | 11 | 12 | 13 | 20 | 17 | 18 | 19 |
| | D | 13 | 11 | 12 | 13 | 19 | 16 | 17 | 18 |
| | E | 11 | 10 | 11 | 11 | 17 | 15 | 16 | 17 |
| **157** | A | -- | -- | -- | -- | -- | -- | -- | -- |
| | B | -- | -- | -- | -- | -- | -- | -- | -- |
| | C | -- | -- | -- | -- | -- | -- | -- | -- |
| | D | -- | -- | -- | -- | -- | -- | -- | -- |
| | E | -- | -- | -- | -- | -- | -- | -- | -- |
| **158** | A | 12 | 9 | 12 | 12 | 18 | 13 | 17 | 17 |
| | B | 17 | 13 | 16 | 17 | 24 | 19 | 23 | 24 |
| | C | 18 | 13 | 17 | 17 | 25 | 19 | 24 | 25 |
| | D | 18 | 13 | 17 | 18 | 25 | 19 | 24 | 25 |
| | E | 14 | 12 | 14 | 14 | 21 | 17 | 20 | 21 |
| **159** | A | 13 | 9 | 12 | 13 | 18 | 13 | 17 | 18 |
| | B | 23 | 17 | 22 | 22 | 31 | 22 | 29 | 29 |
| | C | 24 | 17 | 23 | 22 | 31 | 22 | 29 | 29 |
| | D | 24 | 17 | 22 | 22 | 30 | 22 | 28 | 29 |
| | E | 16 | 13 | 15 | 15 | 22 | 18 | 21 | 22 |
| **160** | A | 13 | 9 | 12 | 12 | 17 | 13 | 17 | 17 |
| | B | 24 | 17 | 23 | 23 | 31 | 23 | 30 | 30 |
| | C | 25 | 17 | 23 | 23 | 30 | 21 | 29 | 29 |
| | D | 24 | 17 | 23 | 23 | 30 | 21 | 28 | 28 |
| | E | 13 | 10 | 13 | 13 | 19 | 15 | 19 | 20 |

**Table 2: Mean Speed and Effective Gust Categories - Seasonal**

| Location | Configuration | Mean Wind Speed (mph) | | | | Effective Gust Wind Speed (mph) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Spring | Summer | Fall | Winter | Spring | Summer | Fall | Winter |
| **161** | A | 14 | 10 | 13 | 13 | 20 | 14 | 19 | 19 |
| | B | 19 | 15 | 18 | 19 | 26 | 20 | 25 | 27 |
| | C | 23 | 16 | 21 | 22 | 29 | 21 | 27 | 28 |
| | D | 22 | 16 | 20 | 21 | 28 | 21 | 26 | 28 |
| | E | 14 | 11 | 14 | 15 | 20 | 17 | 20 | 21 |
| **162** | A | 9 | 7 | 8 | 9 | 14 | 11 | 14 | 14 |
| | B | 10 | 7 | 8 | 9 | 16 | 12 | 14 | 16 |
| | C | 11 | 9 | 10 | 11 | 17 | 14 | 16 | 18 |
| | D | 10 | 7 | 10 | 10 | 15 | 11 | 14 | 17 |
| | E | 9 | 7 | 8 | 10 | 15 | 11 | 14 | 16 |
| **163** | A | 16 | 12 | 16 | 16 | 22 | 17 | 21 | 22 |
| | B | 18 | 13 | 17 | 17 | 26 | 20 | 25 | 26 |
| | C | 14 | 11 | 13 | 15 | 22 | 16 | 21 | 23 |
| | D | 14 | 10 | 13 | 15 | 21 | 16 | 20 | 23 |
| | E | 11 | 9 | 10 | 10 | 17 | 14 | 16 | 16 |
| **164** | A | 17 | 13 | 17 | 17 | 23 | 18 | 22 | 23 |
| | B | 14 | 11 | 13 | 15 | 23 | 17 | 21 | 23 |
| | C | 14 | 10 | 13 | 15 | 22 | 17 | 21 | 23 |
| | D | 14 | 10 | 13 | 15 | 22 | 17 | 21 | 23 |
| | E | 14 | 13 | 14 | 14 | 21 | 18 | 20 | 21 |
| **165** | A | 17 | 13 | 17 | 17 | 23 | 18 | 22 | 23 |
| | B | 17 | 13 | 15 | 17 | 25 | 19 | 23 | 25 |
| | C | 17 | 12 | 16 | 17 | 25 | 19 | 23 | 26 |
| | D | 16 | 12 | 15 | 17 | 25 | 19 | 23 | 26 |
| | E | 16 | 14 | 15 | 16 | 21 | 18 | 20 | 22 |
| **166** | A | 17 | 13 | 16 | 17 | 23 | 18 | 22 | 23 |
| | B | 22 | 17 | 21 | 23 | 30 | 23 | 28 | 31 |
| | C | 21 | 17 | 20 | 22 | 29 | 23 | 28 | 31 |
| | D | 21 | 17 | 20 | 22 | 29 | 22 | 28 | 31 |
| | E | 24 | 17 | 23 | 22 | 30 | 21 | 28 | 28 |
| **167** | A | 17 | 14 | 16 | 17 | 22 | 18 | 22 | 23 |
| | B | 22 | 17 | 21 | 23 | 31 | 23 | 29 | 33 |
| | C | 21 | 16 | 20 | 23 | 31 | 23 | 29 | 33 |
| | D | 22 | 16 | 20 | 23 | 31 | 24 | 29 | 33 |
| | E | 15 | 12 | 14 | 15 | 21 | 17 | 20 | 22 |
| **168** | A | 17 | 13 | 16 | 17 | 23 | 18 | 21 | 23 |
| | B | 15 | 11 | 13 | 15 | 23 | 18 | 20 | 24 |
| | C | 11 | 9 | 10 | 11 | 18 | 15 | 16 | 19 |
| | D | 11 | 9 | 10 | 11 | 18 | 14 | 16 | 19 |
| | E | 28 | 20 | 26 | 26 | 34 | 25 | 32 | 33 |

**Table 2: Mean Speed and Effective Gust Categories - Seasonal**

| Location | Configuration | Mean Wind Speed (mph) | | | | Effective Gust Wind Speed (mph) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Spring | Summer | Fall | Winter | Spring | Summer | Fall | Winter |
| **169** | A | 17 | 13 | 17 | 17 | 23 | 18 | 22 | 23 |
| | B | 10 | 7 | 9 | 10 | 17 | 13 | 16 | 18 |
| | C | 9 | 7 | 8 | 9 | 15 | 12 | 14 | 15 |
| | D | 8 | 7 | 8 | 9 | 15 | 11 | 14 | 16 |
| | E | 21 | 15 | 19 | 19 | 28 | 20 | 26 | 26 |
| **170** | A | 17 | 13 | 16 | 17 | 22 | 17 | 21 | 22 |
| | B | 8 | 6 | 8 | 8 | 14 | 11 | 13 | 14 |
| | C | 9 | 7 | 8 | 9 | 15 | 12 | 14 | 15 |
| | D | 9 | 7 | 8 | 9 | 15 | 12 | 13 | 15 |
| | E | 13 | 10 | 12 | 14 | 20 | 14 | 18 | 21 |
| **171** | A | 16 | 12 | 16 | 16 | 22 | 17 | 21 | 22 |
| | B | 11 | 8 | 10 | 10 | 19 | 13 | 17 | 17 |
| | C | 10 | 7 | 9 | 10 | 18 | 13 | 17 | 19 |
| | D | 9 | 7 | 8 | 9 | 16 | 12 | 15 | 16 |
| | E | 15 | 11 | 14 | 17 | 23 | 17 | 21 | 25 |
| **172** | A | 17 | 12 | 16 | 16 | 22 | 17 | 21 | 22 |
| | B | -- | -- | -- | -- | -- | -- | -- | -- |
| | C | -- | -- | -- | -- | -- | -- | -- | -- |
| | D | -- | -- | -- | -- | -- | -- | -- | -- |
| | E | -- | -- | -- | -- | -- | -- | -- | -- |
| **173** | A | 16 | 11 | 15 | 15 | 21 | 16 | 20 | 21 |
| | B | 23 | 17 | 21 | 22 | 30 | 23 | 28 | 30 |
| | C | 17 | 12 | 16 | 17 | 24 | 17 | 22 | 24 |
| | D | 16 | 12 | 15 | 17 | 23 | 17 | 22 | 24 |
| | E | 11 | 9 | 10 | 12 | 17 | 13 | 16 | 19 |
| **174** | A | 15 | 11 | 15 | 15 | 20 | 15 | 20 | 20 |
| | B | 19 | 15 | 17 | 20 | 28 | 21 | 26 | 29 |
| | C | 16 | 14 | 15 | 16 | 23 | 19 | 22 | 24 |
| | D | 15 | 13 | 14 | 15 | 22 | 18 | 21 | 23 |
| | E | 17 | 13 | 15 | 18 | 25 | 19 | 22 | 26 |
| **175** | A | 15 | 11 | 15 | 15 | 20 | 15 | 19 | 20 |
| | B | 14 | 11 | 13 | 14 | 21 | 17 | 20 | 21 |
| | C | 15 | 12 | 14 | 15 | 23 | 18 | 21 | 23 |
| | D | 14 | 11 | 13 | 14 | 21 | 17 | 20 | 22 |
| | E | 17 | 13 | 15 | 19 | 25 | 19 | 22 | 27 |
| **176** | A | 14 | 11 | 14 | 14 | 19 | 14 | 18 | 19 |
| | B | 12 | 10 | 12 | 13 | 19 | 16 | 18 | 19 |
| | C | 12 | 10 | 12 | 12 | 19 | 16 | 18 | 19 |
| | D | 13 | 11 | 12 | 12 | 19 | 16 | 18 | 19 |
| | E | 14 | 11 | 12 | 14 | 21 | 16 | 19 | 22 |

**Table 2: Mean Speed and Effective Gust Categories - Seasonal**

| Location | Configuration | Mean Wind Speed (mph) | | | | Effective Gust Wind Speed (mph) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Spring | Summer | Fall | Winter | Spring | Summer | Fall | Winter |
| **177** | A | 15 | 11 | 15 | 15 | 20 | 15 | 19 | 20 |
| | B | 14 | 12 | 13 | 14 | 21 | 18 | 20 | 22 |
| | C | 12 | 10 | 12 | 12 | 19 | 16 | 18 | 19 |
| | D | 12 | 11 | 12 | 12 | 19 | 16 | 18 | 18 |
| | E | 13 | 10 | 12 | 13 | 20 | 17 | 19 | 21 |
| **178** | A | 16 | 12 | 15 | 15 | 20 | 16 | 20 | 20 |
| | B | 16 | 14 | 16 | 17 | 23 | 19 | 22 | 24 |
| | C | 15 | 12 | 15 | 15 | 21 | 18 | 21 | 22 |
| | D | 14 | 12 | 14 | 14 | 20 | 17 | 20 | 21 |
| | E | 15 | 12 | 14 | 15 | 21 | 18 | 21 | 22 |
| **179** | A | 16 | 13 | 16 | 17 | 22 | 17 | 21 | 22 |
| | B | 11 | 9 | 10 | 10 | 16 | 14 | 15 | 16 |
| | C | 11 | 10 | 11 | 11 | 17 | 14 | 16 | 18 |
| | D | 11 | 9 | 10 | 11 | 16 | 14 | 16 | 17 |
| | E | 10 | 9 | 10 | 10 | 16 | 13 | 15 | 16 |
| **180** | A | 17 | 13 | 16 | 17 | 22 | 17 | 21 | 22 |
| | B | -- | -- | -- | -- | -- | -- | -- | -- |
| | C | -- | -- | -- | -- | -- | -- | -- | -- |
| | D | -- | -- | -- | -- | -- | -- | -- | -- |
| | E | -- | -- | -- | -- | -- | -- | -- | -- |
| **181** | A | 17 | 13 | 16 | 17 | 22 | 17 | 21 | 22 |
| | B | -- | -- | -- | -- | -- | -- | -- | -- |
| | C | -- | -- | -- | -- | -- | -- | -- | -- |
| | D | -- | -- | -- | -- | -- | -- | -- | -- |
| | E | -- | -- | -- | -- | -- | -- | -- | -- |
| **182** | A | 17 | 13 | 16 | 17 | 22 | 18 | 22 | 23 |
| | B | -- | -- | -- | -- | -- | -- | -- | -- |
| | C | -- | -- | -- | -- | -- | -- | -- | -- |
| | D | -- | -- | -- | -- | -- | -- | -- | -- |
| | E | -- | -- | -- | -- | -- | -- | -- | -- |
| **183** | A | 17 | 13 | 16 | 17 | 22 | 18 | 22 | 23 |
| | B | -- | -- | -- | -- | -- | -- | -- | -- |
| | C | -- | -- | -- | -- | -- | -- | -- | -- |
| | D | -- | -- | -- | -- | -- | -- | -- | -- |
| | E | -- | -- | -- | -- | -- | -- | -- | -- |
| **184** | A | 17 | 13 | 16 | 17 | 23 | 18 | 22 | 23 |
| | B | 13 | 9 | 13 | 13 | 20 | 15 | 20 | 21 |
| | C | 14 | 10 | 13 | 13 | 22 | 16 | 21 | 21 |
| | D | 14 | 10 | 13 | 14 | 22 | 15 | 20 | 22 |
| | E | 21 | 14 | 19 | 18 | 27 | 19 | 26 | 25 |

**Table 2: Mean Speed and Effective Gust Categories - Seasonal**

| Location | Configuration | Mean Wind Speed (mph) | | | | Effective Gust Wind Speed (mph) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Spring | Summer | Fall | Winter | Spring | Summer | Fall | Winter |
| **185** | A | 17 | 13 | 16 | 17 | 23 | 18 | 22 | 23 |
| | B | 14 | 10 | 14 | 13 | 21 | 15 | 20 | 20 |
| | C | 15 | 10 | 14 | 13 | 21 | 15 | 20 | 20 |
| | D | 14 | 10 | 13 | 13 | 20 | 15 | 20 | 20 |
| | E | 20 | 14 | 19 | 18 | 26 | 18 | 24 | 24 |
| **186** | A | 17 | 14 | 16 | 17 | 23 | 18 | 22 | 23 |
| | B | -- | -- | -- | -- | -- | -- | -- | -- |
| | C | -- | -- | -- | -- | -- | -- | -- | -- |
| | D | -- | -- | -- | -- | -- | -- | -- | -- |
| | E | -- | -- | -- | -- | -- | -- | -- | -- |
| **187** | A | 17 | 13 | 16 | 17 | 22 | 18 | 22 | 23 |
| | B | 13 | 11 | 12 | 13 | 19 | 16 | 18 | 20 |
| | C | 14 | 11 | 13 | 14 | 20 | 17 | 19 | 21 |
| | D | 13 | 11 | 12 | 13 | 20 | 17 | 19 | 20 |
| | E | 13 | 11 | 12 | 13 | 20 | 16 | 19 | 20 |
| **188** | A | 17 | 13 | 16 | 17 | 22 | 18 | 21 | 23 |
| | B | 14 | 12 | 12 | 13 | 21 | 18 | 19 | 21 |
| | C | 14 | 13 | 13 | 14 | 22 | 19 | 20 | 22 |
| | D | 14 | 12 | 13 | 14 | 22 | 18 | 19 | 21 |
| | E | 13 | 11 | 12 | 13 | 21 | 18 | 19 | 21 |
| **189** | A | 17 | 14 | 17 | 18 | 23 | 18 | 22 | 23 |
| | B | 21 | 16 | 19 | 20 | 28 | 22 | 26 | 28 |
| | C | 22 | 18 | 21 | 22 | 29 | 23 | 27 | 30 |
| | D | 22 | 17 | 20 | 22 | 29 | 23 | 27 | 29 |
| | E | 23 | 17 | 21 | 22 | 29 | 23 | 27 | 29 |
| **190** | A | 16 | 13 | 16 | 17 | 22 | 18 | 21 | 23 |
| | B | 19 | 16 | 18 | 18 | 26 | 22 | 25 | 26 |
| | C | 20 | 17 | 19 | 19 | 28 | 23 | 26 | 28 |
| | D | 20 | 17 | 19 | 19 | 28 | 24 | 26 | 28 |
| | E | 19 | 17 | 17 | 17 | 26 | 23 | 24 | 24 |
| **191** | A | 17 | 14 | 16 | 17 | 23 | 18 | 22 | 23 |
| | B | 19 | 15 | 18 | 19 | 25 | 20 | 24 | 25 |
| | C | 20 | 17 | 19 | 20 | 26 | 22 | 25 | 27 |
| | D | 20 | 17 | 19 | 20 | 26 | 22 | 25 | 26 |
| | E | 19 | 16 | 18 | 20 | 25 | 21 | 24 | 26 |
| **192** | A | 18 | 14 | 17 | 18 | 23 | 18 | 22 | 24 |
| | B | 18 | 14 | 17 | 18 | 24 | 18 | 23 | 24 |
| | C | 19 | 15 | 18 | 19 | 25 | 19 | 24 | 25 |
| | D | 19 | 15 | 18 | 19 | 24 | 19 | 23 | 25 |
| | E | 19 | 15 | 18 | 19 | 24 | 19 | 23 | 25 |

**Table 2: Mean Speed and Effective Gust Categories - Seasonal**

| Location | Configuration | Mean Wind Speed (mph) | | | | Effective Gust Wind Speed (mph) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Spring | Summer | Fall | Winter | Spring | Summer | Fall | Winter |
| **193** | A | 17 | 13 | 16 | 17 | 23 | 18 | 22 | 23 |
| | B | 14 | 12 | 13 | 15 | 21 | 17 | 19 | 22 |
| | C | 15 | 12 | 13 | 15 | 22 | 17 | 20 | 22 |
| | D | 14 | 12 | 13 | 14 | 21 | 17 | 19 | 21 |
| | E | 15 | 12 | 13 | 15 | 22 | 18 | 19 | 22 |
| **194** | A | 15 | 11 | 14 | 15 | 20 | 15 | 19 | 20 |
| | B | 13 | 10 | 12 | 14 | 21 | 15 | 19 | 22 |
| | C | 11 | 8 | 10 | 11 | 17 | 13 | 16 | 17 |
| | D | 11 | 8 | 10 | 11 | 17 | 13 | 16 | 17 |
| | E | 11 | 8 | 10 | 11 | 17 | 13 | 16 | 18 |
| **195** | A | 11 | 8 | 10 | 11 | 17 | 12 | 16 | 17 |
| | B | 9 | 7 | 8 | 9 | 15 | 12 | 14 | 16 |
| | C | 10 | 7 | 9 | 10 | 16 | 12 | 15 | 16 |
| | D | 10 | 7 | 9 | 10 | 17 | 12 | 16 | 16 |
| | E | 9 | 7 | 9 | 9 | 16 | 12 | 15 | 16 |
| **196** | A | 16 | 15 | 15 | 16 | 23 | 20 | 21 | 23 |
| | B | 16 | 12 | 15 | 17 | 23 | 17 | 21 | 24 |
| | C | 17 | 13 | 15 | 18 | 24 | 18 | 22 | 26 |
| | D | 14 | 11 | 13 | 15 | 21 | 16 | 19 | 23 |
| | E | 13 | 10 | 12 | 15 | 21 | 16 | 19 | 23 |
| **197** | A | 19 | 14 | 17 | 20 | 28 | 21 | 25 | 30 |
| | B | 16 | 12 | 15 | 16 | 22 | 16 | 20 | 23 |
| | C | 16 | 12 | 15 | 17 | 23 | 17 | 21 | 24 |
| | D | 18 | 13 | 16 | 19 | 26 | 20 | 24 | 28 |
| | E | 18 | 14 | 16 | 19 | 26 | 20 | 24 | 28 |
| **198** | A | 18 | 13 | 16 | 19 | 28 | 21 | 25 | 31 |
| | B | 20 | 14 | 19 | 18 | 27 | 20 | 25 | 26 |
| | C | 19 | 14 | 18 | 19 | 27 | 20 | 25 | 27 |
| | D | 21 | 16 | 18 | 22 | 31 | 23 | 28 | 33 |
| | E | 21 | 16 | 19 | 22 | 31 | 23 | 28 | 33 |
| **199** | A | 14 | 10 | 12 | 14 | 20 | 15 | 18 | 22 |
| | B | 18 | 13 | 17 | 16 | 25 | 18 | 23 | 23 |
| | C | 17 | 12 | 16 | 16 | 24 | 17 | 22 | 22 |
| | D | 15 | 11 | 13 | 16 | 22 | 17 | 20 | 24 |
| | E | 15 | 11 | 13 | 16 | 22 | 16 | 20 | 24 |
| **200** | A | 13 | 10 | 12 | 14 | 19 | 15 | 18 | 21 |
| | B | 12 | 10 | 12 | 13 | 19 | 15 | 18 | 20 |
| | C | 12 | 9 | 12 | 13 | 19 | 15 | 18 | 21 |
| | D | 14 | 10 | 13 | 14 | 20 | 15 | 19 | 21 |
| | E | 14 | 10 | 13 | 14 | 20 | 15 | 18 | 22 |

**Table 2: Mean Speed and Effective Gust Categories - Seasonal**

| Location | Configuration | Mean Wind Speed (mph) | | | | Effective Gust Wind Speed (mph) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Spring | Summer | Fall | Winter | Spring | Summer | Fall | Winter |
| **201** | A | 13 | 10 | 12 | 14 | 20 | 15 | 18 | 21 |
| | B | 12 | 10 | 12 | 13 | 19 | 15 | 18 | 21 |
| | C | 12 | 10 | 12 | 13 | 19 | 15 | 18 | 21 |
| | D | 14 | 10 | 13 | 14 | 20 | 15 | 19 | 22 |
| | E | 13 | 10 | 12 | 14 | 20 | 15 | 18 | 22 |
| **202** | A | 12 | 10 | 12 | 13 | 19 | 15 | 18 | 21 |
| | B | 17 | 12 | 16 | 15 | 23 | 17 | 22 | 22 |
| | C | 16 | 12 | 15 | 15 | 22 | 17 | 21 | 21 |
| | D | 14 | 11 | 13 | 16 | 23 | 17 | 21 | 25 |
| | E | 14 | 11 | 13 | 16 | 22 | 17 | 20 | 25 |
| **203** | A | 15 | 11 | 13 | 16 | 22 | 16 | 19 | 24 |
| | B | 17 | 12 | 16 | 15 | 23 | 16 | 22 | 21 |
| | C | 16 | 11 | 15 | 14 | 22 | 16 | 21 | 21 |
| | D | 16 | 12 | 15 | 18 | 23 | 17 | 21 | 25 |
| | E | 16 | 12 | 15 | 17 | 22 | 16 | 20 | 24 |
| **204** | A | 18 | 13 | 16 | 19 | 25 | 19 | 23 | 28 |
| | B | 15 | 12 | 14 | 15 | 22 | 17 | 21 | 22 |
| | C | 15 | 12 | 14 | 15 | 23 | 17 | 21 | 22 |
| | D | 11 | 9 | 10 | 11 | 17 | 13 | 16 | 17 |
| | E | 11 | 8 | 10 | 11 | 17 | 13 | 16 | 17 |
| **205** | A | 15 | 11 | 14 | 15 | 22 | 17 | 21 | 23 |
| | B | 15 | 11 | 13 | 15 | 22 | 16 | 20 | 22 |
| | C | 15 | 11 | 14 | 15 | 23 | 17 | 21 | 23 |
| | D | 15 | 11 | 14 | 15 | 23 | 17 | 21 | 22 |
| | E | 13 | 10 | 12 | 13 | 21 | 16 | 20 | 21 |
| **206** | A | 14 | 11 | 13 | 15 | 20 | 15 | 19 | 22 |
| | B | 14 | 11 | 13 | 14 | 21 | 16 | 20 | 20 |
| | C | 14 | 11 | 13 | 13 | 20 | 15 | 19 | 20 |
| | D | 12 | 9 | 11 | 12 | 17 | 14 | 16 | 18 |
| | E | 11 | 9 | 10 | 12 | 17 | 13 | 16 | 18 |
| **207** | A | 17 | 13 | 16 | 17 | 23 | 18 | 21 | 23 |
| | B | 17 | 15 | 16 | 17 | 23 | 20 | 22 | 23 |
| | C | 17 | 15 | 16 | 17 | 23 | 20 | 22 | 23 |
| | D | 17 | 15 | 16 | 17 | 22 | 19 | 21 | 23 |
| | E | 16 | 14 | 15 | 16 | 21 | 18 | 20 | 21 |
| **208** | A | 18 | 13 | 16 | 19 | 26 | 19 | 24 | 27 |
| | B | 20 | 17 | 19 | 21 | 27 | 23 | 26 | 28 |
| | C | 21 | 16 | 19 | 21 | 28 | 22 | 26 | 28 |
| | D | 19 | 15 | 18 | 19 | 26 | 20 | 25 | 26 |
| | E | 18 | 14 | 16 | 17 | 25 | 19 | 23 | 25 |

**Table 2: Mean Speed and Effective Gust Categories - Seasonal**

| Location | Configuration | Mean Wind Speed (mph) | | | | Effective Gust Wind Speed (mph) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Spring | Summer | Fall | Winter | Spring | Summer | Fall | Winter |
| **209** | A | 24 | 16 | 22 | 21 | 31 | 22 | 29 | 28 |
| | B | 14 | 10 | 13 | 13 | 21 | 15 | 20 | 20 |
| | C | 16 | 11 | 15 | 15 | 24 | 17 | 22 | 23 |
| | D | 17 | 13 | 16 | 17 | 24 | 19 | 23 | 24 |
| | E | 16 | 13 | 16 | 17 | 23 | 19 | 22 | 23 |
| **210** | A | 22 | 16 | 20 | 22 | 28 | 21 | 26 | 28 |
| | B | 13 | 9 | 12 | 13 | 20 | 15 | 19 | 20 |
| | C | 15 | 11 | 14 | 15 | 22 | 17 | 21 | 22 |
| | D | 14 | 11 | 13 | 15 | 22 | 17 | 21 | 23 |
| | E | 14 | 11 | 13 | 14 | 21 | 16 | 20 | 22 |
| **211** | A | 18 | 14 | 17 | 18 | 24 | 19 | 23 | 24 |
| | B | 19 | 14 | 17 | 19 | 26 | 19 | 24 | 26 |
| | C | 20 | 15 | 19 | 20 | 27 | 20 | 25 | 27 |
| | D | 20 | 15 | 19 | 19 | 27 | 20 | 25 | 27 |
| | E | 19 | 14 | 18 | 18 | 26 | 19 | 24 | 25 |
| **212** | A | 14 | 10 | 13 | 13 | 21 | 16 | 20 | 21 |
| | B | 15 | 11 | 14 | 17 | 24 | 18 | 22 | 26 |
| | C | 16 | 11 | 14 | 17 | 24 | 18 | 22 | 26 |
| | D | 14 | 11 | 13 | 16 | 23 | 17 | 21 | 25 |
| | E | 13 | 10 | 12 | 14 | 21 | 15 | 19 | 22 |
| **213** | A | 23 | 17 | 21 | 22 | 29 | 22 | 27 | 29 |
| | B | 17 | 12 | 16 | 16 | 23 | 17 | 22 | 23 |
| | C | 19 | 13 | 17 | 18 | 25 | 19 | 24 | 25 |
| | D | 20 | 15 | 19 | 20 | 25 | 19 | 24 | 26 |
| | E | 19 | 14 | 18 | 19 | 25 | 18 | 23 | 25 |
| **214** | A | 15 | 13 | 15 | 17 | 23 | 19 | 23 | 26 |
| | B | 11 | 8 | 11 | 12 | 18 | 13 | 18 | 19 |
| | C | 12 | 9 | 12 | 13 | 19 | 14 | 19 | 20 |
| | D | 11 | 9 | 11 | 12 | 18 | 15 | 17 | 19 |
| | E | 10 | 8 | 10 | 11 | 17 | 14 | 16 | 18 |
| **215** | A | 18 | 16 | 18 | 19 | 27 | 23 | 26 | 28 |
| | B | 16 | 13 | 15 | 17 | 24 | 19 | 22 | 25 |
| | C | 17 | 14 | 16 | 18 | 24 | 20 | 23 | 25 |
| | D | 18 | 16 | 17 | 19 | 26 | 23 | 25 | 27 |
| | E | 17 | 15 | 16 | 18 | 24 | 21 | 23 | 25 |
| **216** | A | 22 | 17 | 20 | 22 | 28 | 22 | 26 | 28 |
| | B | 11 | 9 | 10 | 11 | 17 | 13 | 16 | 18 |
| | C | 12 | 9 | 11 | 12 | 18 | 15 | 17 | 19 |
| | D | 14 | 12 | 13 | 15 | 21 | 17 | 20 | 22 |
| | E | 13 | 11 | 12 | 14 | 19 | 16 | 18 | 20 |

**Table 2: Mean Speed and Effective Gust Categories - Seasonal**

| Location | Configuration | Mean Wind Speed (mph) | | | | Effective Gust Wind Speed (mph) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Spring | Summer | Fall | Winter | Spring | Summer | Fall | Winter |
| **217** | A | 18 | 13 | 17 | 20 | 24 | 19 | 23 | 27 |
| | B | 14 | 10 | 13 | 15 | 20 | 15 | 19 | 21 |
| | C | 15 | 11 | 14 | 16 | 21 | 16 | 20 | 22 |
| | D | 16 | 12 | 15 | 17 | 23 | 18 | 22 | 25 |
| | E | 15 | 11 | 14 | 17 | 22 | 16 | 20 | 23 |
| **218** | A | 16 | 12 | 15 | 17 | 22 | 17 | 21 | 24 |
| | B | 15 | 11 | 14 | 16 | 21 | 16 | 20 | 22 |
| | C | 16 | 12 | 15 | 17 | 22 | 17 | 21 | 23 |
| | D | 16 | 12 | 15 | 17 | 22 | 17 | 21 | 23 |
| | E | 15 | 11 | 14 | 16 | 21 | 16 | 20 | 22 |
| **219** | A | 17 | 13 | 16 | 17 | 22 | 18 | 21 | 23 |
| | B | 16 | 13 | 15 | 18 | 23 | 18 | 22 | 24 |
| | C | 18 | 14 | 16 | 18 | 24 | 18 | 22 | 25 |
| | D | 17 | 14 | 16 | 18 | 23 | 19 | 22 | 24 |
| | E | 17 | 13 | 16 | 17 | 22 | 18 | 21 | 23 |
| **220** | A | 16 | 12 | 15 | 16 | 21 | 17 | 20 | 21 |
| | B | 16 | 12 | 15 | 16 | 22 | 17 | 20 | 22 |
| | C | 17 | 13 | 16 | 17 | 22 | 18 | 21 | 23 |
| | D | 16 | 13 | 15 | 16 | 22 | 18 | 21 | 22 |
| | E | 16 | 12 | 15 | 16 | 21 | 17 | 20 | 21 |
| **221** | A | 17 | 13 | 15 | 17 | 22 | 18 | 21 | 23 |
| | B | 17 | 13 | 16 | 17 | 23 | 17 | 21 | 24 |
| | C | 19 | 14 | 18 | 20 | 25 | 19 | 24 | 27 |
| | D | 19 | 14 | 17 | 20 | 25 | 19 | 23 | 26 |
| | E | 17 | 13 | 16 | 18 | 23 | 18 | 21 | 24 |
| **222** | A | 14 | 11 | 13 | 16 | 21 | 17 | 20 | 23 |
| | B | 17 | 14 | 17 | 18 | 25 | 21 | 24 | 26 |
| | C | 17 | 13 | 16 | 18 | 24 | 19 | 22 | 25 |
| | D | 16 | 12 | 15 | 17 | 23 | 17 | 21 | 24 |
| | E | 14 | 10 | 13 | 15 | 20 | 15 | 19 | 21 |
| **223** | A | 13 | 10 | 12 | 14 | 20 | 15 | 19 | 22 |
| | B | 16 | 12 | 15 | 17 | 23 | 17 | 21 | 24 |
| | C | 17 | 12 | 15 | 18 | 23 | 18 | 22 | 25 |
| | D | 16 | 12 | 15 | 17 | 23 | 17 | 21 | 25 |
| | E | 14 | 10 | 13 | 15 | 20 | 15 | 19 | 22 |
| **224** | A | 14 | 11 | 12 | 14 | 20 | 15 | 19 | 21 |
| | B | 16 | 12 | 14 | 17 | 22 | 16 | 20 | 23 |
| | C | 18 | 14 | 16 | 18 | 24 | 19 | 23 | 26 |
| | D | 17 | 13 | 15 | 17 | 23 | 18 | 22 | 25 |
| | E | 16 | 12 | 15 | 16 | 22 | 17 | 20 | 23 |

**Table 2: Mean Speed and Effective Gust Categories - Seasonal**

| Location | Configuration | Mean Wind Speed (mph) | | | | Effective Gust Wind Speed (mph) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Spring | Summer | Fall | Winter | Spring | Summer | Fall | Winter |
| **225** | A | 17 | 13 | 16 | 18 | 23 | 17 | 22 | 24 |
| | B | 18 | 14 | 17 | 19 | 25 | 19 | 23 | 27 |
| | C | 19 | 16 | 18 | 21 | 27 | 23 | 26 | 28 |
| | D | 18 | 14 | 17 | 19 | 24 | 19 | 23 | 26 |
| | E | 18 | 13 | 17 | 19 | 24 | 18 | 22 | 25 |
| **226** | A | 18 | 13 | 17 | 19 | 24 | 18 | 23 | 25 |
| | B | 18 | 14 | 17 | 19 | 24 | 18 | 23 | 26 |
| | C | 20 | 16 | 19 | 22 | 27 | 24 | 26 | 29 |
| | D | 19 | 14 | 18 | 21 | 25 | 19 | 24 | 27 |
| | E | 20 | 15 | 18 | 22 | 26 | 20 | 24 | 28 |
| **227** | A | 18 | 14 | 17 | 19 | 24 | 18 | 22 | 25 |
| | B | 19 | 14 | 17 | 20 | 25 | 18 | 23 | 26 |
| | C | 20 | 15 | 19 | 22 | 27 | 21 | 25 | 29 |
| | D | 20 | 15 | 19 | 22 | 26 | 19 | 24 | 28 |
| | E | 20 | 15 | 18 | 21 | 28 | 21 | 26 | 29 |
| **228** | A | 18 | 14 | 17 | 18 | 24 | 19 | 23 | 24 |
| | B | 19 | 14 | 18 | 19 | 25 | 18 | 23 | 25 |
| | C | 20 | 15 | 19 | 19 | 25 | 19 | 24 | 25 |
| | D | 19 | 15 | 18 | 19 | 25 | 19 | 23 | 25 |
| | E | 19 | 15 | 18 | 19 | 25 | 19 | 23 | 25 |
| **229** | A | 18 | 14 | 17 | 18 | 24 | 18 | 23 | 24 |
| | B | 17 | 13 | 16 | 17 | 23 | 17 | 21 | 22 |
| | C | 17 | 13 | 16 | 17 | 23 | 17 | 22 | 23 |
| | D | 17 | 13 | 16 | 17 | 23 | 17 | 22 | 23 |
| | E | 17 | 13 | 16 | 18 | 23 | 18 | 22 | 23 |
| **230** | A | 15 | 12 | 15 | 15 | 20 | 16 | 20 | 20 |
| | B | 11 | 9 | 10 | 11 | 17 | 13 | 16 | 17 |
| | C | 12 | 9 | 11 | 11 | 18 | 14 | 17 | 17 |
| | D | 11 | 9 | 11 | 11 | 17 | 13 | 17 | 17 |
| | E | 10 | 8 | 10 | 10 | 16 | 13 | 15 | 16 |
| **231** | A | 14 | 10 | 13 | 13 | 19 | 14 | 18 | 18 |
| | B | 10 | 8 | 9 | 10 | 15 | 11 | 14 | 15 |
| | C | 11 | 8 | 10 | 11 | 16 | 12 | 16 | 17 |
| | D | 11 | 8 | 10 | 11 | 16 | 12 | 15 | 16 |
| | E | 9 | 7 | 8 | 10 | 14 | 11 | 13 | 15 |
| **232** | A | 17 | 13 | 16 | 17 | 22 | 17 | 20 | 22 |
| | B | 15 | 12 | 14 | 15 | 21 | 16 | 19 | 21 |
| | C | 17 | 13 | 15 | 17 | 23 | 18 | 21 | 23 |
| | D | 16 | 13 | 15 | 17 | 22 | 17 | 20 | 22 |
| | E | 15 | 12 | 14 | 16 | 21 | 17 | 19 | 22 |

**Table 2: Mean Speed and Effective Gust Categories - Seasonal**

| Location | Configuration | Mean Wind Speed (mph) | | | | Effective Gust Wind Speed (mph) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Spring | Summer | Fall | Winter | Spring | Summer | Fall | Winter |
| **233** | A | 14 | 10 | 13 | 13 | 19 | 14 | 18 | 18 |
| | B | 10 | 8 | 9 | 10 | 16 | 12 | 15 | 17 |
| | C | 12 | 9 | 11 | 13 | 19 | 14 | 18 | 21 |
| | D | 10 | 7 | 9 | 10 | 15 | 12 | 15 | 16 |
| | E | 10 | 7 | 9 | 10 | 16 | 12 | 15 | 17 |
| **234** | A | 20 | 15 | 18 | 19 | 26 | 19 | 24 | 26 |
| | B | 18 | 14 | 17 | 20 | 25 | 19 | 24 | 27 |
| | C | 19 | 14 | 18 | 21 | 26 | 19 | 24 | 28 |
| | D | 15 | 12 | 14 | 16 | 23 | 18 | 21 | 25 |
| | E | 15 | 11 | 14 | 16 | 22 | 17 | 20 | 24 |
| **235** | A | 14 | 11 | 13 | 15 | 21 | 16 | 20 | 24 |
| | B | 12 | 9 | 11 | 13 | 20 | 15 | 18 | 22 |
| | C | 13 | 10 | 12 | 14 | 20 | 15 | 19 | 22 |
| | D | 14 | 11 | 13 | 16 | 22 | 17 | 20 | 24 |
| | E | 15 | 11 | 13 | 16 | 23 | 17 | 20 | 25 |
| **236** | A | 18 | 14 | 17 | 20 | 25 | 19 | 23 | 28 |
| | B | 17 | 12 | 15 | 18 | 24 | 18 | 22 | 26 |
| | C | 17 | 13 | 16 | 19 | 24 | 18 | 23 | 26 |
| | D | 18 | 14 | 17 | 20 | 25 | 19 | 23 | 27 |
| | E | 19 | 14 | 17 | 21 | 26 | 19 | 24 | 28 |
| **237** | A | 8 | 6 | 8 | 9 | 14 | 10 | 13 | 14 |
| | B | 8 | 6 | 8 | 8 | 14 | 10 | 13 | 14 |
| | C | 8 | 6 | 7 | 8 | 14 | 10 | 12 | 14 |
| | D | 8 | 6 | 8 | 8 | 13 | 10 | 12 | 14 |
| | E | 8 | 6 | 7 | 9 | 13 | 10 | 12 | 14 |
| **238** | A | 7 | 6 | 7 | 8 | 12 | 10 | 12 | 13 |
| | B | 10 | 8 | 9 | 10 | 15 | 13 | 14 | 16 |
| | C | 8 | 7 | 8 | 9 | 14 | 12 | 14 | 15 |
| | D | 8 | 7 | 7 | 8 | 13 | 11 | 13 | 14 |
| | E | 7 | 6 | 7 | 8 | 12 | 10 | 12 | 13 |
| **239** | A | 18 | 13 | 16 | 19 | 25 | 18 | 23 | 27 |
| | B | 17 | 13 | 16 | 19 | 24 | 19 | 23 | 26 |
| | C | 18 | 13 | 16 | 19 | 25 | 19 | 23 | 27 |
| | D | 17 | 13 | 16 | 19 | 25 | 19 | 23 | 27 |
| | E | 18 | 13 | 16 | 19 | 25 | 19 | 23 | 27 |
| **240** | A | 19 | 15 | 18 | 20 | 27 | 20 | 25 | 28 |
| | B | 18 | 14 | 17 | 20 | 26 | 20 | 24 | 28 |
| | C | 19 | 14 | 17 | 20 | 27 | 20 | 25 | 28 |
| | D | 19 | 14 | 17 | 19 | 26 | 20 | 24 | 28 |
| | E | 19 | 14 | 17 | 19 | 26 | 19 | 24 | 27 |

**Table 2: Mean Speed and Effective Gust Categories - Seasonal**

| Location | Configuration | Mean Wind Speed (mph) | | | | Effective Gust Wind Speed (mph) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Spring | Summer | Fall | Winter | Spring | Summer | Fall | Winter |
| **241** | A | 20 | 15 | 18 | 21 | 28 | 21 | 25 | 30 |
| | B | 20 | 15 | 18 | 21 | 28 | 21 | 26 | 31 |
| | C | 20 | 15 | 18 | 21 | 29 | 22 | 27 | 31 |
| | D | 19 | 15 | 18 | 21 | 28 | 21 | 26 | 30 |
| | E | 19 | 14 | 17 | 21 | 27 | 20 | 25 | 29 |
| **242** | A | 17 | 13 | 15 | 18 | 24 | 18 | 22 | 26 |
| | B | 17 | 12 | 16 | 18 | 25 | 19 | 23 | 27 |
| | C | 17 | 13 | 16 | 19 | 25 | 19 | 23 | 27 |
| | D | 17 | 13 | 16 | 19 | 25 | 19 | 23 | 27 |
| | E | 17 | 13 | 16 | 18 | 25 | 18 | 23 | 27 |
| **243** | A | 20 | 15 | 19 | 19 | 27 | 20 | 26 | 28 |
| | B | 20 | 15 | 18 | 20 | 27 | 21 | 25 | 28 |
| | C | 20 | 16 | 19 | 20 | 28 | 22 | 26 | 29 |
| | D | 21 | 16 | 20 | 20 | 28 | 22 | 27 | 29 |
| | E | 20 | 15 | 19 | 19 | 28 | 21 | 26 | 28 |
| **244** | A | 16 | 11 | 15 | 15 | 22 | 17 | 21 | 22 |
| | B | 14 | 10 | 13 | 13 | 20 | 16 | 19 | 21 |
| | C | 14 | 11 | 14 | 14 | 22 | 17 | 20 | 22 |
| | D | 17 | 12 | 15 | 15 | 23 | 18 | 22 | 23 |
| | E | 16 | 12 | 15 | 14 | 23 | 17 | 21 | 21 |
| **245** | A | 17 | 14 | 16 | 18 | 23 | 18 | 22 | 24 |
| | B | 17 | 14 | 16 | 17 | 22 | 18 | 21 | 23 |
| | C | 17 | 14 | 16 | 18 | 23 | 19 | 22 | 24 |
| | D | 17 | 14 | 17 | 18 | 23 | 19 | 22 | 24 |
| | E | 18 | 15 | 17 | 18 | 23 | 19 | 22 | 24 |
| **246** | A | 18 | 14 | 17 | 18 | 23 | 18 | 22 | 24 |
| | B | 17 | 14 | 16 | 18 | 23 | 18 | 22 | 24 |
| | C | 18 | 14 | 17 | 18 | 24 | 19 | 22 | 24 |
| | D | 18 | 14 | 17 | 19 | 23 | 19 | 22 | 24 |
| | E | 19 | 15 | 18 | 19 | 24 | 19 | 23 | 25 |
| **247** | A | 19 | 14 | 18 | 19 | 25 | 19 | 23 | 25 |
| | B | 19 | 14 | 18 | 19 | 25 | 19 | 23 | 25 |
| | C | 20 | 15 | 19 | 20 | 26 | 20 | 24 | 26 |
| | D | 19 | 15 | 18 | 20 | 25 | 19 | 24 | 26 |
| | E | 20 | 15 | 19 | 20 | 26 | 20 | 25 | 26 |
| **248** | A | 19 | 15 | 18 | 20 | 25 | 19 | 24 | 26 |
| | B | 19 | 15 | 18 | 19 | 25 | 19 | 24 | 26 |
| | C | 20 | 15 | 19 | 20 | 26 | 20 | 25 | 27 |
| | D | 20 | 15 | 19 | 20 | 26 | 20 | 24 | 27 |
| | E | 20 | 16 | 20 | 20 | 26 | 20 | 25 | 26 |

### Table 2: Mean Speed and Effective Gust Categories - Seasonal

| Location | Configuration | Mean Wind Speed (mph) | | | | Effective Gust Wind Speed (mph) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Spring | Summer | Fall | Winter | Spring | Summer | Fall | Winter |

| Configurations | | Mean Wind Criteria Speed (mph) | | Effective Gust Criteria (mph) | |
|---|---|---|---|---|---|
| A | No Build | ≤ 12 | Comfortable for Sitting | ≤ 31 | Acceptable |
| B | Phase 1A Mitigation | 13 - 15 | Comfortable for Standing | > 31 | Unacceptable |
| C | Phase 1B Mitigation | 16 - 19 | Comfortable for Walking | | |
| D | Phase 2 Mitigation | 20 - 27 | Uncomfortable for Walking | | |
| E | Phase 3 Mitigation | > 27 | Dangerous Conditions | | |

Wind Speeds are for a 1% probability of exceedance

# APPENDIX A

# APPENDIX A: DRAWING LIST FOR MODEL CONSTRUCTION

The drawings and information listed below were received from Stantec Architecture and were used to construct the scale model of the proposed 776 Summer Street. Should there be any design changes that deviate from this list of drawings, the results may change. Therefore, if changes in the design are made, it is recommended that RWDI be contacted and requested to review their potential effects on wind conditions.

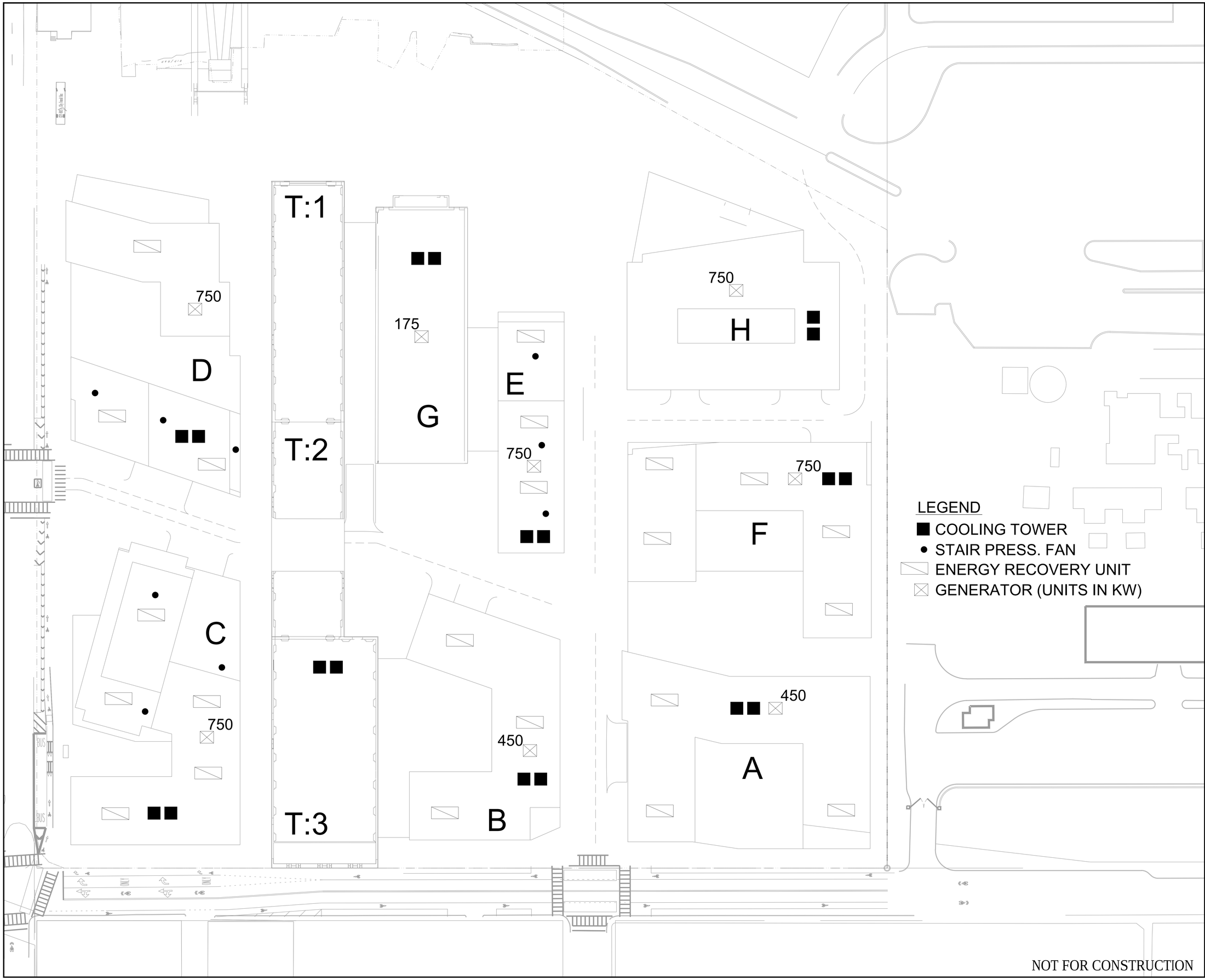
| File Name | File Type | Date Received (dd/mm/yyyy) |
|---|---|---|
| **2018_06_26_776_Summer_Masterplan_PHASING.skp** | SketchUp | 26/06/2018 |

# NOISE
# SUPPORTING DATA

---

- Project Development Plan
- Noise Monitoring Data
- Mechanical Equipment Specifications
- Project Sound Level Analysis
- HUD Analysis

# Project Development Plan




NOT FOR CONSTRUCTION

WSP USA Buildings, Inc.
88 Black Falcon Ave. Suite 210
Boston, MA 02210

T (617) 210-1600
F (617) 210-1600
wsp.com

WRITTEN DIMENSIONS ON THESE DRAWINGS SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS. THESE DRAWING SHALL BE COPIED FROM THE ORIGINAL BLUEPRINTS AND ARE APPROXIMATELY TO SCALE. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE PROJECT AND SHALL NOTIFY THE ENGINEER OF ANY VARIATIONS FROM THE DIMENSIONS AND CONDITIONS SHOWN ON THESE DRAWINGS

| NO. | REVISION | DATE |
|---|---|---|
| | | |

PROJECT

776 SUMMER ST.

OWNER

HILCO
REAL ESTATE

TITLE

MECHANICAL AND
ELECTRICAL
PRELIMINARY
ROOF PLAN

| | |
|---|---|
| PROJECT NO.: | B1708740.000 |
| DATE: | JULY 02, 2018 |
| DWN. BY: | CKD. BY: |
| SCALE: | |

ME100

Jul 03, 2018 - 11:29am R:\B\17\B1708740.000_776_Summer_St_MEP_Phase_II\CAD\HVAC\SHEETS\M100.dwg User: usdt01600

# Noise Monitoring Data

## Summary

| | |
|---|---|
| **File Name on Meter** | VHB_Main.010 |
| **File Name on PC** | SLM_0002555_VHB_Main_010.00.ldbin |
| **Serial Number** | 0002555 |
| **Model** | Model 831 |
| **Firmware Version** | 2.314 |
| **User** | EDI |
| **Location** | 637 East 1st St - Day |
| **Job Description** | L St |
| **Note** | |

## Measurement

| | | |
|---|---|---|
| **Description** | | |
| **Start** | 2018-07-20 12:40:02 | |
| **Stop** | 2018-07-20 13:00:03 | |
| **Duration** | 00:20:01.4 | |
| **Run Time** | 00:20:01.4 | |
| **Pause** | 00:00:00.0 | |
| | | |
| **Pre Calibration** | 2018-07-20 12:39:19 | |
| **Post Calibration** | 2018-07-20 13:00:48 | |
| **Calibration Deviation** | -0.04 dB | |

## Results

| | | | |
|---|---|---|---|
| **$LA_{Seq}$** | 64.3 dB | | |
| **LASE** | 95.1 dB | | |
| **EAS** | 359.347 µPa²h | | |
| **$LA_{Speak\ (max)}$** | 2018-07-20 12:43:06 | 96.4 dB | |
| **$LAS_{max}$** | 2018-07-20 12:43:06 | 81.5 dB | |
| **$LAS_{min}$** | 2018-07-20 12:41:56 | 50.1 dB | |
| **SEA** | -99.9 dB | | |

## Statistics

| | |
|---|---|
| **LAS1.00** | 73.9 dB |
| **LAS10.00** | 67.4 dB |
| **LAS33.30** | 63.4 dB |
| **LAS50.00** | 61.2 dB |
| **LAS90.00** | 54.3 dB |
| **LAS99.00** | 51.0 dB |

## Summary

| | |
|---|---|
| **File Name on Meter** | VHB_Main.009 |
| **File Name on PC** | SLM_0002555_VHB_Main_009.00.ldbin |
| **Serial Number** | 0002555 |
| **Model** | Model 831 |
| **Firmware Version** | 2.314 |
| **User** | EDI |
| **Location** | 637 East 1st St - Day |
| **Job Description** | L St |
| **Note** | |

## Measurement

| | | |
|---|---|---|
| **Description** | | |
| **Start** | 2018-07-20 00:04:22 | |
| **Stop** | 2018-07-20 00:28:40 | |
| **Duration** | 00:24:17.7 | |
| **Run Time** | 00:24:17.7 | |
| **Pause** | 00:00:00.0 | |
| | | |
| **Pre Calibration** | 2018-07-20 00:03:56 | |
| **Post Calibration** | 2018-07-20 00:29:29 | |
| **Calibration Deviation** | -0.09 dB | |

## Results

| | | |
|---|---|---|
| **$LA_{Seq}$** | 58.4 dB | |
| **LASE** | 90.1 dB | |
| **EAS** | 112.958 µPa²h | |
| **$LA_{Speak\ (max)}$** | 2018-07-20 00:07:46 | 97.4 dB |
| **$LAS_{max}$** | 2018-07-20 00:11:23 | 73.7 dB |
| **$LAS_{min}$** | 2018-07-20 00:20:19 | 43.0 dB |
| **SEA** | -99.9 dB | |

## Statistics

| | |
|---|---|
| **LAS1.00** | 70.8 dB |
| **LAS10.00** | 61.6 dB |
| **LAS33.30** | 50.3 dB |
| **LAS50.00** | 47.1 dB |
| **LAS90.00** | 44.6 dB |
| **LAS99.00** | 43.7 dB |

# Mechanical Equipment Specifications

Specification sheet

# Diesel generator set QSB7 series engine

100 – 200 kW 60Hz



## Description

Cummins® commercial generator sets are fully integrated power generation systems providing optimum performance, reliability and versatility for stationary Standby and Prime Power applications.

## Features

**Cummins heavy-duty engine** - Rugged 4-cycle, industrial diesel delivers reliable power, low emissions and fast response to load changes.

**Alternator** - Several alternator sizes offer selectable motor starting capability with low reactance 2/3 pitch windings, low waveform distortion with non-linear loads and fault clearing short-circuit capability.

**Control system** – The PowerCommand® 1.1 electronic control is standard equipment and provides total genset system integration including automatic remote starting/stopping, precise frequency and voltage regulation, alarm and status message display, output metering, auto-shutdown at fault detection and NFPA 110 Level 1 compliance. The optional PowerCommand 2.2 control is UL 508 Listed and provides AmpSentry™ protection.

**Cooling system** - Standard integral set-mounted radiator system, designed and tested for rated ambient temperatures, simplifies facility design requirements for rejected heat.

**Enclosures** - Optional weather protective and sound attenuated enclosures are available.

**NFPA** - The genset accepts full rated load in a single step in accordance with NFPA 110 for Level 1 systems.

**Warranty and service** - Backed by a comprehensive warranty and worldwide distributor network.

| | Standby rating | | Prime rating | | Continuous rating | | Data sheets | |
|---|---|---|---|---|---|---|---|---|
| Model | 60 Hz kW (kVA) | 50 Hz kW (kVA) | 60 Hz kW (kVA) | 50 Hz kW (kVA) | 60 Hz kW (kVA) | 50 Hz kW (kVA) | 60 Hz | 50 Hz |
| DSGAA | 100 (125) | | 90 (113) | | | | D-3349 | |
| DSGAB | 125 (156) | | 113 (141) | | | | D-3350 | |
| DSGAC | 150 (188) | | 135 (169) | | | | D-3351 | |
| DSGAD | 175 (219) | | 160 (200) | | | | D-3516 | |
| DSGAE | 200 (250) | | 180 (225) | | | | D-3517 | |


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## Generator set specifications

| | |
|---|---|
| Governor regulation class | ISO8528 Part 1 Class G3 |
| Voltage regulation, no load to full load | ± 1.0% |
| Random voltage variation | ± 0.5% |
| Frequency regulation | Isochronous |
| Random frequency variation | ± 0.25% |
| Radio frequency emissions compliance | Meets requirements of most industrial and commercial applications. |

## Engine specifications

| | |
|---|---|
| Bore | 107 mm (4.21 in) |
| Stroke | 124.0 mm (4.88 in) |
| Displacement | 6.69 L (408 $in^3$) |
| Configuration | Cast iron, in-line, 6 cylinder |
| Battery capacity | 1100 amps minimum at ambient temperature of -18 °C to 0 °C (0 °F to 32 °F) |
| Battery charging alternator | 100 amps |
| Starting voltage | 12 volt, negative ground |
| Fuel system | Direct injection: number 2 diesel fuel, fuel filter, automatic electric fuel shutoff |
| Fuel filter | Single element, 10 micron filtration, spin-on fuel filter with water separator |
| Air cleaner type | Dry replaceable element |
| Lube oil filter type(s) | Spin-on, full flow |
| Standard cooling system | High ambient radiator Alternator specifications |

## Alternator specifications

| | |
|---|---|
| Design | Brushless, 4 pole, drip proof, revolving field |
| Stator | 2/3 pitch |
| Rotor | Single bearing, flexible discs |
| Insulation system | Class H |
| Standard temperature rise | 150 ºC Standby at 40 °C ambient |
| Exciter type | Torque match (shunt) standard, PMG optional |
| Phase rotation | A (U), B (V), C (W) |
| Alternator cooling | Direct drive centrifugal blower fan |
| AC waveform Total Harmonic Distortion (THDV) | < 5% no load to full linear load, < 3% for any single harmonic |
| Telephone Influence Factor (TIF) | < 50 per NEMA MG1-22.43 |
| Telephone Harmonic Factor (THF) | < 3% |

## Available voltages

**60 Hz Three phase Line-Neutral/Line-Line**

- 110/190
- 110/220
- 115/200
- 115/230 Delta
- 120/208
- 120/240 Delta
- 127/220
- 139/240
- 220/380
- 230/400
- 240/416
- 255/440
- 277/480
- 347/600

**60 Hz Single phase Line-Neutral/Line-Line**

- 110/220
- 115/230
- 120/240

(not available with DSGAD or DSGAE)

Note: Consult factory for other voltages.

## Generator set options and accessories

**Engine**
- 120 V 150 W lube oil heater
- 120/240 V 1500 W coolant heater

**Fuel System**
- 24 hour sub-base tank (dual wall)

**Alternator**
- 105 °C rise
- 125 °C rise
- 120 V 100 W anti-condensation heater
- PMG excitation
- Single phase

**Exhaust system**
- Heavy duty exhaust elbow
- Slip on exhaust connection


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## Generator set options and accessories (continued)

**Generator set**

- Battery
- Battery charger
- Enclosure: aluminium, steel, weather protective or sound attenuated
- Main line circuit breaker
- Remote annunciator panel
- Spring isolators
- 2 year Prime power warranty
- 2 year Standby power warranty
- 5 year Basic power warranty

Note: Some options may not be available on all models - consult factory for availability.


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# Control system PowerCommand 1.1




**PowerCommand** is an integrated generator set control system providing voltage regulation, engine protection, operator interface and isochronous governing (optional). Major features include:

- Battery monitoring and testing features and smart starting control system.
- Standard PCCNet interface to devices such as remote annunciator for NFPA 110 applications.
- Control boards potted for environmental protection.
- Control suitable for operation in ambient temperatures from -40 °C to +70 °C (-40 °F to +158 °F) and altitudes to 5000 meters (13,000 feet).
- Prototype tested; UL, CSA, and CE compliant.
- InPower PC-based service tool available for detailed diagnostics.

**Operator/display panel**

- Manual off switch
- Alpha-numeric display with pushbutton access for viewing engine and alternator data and providing setup, controls and adjustments (English or international symbols).
- LED lamps indicating genset running, not in auto, common warning, common shutdown, manual run mode and remote start
- Suitable for operation in ambient temperatures from -20 °C to +70 °C
- Bargraph display (optional)

**AC protection**

- Over current warning and shutdown
- Over and under voltage shutdown
- Over and under frequency shutdown
- Over excitation (loss of sensing) fault
- Field overload
-

**Engine protection**

- Overspeed shut down
- Low oil pressure warning and shut down
- High coolant temperature warning and shut down
- Low coolant level warning or shut down
- Low coolant temperature warning
- High low and weak battery voltage warning
- Fail to start (overcrank) shut down
- Fail to crank shut down
- Redundant start disconnect
- Cranking lockout
- Sensor failure indication
- Low fuel level warning or shutdown
- Fuel-in-rupture-basin warning or shutdown
-
- Alternator data
- Line-to-Line and Line-to-Neutral AC volts
- 3-phase AC current
- Frequency
- Total kVA
-

**Engine data**

- DC voltage
- Lube oil pressure
- Coolant temperature
- Engine speed

**Other data**

- Genset model data
- Start attempts, starts, running hours
- Fault history
- RS485 Modbus® interface
- Data logging and fault simulation (requires InPower service tool)

**Digital governing (optional)**

- Integrated digital electronic isochronous governor
- Temperature dynamic governing

**Digital voltage regulation**

- Integrated digital electronic voltage regulator
- 2-phase Line-to-Line sensing
- Configurable torque matching

**Control functions**

- Time delay start and cooldown
- Cycle cranking
- PCCNet interface
- (2) Configurable inputs
- (2) Configurable outputs
- Remote emergency stop
- Glow plug control (some models)

**Options**

- Auxiliary output relays (2)
- 120/240 V, 100 W anti-condensation heater
- Remote annunciator with (3) configurable inputs and (4) configurable outputs
- PMG alternator excitation
- PowerCommand iWatch web server for remote monitoring and alarm notification (loose)
- Auxiliary, configurable signal inputs (8) and configurable relay outputs (8)
- Digital governing
- AC output analog meters (bargraph)
- Color-coded graphical display of:
- 3-phase AC voltage
- 3-phase current
- Frequency
- kVa
- Remote operator panel
- PowerCommand 2.2 control with AmpSentry protection

For further detail see document S-1531.


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## Ratings definitions

**Emergency Standby Power (ESP)**:

Applicable for supplying power to varying electrical loads for the duration of power interruption of a reliable utility source. Emergency Standby Power (ESP) is in accordance with ISO 8528. Fuel Stop power in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.

**Limited-Time Running Power (LTP)**:

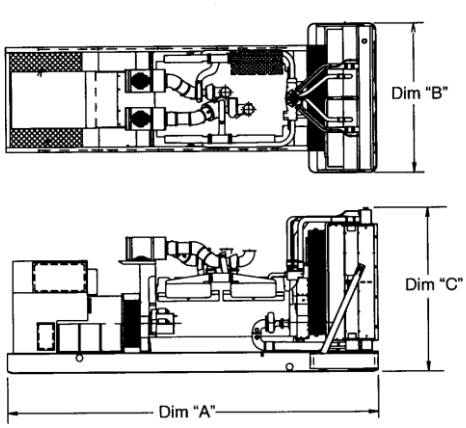
Applicable for supplying power to a constant electrical load for limited hours. Limited-Time Running Power (LTP) is in accordance with ISO 8528.

**Prime Power (PRP)**:

Applicable for supplying power to varying electrical loads for unlimited hours. Prime Power (PRP) is in accordance with ISO 8528. Ten percent overload capability is available in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.

**Base Load (Continuous) Power (COP)**:

Applicable for supplying power continuously to a constant electrical load for unlimited hours. Continuous Power (COP) in accordance with ISO 8528, ISO 3046, AS 2789, DIN 6271 and BS 5514.




This outline drawing is for reference only. See respective model data sheet for specific model outline drawing number.

**Do not use for installation design**

| Model | Dim "A" mm (in.) | Dim "B" mm (in.) | Dim "C" mm (in.) | Set weight* dry kg (lbs) | Set weight* wet kg (lbs) |
|---|---|---|---|---|---|
| **DGDB** | 2656 (104.6) | 1100 (43.3) | 1549 (61) | | 1180 (2602) |
| **DSGAB** | 2656 (104.6) | 1100 (43.3) | 1549 (61) | | 1225 (2700) |
| **DSGAC** | 2656 (104.6) | 1100 (43.3) | 1549 (61) | | 1263 (2784) |
| **DSGAD** | 2656 (104.6) | 1100 (43.3) | 1549 (61) | | 1361 (3000) |
| **DSGAE** | 2656 (104.6) | 1100 (43.3) | 1549 (61) | | 1361 (3000) |

*Note: Weights represent a set with standard features. See outline drawings for weights of other configurations.

## Codes and standards

Codes or standards compliance may not be available with all model configurations – consult factory for availability.

| | | | |
|---|---|---|---|
| | This generator set is designed in facilities certified to ISO 9001 and manufactured in facilities certified to ISO 9001 or ISO 9002. | **UL2200** | The generator set is available listed to UL 2200. |
| | The Prototype Test Support (PTS) program verifies the performance integrity of the generator set design. Cummins products bearing the PTS symbol meet the prototype test requirements of NFPA 110 for Level 1 systems. | **U.S. EPA** | Engine certified to Stationary Emergency U.S. EPA New Source Performance Standards, 40 CFR 60 subpart IIII Tier 3 exhaust emission levels. U.S. applications must be applied per this EPA regulation |
| **CSA** | All low voltage models are certified to CSA C22.2 No.100 and CSA C22.2 No.14. | **International Building Code** | The generator set package is available certified for seismic application in accordance with the following International Building Code: IBC2000, IBC2003 IBC2006, IBC2009 and IBC2012. |

**Warning:** Back feed to a utility system can cause electrocution and/or property damage. Do not connect to any building's electrical system except through an approved device or after building main switch is open.

**For more information contact your local Cummins distributor or visit power.cummins.com**

**Our energy working for you.™**

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S-1544 (10/17)

# Sound data

**450DFEJ 60 Hz**

## Sound pressure level @ 7 meters, dB(A)

See notes 1-8 listed below

| Configuration | | Measurement location number | | | | | | | | Average |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | |
| Standard – unhoused | Infinite exhaust | 89 | 92 | 92 | 91 | 88 | 91 | 91 | 93 | 91 |
| F183 – residential muffler | Mounted muffler | 87 | 90 | 90 | 88 | 87 | 88 | 87 | 90 | 89 |
| F200 – weather | Mounted muffler | 88 | 89 | 84 | 87 | 89 | 87 | 84 | 90 | 88 |
| F201 – quiet site II first stage | Mounted muffler | 87 | 88 | 83 | 82 | 78 | 80 | 82 | 89 | 85 |
| F202 – quiet site II second stage | Mounted muffler | 73 | 73 | 72 | 74 | 75 | 75 | 75 | 74 | 74 |

## Sound power level, dB(A)

See notes 2-6, 9, 10 listed below

| Configuration | | Octave band center frequency (Hz) | | | | | | | | Overall sound power level |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 | |
| Standard – unhoused | Infinite exhaust | 85 | 100 | 103 | 110 | 112 | 113 | 108 | 105 | 118 |
| F183 – residential muffler | Mounted muffler | 104 | 114 | 113 | 110 | 108 | 107 | 101 | 103 | 119 |
| F200 – weather | Mounted muffler | 102 | 108 | 104 | 108 | 110 | 109 | 106 | 101 | 116 |
| F201 – quiet site II first stage | Mounted muffler | 102 | 108 | 104 | 107 | 109 | 107 | 105 | 98 | 115 |
| F202 – quiet site II second stage | Mounted muffler | 83 | 92 | 95 | 95 | 97 | 99 | 96 | 90 | 104 |

## Exhaust sound power level, dB(A)

| Open exhaust (no muffler) @ rated load | Octave band center frequency (Hz) | | | | | | | | Overall sound pressure level |
|---|---|---|---|---|---|---|---|---|---|
| | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 | |
| | 103 | 119 | 125 | 123 | 125 | 126 | 127 | 121 | 133 |

Note:

1. Position 1 faces the engine front. The positions proceed around the generator set in a counter-clockwise direction in 45° increments. All positions are at 7 m (23 ft) from the surface of the generator set and 1.2 m (48 in.) from floor level.
2. Sound levels are subject to instrumentation, measurement, installation and manufacturing variability.
3. Sound data with remote-cooled generator sets are based on rated loads without cooling fan noise.
4. Sound levels for aluminum enclosures are approximately 2 dB(A)s higher than listed sound levels for steel enclosures.
5. Sound data for generator set with infinite exhaust do not include exhaust noise.
6. Data is based on full rated load with standard radiator-cooling fan package.
7. Sound pressure levels are measured per ANSI S1.13 and ANSI S12.18, as applicable.
8. Reference sound pressure is 20 µPa.
9. Sound power levels per ISO 3744 and ISO 8528-10, as applicable.
10. Reference power = 1 pw ($10^{-12}$ W).
11. Exhaust sound power levels are per ISO 6798, as applicable.

# Sound data
## 750DQCB 60 Hz

## Sound pressure level @ 7 meters, dB(A)

See notes 1-8 listed below

| Configuration | | Measurement location number | | | | | | | | Average |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | |
| Standard - unhoused | Infinite exhaust | 93.1 | 97.3 | 96.5 | 96.2 | 95.1 | 94.6 | 94.1 | 94.0 | 95.3 |
| F200 - weather | Mounted muffler | 87.4 | 92.3 | 81.2 | 82.8 | 90.5 | 81.5 | 78.5 | 87.9 | 87.6 |
| F201 - quiet site II first stage | Mounted muffler | 74.4 | 75.1 | 76.7 | 82.6 | 90.5 | 80.8 | 72.1 | 72.2 | 82.9 |
| F202 - quiet site II second stage | Mounted muffler | 72.1 | 77.4 | 78.2 | 74.4 | 78.2 | 71.7 | 73.2 | 72.5 | 74.8 |

## Sound power level, dB(A)

See notes 2-6, 9, 10 listed below

| Configuration | | Octave band center frequency (Hz) | | | | | | | | Overall sound power level |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 | |
| Standard - unhoused | Infinite exhaust | 85.8 | 107.3 | 110.1 | 114.2 | 116.8 | 116.6 | 119.0 | 119.9 | 125 |
| F200 - weather | Mounted muffler | 93.4 | 105.4 | 107.7 | 107.6 | 108.1 | 105.1 | 108.0 | 109.1 | 116.0 |
| F201 - quiet site II first stage | Mounted muffler | 92.4 | 104.1 | 102.2 | 101.0 | 101.3 | 100.3 | 103.8 | 105.6 | 111.5 |
| F202 - quiet site II second stage | Mounted muffler | 86.3 | 100.0 | 97.8 | 92.6 | 99.8 | 98.5 | 102.9 | 101.5 | 108.4 |

## Exhaust sound power level, dB(A)

| Open exhaust (no muffler rated load) | Octave band center frequency (Hz) | | | | | | | | Sound power level |
|---|---|---|---|---|---|---|---|---|---|
| | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 | |
| | 103.9 | 113.8 | 123.1 | 121.6 | 124.1 | 124.7 | 123.0 | 121.4 | 131.4 |

Note:

1. Position 1 faces the engine front. The positions proceed around the generator set in a counter-clockwise direction in 45° increments. All positions are at 7 m (23 ft) from the surface of the generator set and 1.2 m (48”) from floor level.
2. Sound levels are subject to instrumentation, measurement, installation and manufacturing variability.
3. Sound data with remote-cooled generator sets are based on rated loads without cooling fan noise.
4. Sound levels for aluminum enclosures are approximately 2 dB(A)s higher than listed sound levels for steel enclosures.
5. Sound data for generator set with infinite exhaust do not include exhaust noise.
6. Data is based on full rated load with standard radiator-cooling fan package.
7. Sound pressure levels are measured per ANSI S1.13 and ANSI S12.18, as applicable.
8. Reference sound pressure is 20 µPa.
9. Sound power levels per ISO 3744 and ISO 8528-10, as applicable.
10. Reference power = 1 pw ($10^{-12}$ W).
11. Exhaust sound pressure levels are per ISO 6798, as applicable.
12. Sound pressure level at different microphone locations and average sound pressure level at 7 m for F202, F201 and F200 enclosures are based on Insertion loss calculations.
13. Average sound pressure level at 7 m for F202- Quiet Site II Second Stage enclosure is calculated using overall frequency spectrum data of the insertion loss.

COOK

Loren Cook Company certifies that the model shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.

# CPA-A

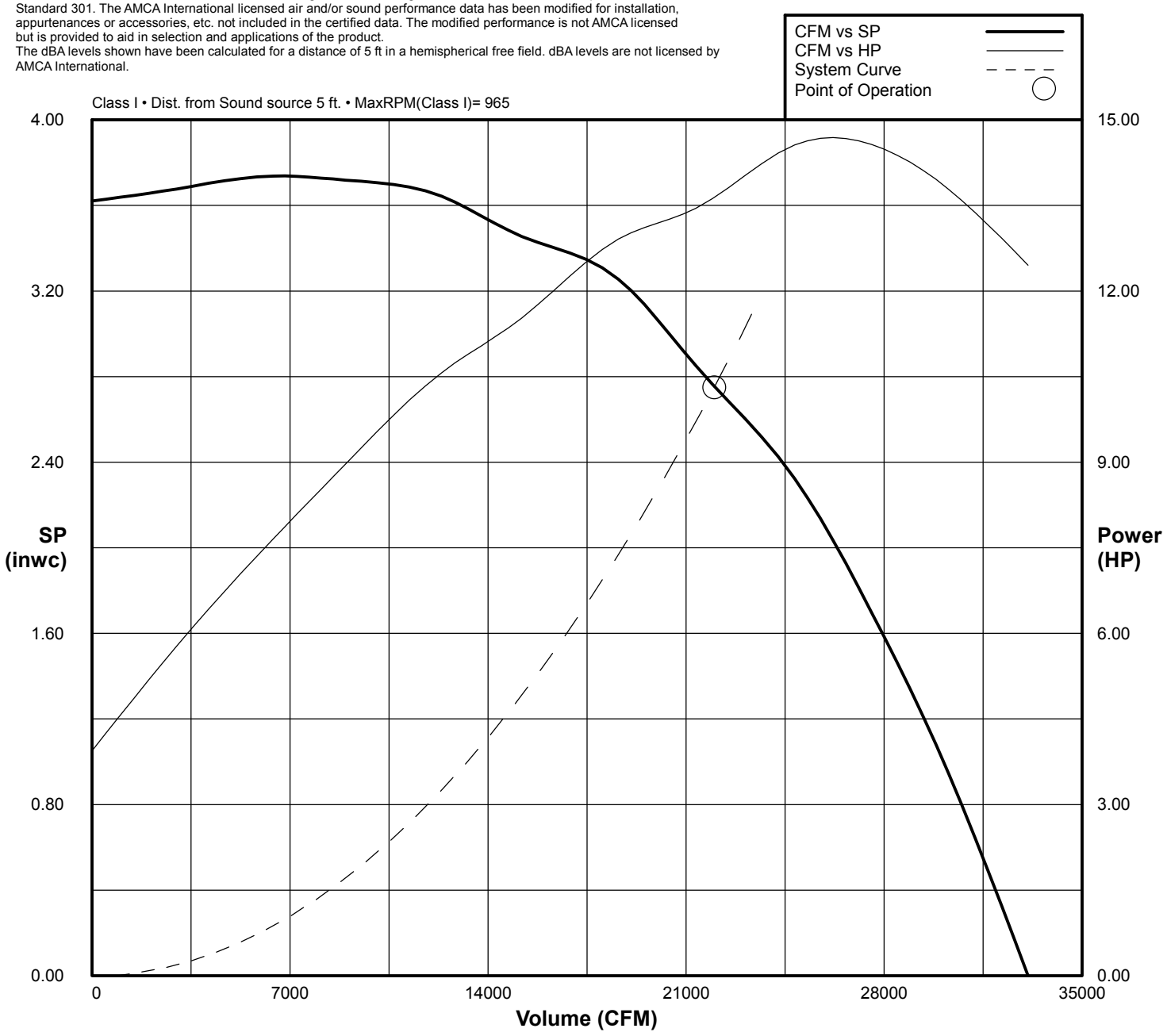
## Performance

| Catalog Number | CFM | SP | Fan RPM | Power* HP | Motor HP | OVEL (fpm) | TSPD (fpm) | SE | TEMP (ºF) | ELEV (Ft) | *Drive Loss Included |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 402 CPA-A | 22000 | 2.75 | 788 | 13.6 | 15 | 2338 | 8303 | 73% | 70 | 0 | 5% |

## Sound Data 8 Octave Bands 10 $^{-12}$ Watts

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | LwA | dBA |
|---|---|---|---|---|---|---|---|---|---|---|
| Inlet | 85 | 95 | 85 | 80 | 76 | 73 | 69 | 66 | 84 | 72 |
| Outlet | 89 | 94 | 87 | 83 | 78 | 74 | 71 | 67 | 85 | 74 |

Performance certified is for installation type B: free inlet, ducted outlet. Power rating (BHP/kW) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The sound power level ratings shown are in decibels, referred to 10(-12) watts calculated per AMCA Standard 301. Values shown are for inlet Lwi, LwiA and outlet Lwo, LwoA sound power levels for installation type B: free inlet, ducted outlet. Outlet ratings include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA Standard 301. The AMCA International licensed air and/or sound performance data has been modified for installation, appurtenances or accessories, etc. not included in the certified data. The modified performance is not AMCA licensed but is provided to aid in selection and applications of the product.
The dBA levels shown have been calculated for a distance of 5 ft in a hemispherical free field. dBA levels are not licensed by AMCA International.



VENMAR CES

E.VanUytfanck V.27-4

# Final Balance Run : Evaporator

***Project:***

***Job/Tag:*** ZJ030-08 - ERU-1

Model # 4EJ0806C

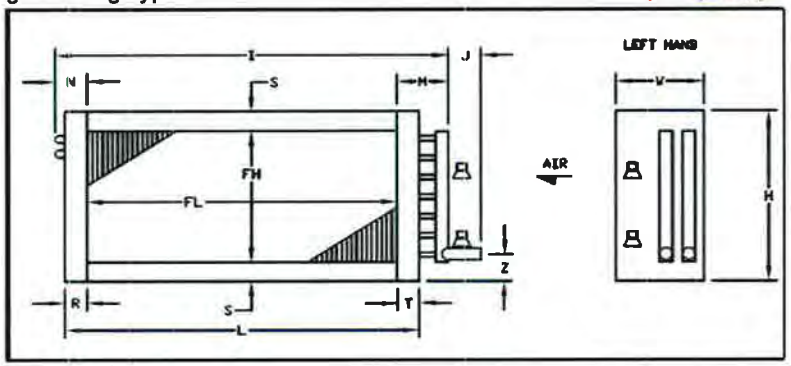
| Construction Items | |
|---|---|
| **Mode** | Rating |
| **Tube Dia** | 1/2 |
| **Tube Material** | 0.016 Copper |
| | |
| **Quantity** | 1 |
| **FH** | 70 |
| **FL** | 31.5 |
| **Rows** | 6 |
| **FPI** | 8 |
| **Fin Surface** | C |
| **Fin Material** | 0.0075 Aluminum |
| **Circuiting** | -14 |
| **Style** | EJ |
| **# Coil Banks** | 1 |
| **Coil Casing** | Galvanized |
| **Coil Hand** | Left |
| **Coating** | None |

| Entering | |
|---|---|
| **CFM Type** | SCFM |
| **SCFM** | 7,500 |
| **CFM** | 7,500 |
| **Elevation** | 0 |
| **EDB** | 79.9 |
| **EWB** | 66.8 |
| **Refrigerant** | 410A |
| **SuperHeat Temp.** | 8 |
| **Suction Temp** | 44.96 |
| | |
| **Liquid Temp.** | 100 |

| Leaving @ Suction #1 | |
|---|---|
| **Total Heat (Btu/h)** | 290,124 |
| **Sens Heat (Btu/h)** | 201,500 |
| **LDB (°F)** | 55 |
| **LWB (°F)** | 54.4 |
| **Refg Velocity (ft / min)** | **1570** |
| **APD (in. wg.)** | 0.72 |
| **# Circuits** | 14 |
| **Face Velocity (ft/min)** | 490 |
| **Cir Load** | 1.73 |
| **Refrigerant PD (lb/in^2)** | **8.7** |

Coil Solution COIL CALC 4

**Flanged Casing Type**




Connections
- (●) Straight
- ( ) 90° Upflow
- ( ) 90° Downflow

**NOTES:**

C) Coil is NOT certified by AHRI.
G) Rated performance is below the capacity or temperature
J) Coil Will Be Supplied With Multiple Distributors
M) Coil rating valid for Heatcraft coils only
U) User-entered circuiting. Check circuiting for dropped tut
W) Expansion Valve may require coupling for distributor siz

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**Dimensions (inches):**

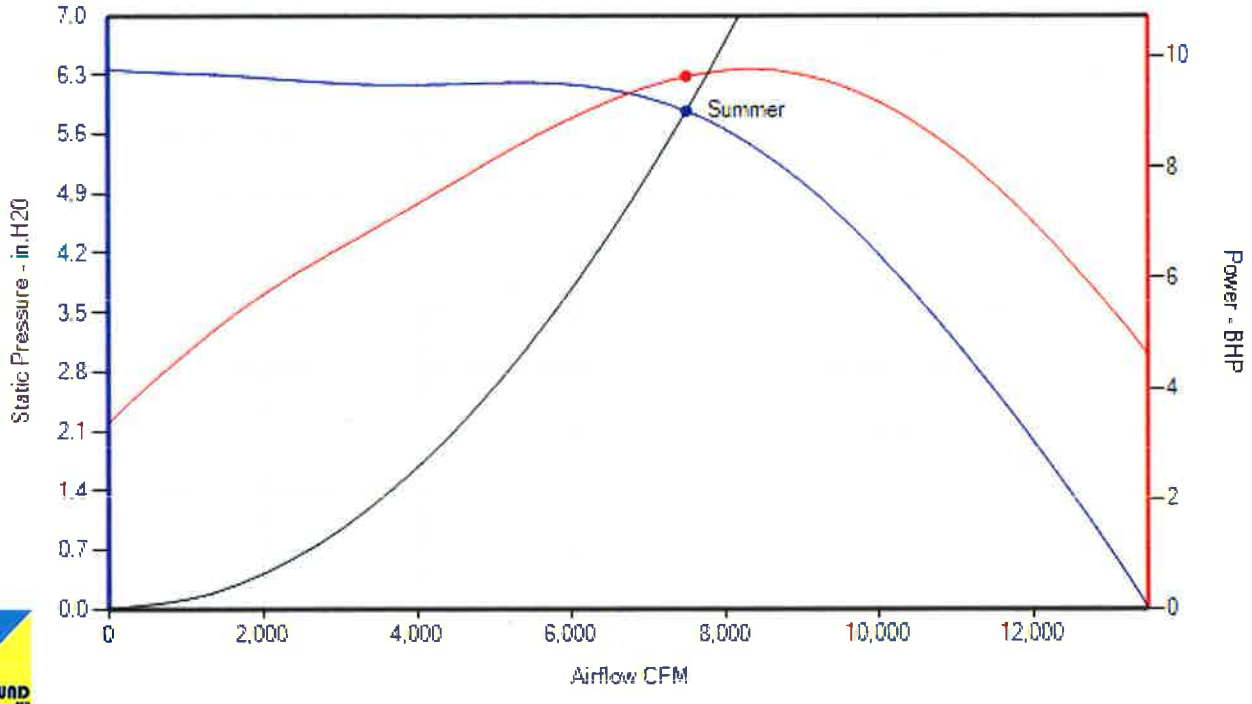
| | | | |
|---|---|---|---|
| FL= 31.5 | R= 1.5 | Weight = 257 lbs | Coating= None |
| FH= 70 | S= 1.5 | Suction Conn Size = (2) 1.375 in. | Label Kit= Yes |
| W= 9 | M= 4.12 | Liquid Conn. Size = (2) 1.125 in. | Bypass Kit Qty= 2 |
| H= 73 | N= 2.50 | Liquid Conn. Size (2) = N/A | Bypass Kit Size= Same as Liquid Conn. |
| L= 34.5 | T= 1.5 | Code 18/19 = 8014/10 | |
| I= 38.12 | J= 7 | Code 18/19 (2) = N/A | |
| | Z= 3.25 | | |

**Venmar Notes:** DX: Omit Equalizer Lines
Water Source Heat Pump Application
1in minimum between headers

*REF: 2934evu*

Project Name:
Unit Tag: ERU-1

Quote #: ZG058-11




AMCA Licensed for Sound and Air Performance Without Appurtenances (Accessories).
Performance certified is for installation type A: Free Inlet/Free Outlet
Power [bhp] excludes drives

| Operating Conditions | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Operating Condition | Usage (%) | CFM | SP (in.H20) | Cell Quantities | | | RPM | Hz | Fanwheel BHP | | Vel (ft/min) | Watts | FEG % Off Peak |
| | | | | On | Off | Failed | | | Each | Total | | | |
| Summer | 50 | 7,500 | 5.65 | 2 | 0 | 0 | 2,276 | 78.0 | 4.82 | 9.64 | 557 | 8,320 | FEG85 4% |

| Bare Fan Sound Power with Coplanar Silencer (dB re: 10E-12 watts) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Operating Condition | | 63 | 125 | 250 | 500 | 1K | 2K | 4K | 8K | LwA | Lw |
| Summer | Inlet | 81 | 78 | 93 | 85 | 80 | 80 | 79 | 78 | 90 | 95 |
| | Outlet | 87 | 82 | 88 | 81 | 79 | 75 | 73 | 64 | 85 | 92 |



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(819) 399-2175 Toll Free 1-866-483-6627 FAX (819) 399-2612

VENMAR CES

E.VanUytfanck V.27-4 2018.03.15

# Final Balance Run : Evaporator

***Project:***

***Job/Tag:*** ZJ030-08 - ERU-2

Model # 4EJ1006C

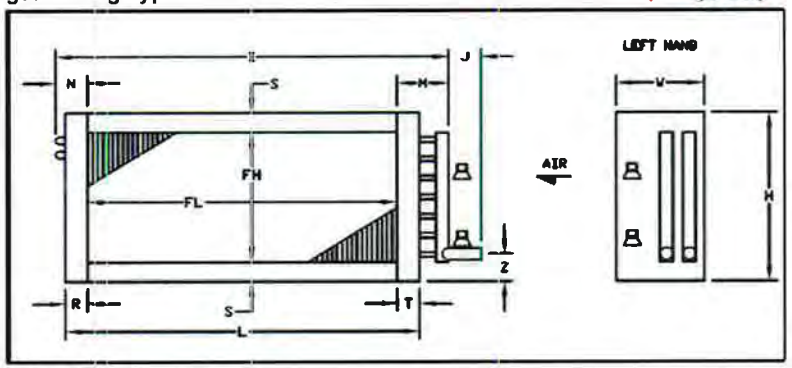
| Construction Items | |
|---|---|
| **Mode** | Rating |
| **Tube Dia** | 1/2 |
| **Tube Material** | 0.016 Copper |
| **Quantity** | 1 |
| **FH** | 80 |
| **FL** | 41.5 |
| **Rows** | 6 |
| **FPI** | 10 |
| **Fin Surface** | C |
| **Fin Material** | 0.0075 Aluminum |
| **Circuiting** | -24 |
| **Style** | EJ |
| **# Coil Banks** | 1 |
| **Coil Casing** | Galvanized |
| **Coil Hand** | Left |
| **Coating** | None |

| Entering | |
|---|---|
| **CFM Type** | SCFM |
| **SCFM** | 11,500 |
| **CFM** | 11,500 |
| **Elevation** | 0 |
| **EDB** | 79.9 |
| **EWB** | 66.8 |
| **Refrigerant** | 410A |
| **SuperHeat Temp.** | 8 |
| **Suction Temp** | 46.58 |
| **Liquid Temp.** | 100 |

| Leaving @ Suction #1 | |
|---|---|
| **Total Heat (Btu/h)** | 445,526 |
| **Sens Heat (Btu/h)** | 314,700 |
| **LDB (°F)** | 54.6 |
| **LWB (°F)** | 54.4 |
| **Refg Velocity (ft / min)** | **1365** |
| **APD (in. wg.)** | 0.87 |
| **# Circuits** | 24 |
| **Face Velocity (ft/min)** | 499 |
| **Cir Load** | 1.55 |
| **Refrigerant PD (lb/in^2)** | **5.46** |

Coil Solution COIL CALC 4

**Flanged Casing Type**




Connections
- (●) Straight
- ( ) 90° Upflow
- ( ) 90° Downflow

**NOTES:**

C) Coil is NOT certified by AHRI.
J) Coil Will Be Supplied With Multiple Distributors.
M) Coil rating valid for Heatcraft coils only.
U) User-entered circuiting. Check circuiting for dropped tut
W) Expansion Valve may require coupling for distributor siz
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**Dimensions (inches):**

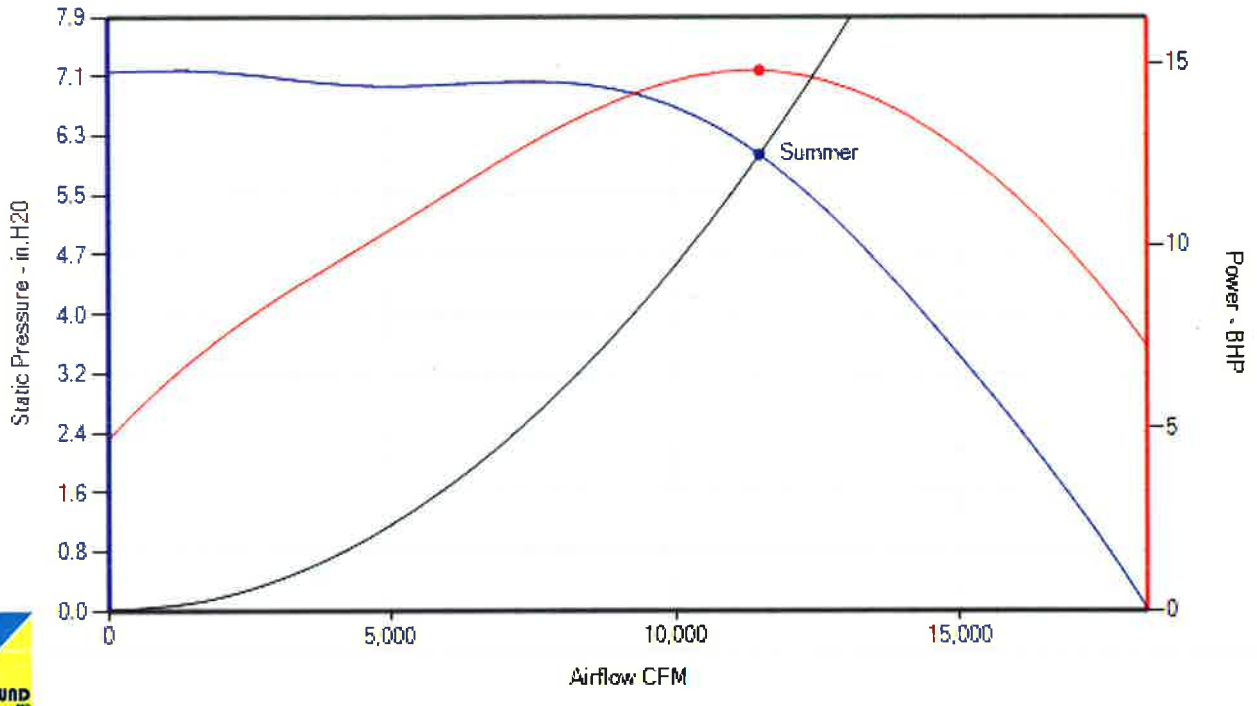
| | | | |
|---|---|---|---|
| FL= 41.5 | R= 1.5 | Weight = 387 lbs | Coating= None |
| FH= 80 | S= 1.5 | Suction Conn Size = (2) 1.375 in. | Label Kit= Yes |
| W= 9 | M= 4.50 | Liquid Conn. Size = (2) 1.375 in. | Bypass Kit Qty= 2 |
| H= 83 | N= 2.50 | Liquid Conn. Size (2) = N/A | Bypass Kit Size= Same as Liquid Conn. |
| L= 44.5 | T= 1.5 | Code 18/19 = 8024/15 | |
| I= 48.50 | J= 7 | Code 18/19 (2) = N/A | |
| | Z= 3.25 | | |

**Venmar Notes:** DX: Omit Equalizer Lines
Water Source Heat Pump Application
1in minimum between headers

*REF: 3912evu*

Project Name:
Unit Tag: ERU-2

Quote #: ZG058-11




AMCA Licensed for Sound and Air Performance Without Appurtenances (Accessories).
Performance certified is for installation type A: Free Inlet/Free Outlet
Power [bhp] excludes drives

**Operating Conditions**

| Operating Condition | Usage (%) | CFM | SP (in.H20) | Cell Quantities | | | RPM | Hz | Fanwheel BHP | | Vel (ft/min) | Watts | FEG % Off Peak |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | On | Off | Failed | | | Each | Total | | | |
| Summer | 50 | 11,500 | 5.75 | 2 | 0 | 0 | 2,412 | 82.0 | 7.39 | 14.79 | 609 | 12,469 | FEG85 0% |

**Bare Fan Sound Power with Coplanar Silencer (dB re: 10E-12 watts)**

| Operating Condition | | 63 | 125 | 250 | 500 | 1K | 2K | 4K | 8K | LwA | Lw |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Summer | Inlet | 84 | 82 | 95 | 94 | 85 | 84 | 81 | 79 | 94 | 98 |
| | Outlet | 89 | 85 | 91 | 89 | 85 | 80 | 75 | 65 | 90 | 96 |

VENMAR CES

E.VanUytfanck V.27-4 2018.03.15

# Final Balance Run : Evaporator

***Project:***

***Job/Tag:*** ZJ030-08 - ERU-3

Model # 4EJ0906C

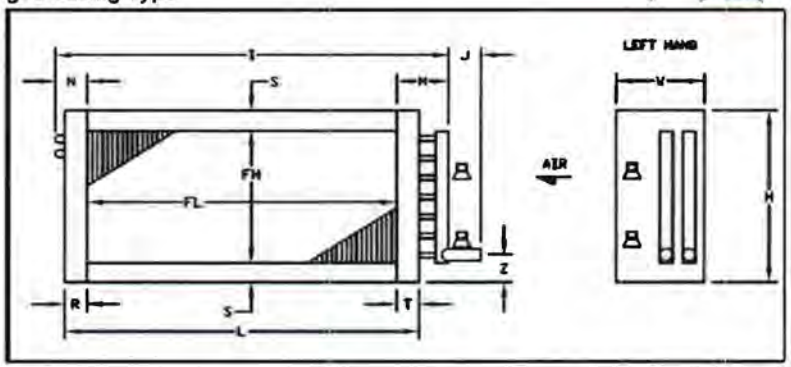
| Construction Items | |
|---|---|
| **Mode** | Rating |
| **Tube Dia** | 1/2 |
| **Tube Material** | 0.016 Copper |
| **Quantity** | 2 |
| **FH** | 45 |
| **FL** | 59.5 |
| **Rows** | 6 |
| **FPI** | 9 |
| **Fin Surface** | C |
| **Fin Material** | 0.0075 Aluminum |
| **Circuiting** | -18 |
| **Style** | EJ |
| **# Coil Banks** | 2 |
| **Coil Casing** | Galvanized |
| **Coil Hand** | Left |
| **Coating** | None |

| Entering | |
|---|---|
| **CFM Type** | SCFM |
| **SCFM** | 18,500 |
| **CFM** | 18,500 |
| **Elevation** | 0 |
| **EDB** | 80.8 |
| **EWB** | 67.5 |
| **Refrigerant** | 410A |
| **SuperHeat Temp.** | 8 |
| **Suction Temp** | 45.91 |
| **Liquid Temp.** | 100 |

| Leaving @ Suction #1 | |
|---|---|
| **Total Heat (Btu/h)** | 760,182 |
| **Sens Heat (Btu/h)** | 519,400 |
| **LDB (°F)** | 54.8 |
| **LWB (°F)** | 54.4 |
| **Refg Velocity (ft / min)** | **1572** |
| **APD (in. wg.)** | 0.8 |
| **# Circuits** | 18 |
| **Face Velocity (ft/min)** | 497 |
| **Cir Load** | 1.76 |
| **Refrigerant PD (lb/in^2)** | **6.47** |

Coil Solution COIL CALC 4

**Flanged Casing Type**




Connections
- (●) Straight
- ( ) 90° Upflow
- ( ) 90° Downflow

**NOTES:**

C) Coil is NOT certified by AHRI.
J) Coil Will Be Supplied With Multiple Distributors.
M) Coil rating valid for Heatcraft coils only.
U) User-entered circuiting. Check circuiting for dropped tub
W) Expansion Valve may require coupling for distributor siz

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**Dimensions (inches):**

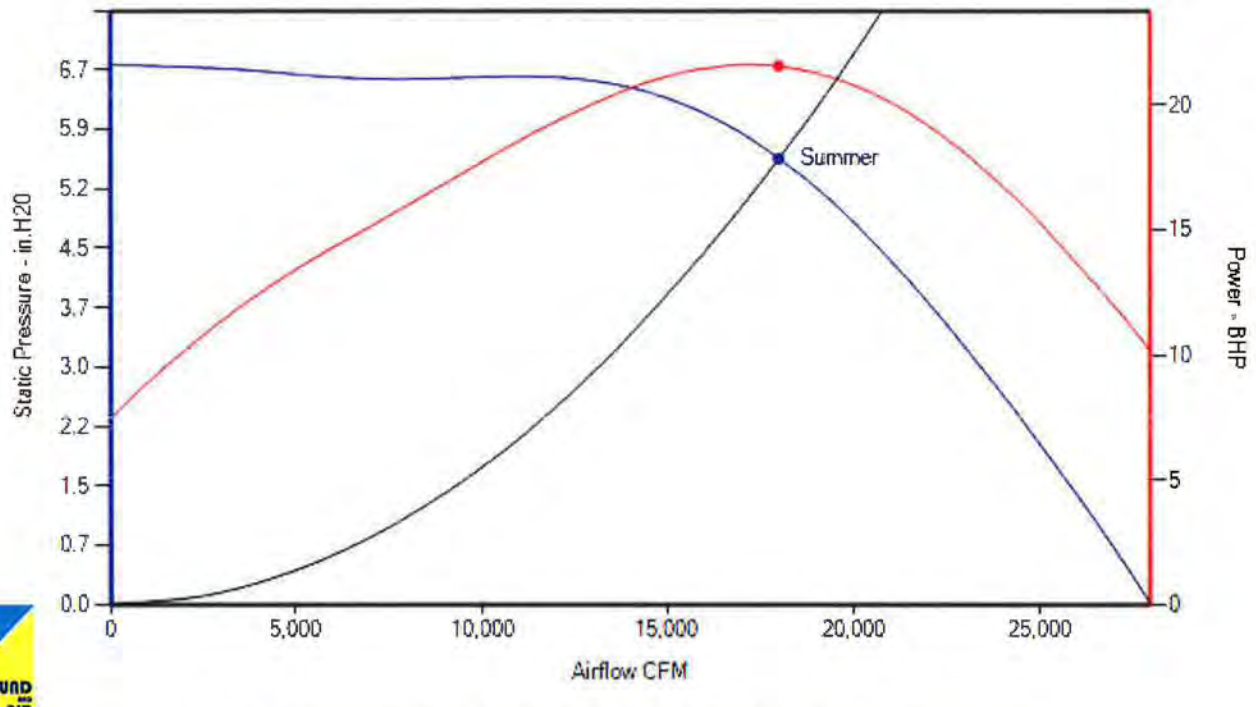
| | | | |
|---|---|---|---|
| FL= 59.5 | R= 1.5 | Weight = 293 lbs | Coating= None |
| FH= 45 | S= 1.5 | Suction Conn Size = (2) 1.375 in. | Label Kit= Yes |
| W= 9 | M= 4.50 | Liquid Conn. Size = (2) 1.125 in. | Bypass Kit Qty= 2 |
| H= 48 | N= 2.50 | Liquid Conn. Size (2) = N/A | Bypass Kit Size= Same as Liquid Conn. |
| L= 62.5 | T= 1.5 | Code 18/19 = 8018/12 | |
| I= 66.50 | J= 7 | Code 18/19 (2) = N/A | |
| | Z= 3.25 | | |

**Venmar Notes:** DX: Omit Equalizer Lines
Water Source Heat Pump Application
1in minimum between headers

*REF: 5806evu*

Project Name:
Unit Tag: EKU-3

Quote #: ZG058-11




AMCA Licensed for Sound and Air Performance Without Appurtenances (Accessories).
Performance certified is for installation type A: Free Inlet/Free Outlet
Power [bhp] excludes drives

**Operating Conditions**

| Operating Condition | Usage (%) | CFM | SP (in.H20) | Cell Quantities | | | RPM | Hz | Fanwheel BHP | | Vel (ft/min) | Watts | FEG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | On | Off | Failed | | | Each | Total | | | % Off Peak |
| Summer | 50 | 18,000 | 5.35 | 4 | 0 | 0 | 2,353 | 81.1 | 5.39 | 21.55 | 559 | 18,749 | FEG85 1% |

**Bare Fan Sound Power with Coplanar Silencer (dB re: 10E-12 watts)**

| Operating Condition | | 63 | 125 | 250 | 500 | 1K | 2K | 4K | 8K | LwA | Lw |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Summer | Inlet | 84 | 82 | 96 | 92 | 85 | 85 | 84 | 81 | 94 | 98 |
| | Outlet | 89 | 85 | 91 | 87 | 84 | 80 | 77 | 67 | 89 | 95 |

**Baltimore Aircoil Company**

# Cooling Tower Selection Report

Version: 8.9.1 NA
Product data correct as of: February 28, 2018

Project Name: 776 Summer Street
Selection Name: Building A, B
Project State/Province: Massachusetts
Project Country: United States
Date: March 15, 2018

## Model Information

| | |
|---|---|
| Product Line: | Series 1500 |
| Model: | XES15E-1212-11HN |
| Number of Units: | 2 |
| Fan Type: | Whisper Quiet Fan |
| Fan Motor: | (2) 5.00 = 10.00 HP/Unit |
| Total Standard Fan Power: | Full Speed, 10.00 BHP/Unit |
| Intake Option: | None |
| Internal Option: | None |
| Discharge Option: | None |

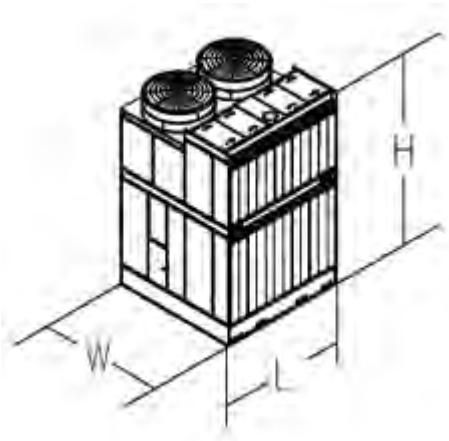
## Design Conditions

| | | |
|---|---|---|
| Flow Rate: | 1,800.00 | USGPM |
| Hot Water Temp.: | 95.00 | °F |
| Cold Water Temp.: | 85.00 | °F |
| Wet Bulb Temp.: | 78.00 | °F |
| Tower Pumping Head: | 7.23 | psi |
| Reserve Capability: | 2.63 | % |

**Thermal performance at design conditions and standard total fan motor power is certified by the Cooling Technology Institute (CTI).**

## Engineering Data, per Unit

| | | |
|---|---|---|
| Unit Length: | 11' 11.75" | |
| Unit Width: | 11' 10.00" | |
| Unit Height: | 17' 06.50" | |
| Air Flow: | 71,130 | CFM |
| Approximate Shipping Weight: | 9,010 | pounds |
| Heaviest Section: | 4,880 | pounds |
| Approximate Operating Weight: | 18,580 | pounds |
| Heater kW Data (Optional) | | |
| 0°F (-17.8°C) Ambient Heaters: | (1) 12 | kW |
| -20°F (-28.9°C) Ambient Heaters: | (1) 16 | kW |




Minimum Distance Required for Single Unit:
(For multiple units, refer to Layout Guidelines)

| | | |
|---|---|---|
| From Solid Wall: | 5.5 | ft. |
| From 50% Open Wall: | 3 | ft. |

Energy Rating:
110.39 per ASHRAE 90.1, ASHRAE 189 and CA Title 24.
This XE model is an extremely efficient model, with a base energy rating that meets or exceeds 2x the minimum ASHRAE 90.1 energy rating.

Note: These unit weights and dimensions account for the selected fan type for the standard cataloged drive configuration, but they do not account for other options/accessories. Please contact your local BAC sales representative for weights and dimensions of units with other options/accessories.

**Baltimore Aircoil Company**

# Cooling Tower Selection Report

Version: 8.9.1 NA
Product data correct as of: February 28, 2018

Project Name: 776 Summer Street
Selection Name: Building A, B
Project State/Province: Massachusetts
Project Country: United States
Date: March 15, 2018

## Model Information

Product Line: Series 1500
Model: XES15E-1212-11HN
Number of Units: 2
Fan Type: Whisper Quiet Fan
Fan Motor: (2) 5.00 = 10.00 HP/Unit
Total Standard Fan Power: Full Speed, 10.00 BHP/Unit
Intake Option: None
Internal Option: None
Discharge Option: None

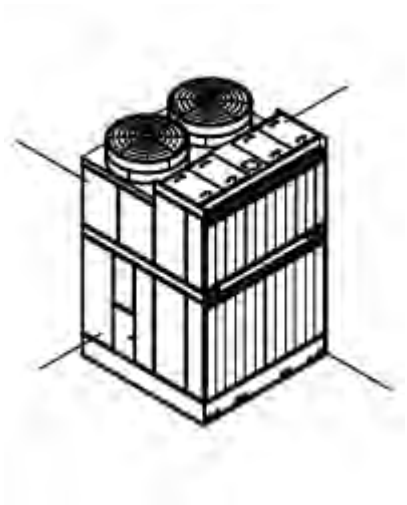
Octave band and A-weighted sound pressure levels (Lp) are expressed in decibels (dB) reference 0.0002 microbar. Sound power levels (Lw) are expressed in decibels (dB) reference one picowatt. Octave band 1 has a center frequency of 63 Hertz.

**Top**
**Sound Pressure (dB)**

| Octave Band | Distance 5 ft. | Distance 50 ft. |
|---|---|---|
| 1 | 73 | 63 |
| 2 | 74 | 63 |
| 3 | 69 | 59 |
| 4 | 64 | 53 |
| 5 | 64 | 54 |
| 6 | 57 | 47 |
| 7 | 54 | 43 |
| 8 | 50 | 39 |
| A-wgtd | **68** | **58** |

**Back**
**Sound Pressure (dB)**

| Octave Band | Distance 5 ft. | Distance 50 ft. |
|---|---|---|
| 1 | 64 | 63 |
| 2 | 67 | 61 |
| 3 | 59 | 55 |
| 4 | 53 | 50 |
| 5 | 51 | 48 |
| 6 | 40 | 40 |
| 7 | 37 | 34 |
| 8 | 32 | 30 |
| A-wgtd | **57** | **53** |



**End**
**Sound Pressure (dB)**

| Octave Band | Distance 5 ft. | Distance 50 ft. |
|---|---|---|
| 1 | 65 | 61 |
| 2 | 66 | 58 |
| 3 | 58 | 52 |
| 4 | 52 | 47 |
| 5 | 49 | 45 |
| 6 | 40 | 37 |
| 7 | 37 | 32 |
| 8 | 31 | 27 |
| A-wgtd | **56** | **50** |

**End**
**Sound Pressure (dB)**

| Octave Band | Distance 5 ft. | Distance 50 ft. |
|---|---|---|
| 1 | 65 | 61 |
| 2 | 66 | 58 |
| 3 | 58 | 52 |
| 4 | 52 | 47 |
| 5 | 49 | 45 |
| 6 | 40 | 37 |
| 7 | 37 | 32 |
| 8 | 31 | 27 |
| A-wgtd | **56** | **50** |

**Air Inlet**
**Sound Pressure (dB)**

| Octave Band | Distance 5 ft. | Distance 50 ft. |
|---|---|---|
| 1 | 73 | 66 |
| 2 | 75 | 65 |
| 3 | 71 | 58 |
| 4 | 65 | 55 |
| 5 | 63 | 53 |
| 6 | 59 | 48 |
| 7 | 59 | 46 |
| 8 | 56 | 43 |
| A-wgtd | **69** | **58** |

**Sound Power (dB)**

| Octave Band | Center Frequency (Hertz) | Lw |
|---|---|---|
| 1 | 63 | 95 |
| 2 | 125 | 94 |
| 3 | 250 | 88 |
| 4 | 500 | 84 |
| 5 | 1000 | 83 |
| 6 | 2000 | 76 |
| 7 | 4000 | 73 |
| 8 | 8000 | 70 |

**Note:** The use of frequency inverters (variable frequency drives) can increase sound levels.

**Baltimore Aircoil Company**

# Cooling Tower Selection Report

Version: 8.9.1 NA
Product data correct as of: February 28, 2018

Project Name: 776 Summer Street
Selection Name: Building C
Project State/Province: Massachusetts
Project Country: United States
Date: March 15, 2018

## Model Information

Product Line: Series 1500
Model: S15E-1218-12LN
Number of Units: 2
Fan Type: Whisper Quiet Fan
Fan Motor: (3) 15.00 = 45.00 HP/Unit
Total Standard Fan Power: Full Speed, 45.00 BHP/Unit
Intake Option: None
Internal Option: None
Discharge Option: None

## Design Conditions

| | | |
|---|---|---|
| Flow Rate: | 3,900.00 | USGPM |
| Hot Water Temp.: | 95.00 | °F |
| Cold Water Temp.: | 85.00 | °F |
| Wet Bulb Temp.: | 78.00 | °F |
| Tower Pumping Head: | 8.03 | psi |
| Reserve Capability: | 3.26 | % |

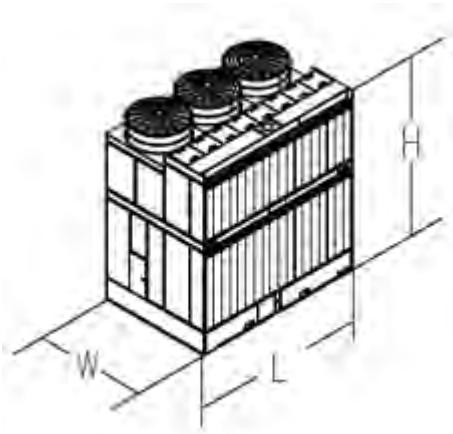
**Thermal performance at design conditions and standard total fan motor power is certified by the Cooling Technology Institute (CTI).**

## Engineering Data, per Unit

| | | |
|---|---|---|
| Unit Length: | 17' 11.75" | |
| Unit Width: | 11' 10.00" | |
| Unit Height: | 19' 06.75" | |
| Air Flow: | 153,320 | CFM |
| Approximate Shipping Weight: | 14,600 | pounds |
| Heaviest Section: | 7,880 | pounds |
| Approximate Operating Weight: | 31,260 | pounds |

Heater kW Data (Optional)

| | | |
|---|---|---|
| 0°F (-17.8°C) Ambient Heaters: | (2) 10 | kW |
| -20°F (-28.9°C) Ambient Heaters: | (2) 12 | kW |




Minimum Distance Required for Single Unit:
(For multiple units, refer to Layout Guidelines)

| | | |
|---|---|---|
| From Solid Wall: | 9.5 | ft. |
| From 50% Open Wall: | 3 | ft. |

Energy Rating:
52.84 per ASHRAE 90.1, ASHRAE 189 and CA Title 24.

Note: These unit weights and dimensions account for the selected fan type for the standard cataloged drive configuration, but they do not account for other options/accessories. Please contact your local BAC sales representative for weights and dimensions of units with other options/accessories.

**Baltimore Aircoil Company**

# Cooling Tower Selection Report

Version: 8.9.1 NA
Product data correct as of: February 28, 2018

Project Name: 776 Summer Street
Selection Name: Building C
Project State/Province: Massachusetts
Project Country: United States
Date: March 15, 2018

## Model Information

Product Line: Series 1500
Model: S15E-1218-12LN
Number of Units: 2
Fan Type: Whisper Quiet Fan
Fan Motor: (3) 15.00 = 45.00 HP/Unit
Total Standard Fan Power: Full Speed, 45.00 BHP/Unit

Intake Option: None
Internal Option: None
Discharge Option: None

Octave band and A-weighted sound pressure levels (Lp) are expressed in decibels (dB) reference 0.0002 microbar. Sound power levels (Lw) are expressed in decibels (dB) reference one picowatt. Octave band 1 has a center frequency of 63 Hertz.

**Top**
**Sound Pressure (dB)**

| Octave Band | Distance 5 ft. | Distance 50 ft. |
|---|---|---|
| 1 | 84 | 74 |
| 2 | 85 | 75 |
| 3 | 81 | 71 |
| 4 | 75 | 64 |
| 5 | 75 | 65 |
| 6 | 69 | 59 |
| 7 | 65 | 55 |
| 8 | 62 | 49 |
| A-wgtd | **79** | **69** |

**Back**
**Sound Pressure (dB)**

| Octave Band | Distance 5 ft. | Distance 50 ft. |
|---|---|---|
| 1 | 73 | 74 |
| 2 | 77 | 71 |
| 3 | 68 | 64 |
| 4 | 60 | 59 |
| 5 | 58 | 57 |
| 6 | 46 | 48 |
| 7 | 41 | 42 |
| 8 | 37 | 38 |
| A-wgtd | **65** | **62** |

**End**
**Sound Pressure (dB)**

| Octave Band | Distance 5 ft. | Distance 50 ft. |
|---|---|---|
| 1 | 74 | 71 |
| 2 | 76 | 68 |
| 3 | 68 | 61 |
| 4 | 59 | 56 |
| 5 | 56 | 55 |
| 6 | 47 | 45 |
| 7 | 42 | 39 |
| 8 | 36 | 35 |
| A-wgtd | **64** | **60** |



**End**
**Sound Pressure (dB)**

| Octave Band | Distance 5 ft. | Distance 50 ft. |
|---|---|---|
| 1 | 74 | 71 |
| 2 | 76 | 68 |
| 3 | 68 | 61 |
| 4 | 59 | 56 |
| 5 | 56 | 55 |
| 6 | 47 | 45 |
| 7 | 42 | 39 |
| 8 | 36 | 35 |
| A-wgtd | **64** | **60** |

**Air Inlet**
**Sound Pressure (dB)**

| Octave Band | Distance 5 ft. | Distance 50 ft. |
|---|---|---|
| 1 | 82 | 76 |
| 2 | 85 | 76 |
| 3 | 81 | 68 |
| 4 | 74 | 65 |
| 5 | 72 | 63 |
| 6 | 64 | 55 |
| 7 | 60 | 51 |
| 8 | 56 | 44 |
| A-wgtd | **78** | **68** |

**Sound Power (dB)**

| Octave Band | Center Frequency (Hertz) | Lw |
|---|---|---|
| 1 | 63 | 106 |
| 2 | 125 | 105 |
| 3 | 250 | 99 |
| 4 | 500 | 94 |
| 5 | 1000 | 93 |
| 6 | 2000 | 86 |
| 7 | 4000 | 82 |
| 8 | 8000 | 76 |

**Note:** The use of frequency inverters (variable frequency drives) can increase sound levels.

**Baltimore Aircoil Company**

# Cooling Tower Selection Report

Version: 8.9.1 NA
Product data correct as of: February 28, 2018

Project Name: 776 Summer Street
Selection Name: Building D,E
Project State/Province: Massachusetts
Project Country: United States
Date: March 15, 2018

## Model Information

Product Line: Series 1500
Model: XES15E-1218-10JN
Number of Units: 2
Fan Type: Whisper Quiet Fan
Fan Motor: (3) 7.50 = 22.50 HP/Unit
Total Standard Fan Power: Full Speed, 22.50 BHP/Unit
Intake Option: None
Internal Option: None
Discharge Option: None

## Design Conditions

| | | |
|---|---|---|
| Flow Rate: | 3,000.00 | USGPM |
| Hot Water Temp.: | 95.00 | °F |
| Cold Water Temp.: | 85.00 | °F |
| Wet Bulb Temp.: | 78.00 | °F |
| Tower Pumping Head: | 6.87 | psi |
| Reserve Capability: | 1.77 | % |

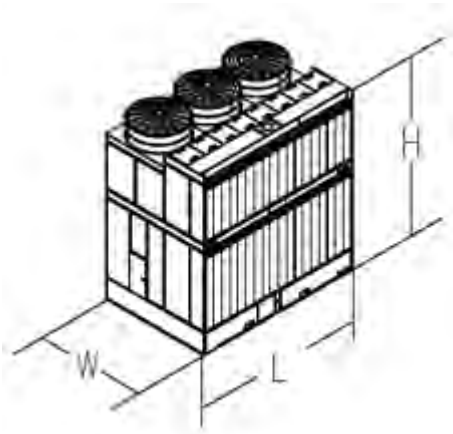
**Thermal performance at design conditions and standard total fan motor power is certified by the Cooling Technology Institute (CTI).**

## Engineering Data, per Unit

| | | |
|---|---|---|
| Unit Length: | 17' 11.75" | |
| Unit Width: | 11' 10.00" | |
| Unit Height: | 16' 10.75" | |
| Air Flow: | 117,290 | CFM |
| Approximate Shipping Weight: | 13,130 | pounds |
| Heaviest Section: | 7,460 | pounds |
| Approximate Operating Weight: | 29,010 | pounds |

Heater kW Data (Optional)

| | | |
|---|---|---|
| 0°F (-17.8°C) Ambient Heaters: | (2) 10 | kW |
| -20°F (-28.9°C) Ambient Heaters: | (2) 12 | kW |




Minimum Distance Required for Single Unit:
(For multiple units, refer to Layout Guidelines)

| | | |
|---|---|---|
| From Solid Wall: | 8 | ft. |
| From 50% Open Wall: | 3 | ft. |

Energy Rating:

80.83 per ASHRAE 90.1, ASHRAE 189 and CA Title 24.

This XE model is an extremely efficient model, with a base energy rating that meets or exceeds 2x the minimum ASHRAE 90.1 energy rating.

Note: These unit weights and dimensions account for the selected fan type for the standard cataloged drive configuration, but they do not account for other options/accessories. Please contact your local BAC sales representative for weights and dimensions of units with other options/accessories.

**Baltimore Aircoil Company**

# Cooling Tower Selection Report

Version: 8.9.1 NA
Product data correct as of: February 28, 2018

Project Name: 776 Summer Street
Selection Name: Building D,E
Project State/Province: Massachusetts
Project Country: United States
Date: March 15, 2018

## Model Information

Product Line: Series 1500
Model: XES15E-1218-10JN
Number of Units: 2
Fan Type: Whisper Quiet Fan
Fan Motor: (3) 7.50 = 22.50 HP/Unit
Total Standard Fan Power: Full Speed, 22.50 BHP/Unit

Intake Option: None
Internal Option: None
Discharge Option: None

Octave band and A-weighted sound pressure levels (Lp) are expressed in decibels (dB) reference 0.0002 microbar. Sound power levels (Lw) are expressed in decibels (dB) reference one picowatt. Octave band 1 has a center frequency of 63 Hertz.

**Top**
**Sound Pressure (dB)**

| Octave Band | Distance 5 ft. | Distance 50 ft. |
|---|---|---|
| 1 | 78 | 68 |
| 2 | 79 | 68 |
| 3 | 74 | 64 |
| 4 | 69 | 58 |
| 5 | 69 | 59 |
| 6 | 62 | 52 |
| 7 | 59 | 48 |
| 8 | 55 | 43 |
| A-wgtd | **73** | **63** |

**Back**
**Sound Pressure (dB)**

| Octave Band | Distance 5 ft. | Distance 50 ft. |
|---|---|---|
| 1 | 69 | 68 |
| 2 | 73 | 66 |
| 3 | 64 | 59 |
| 4 | 57 | 54 |
| 5 | 54 | 52 |
| 6 | 43 | 44 |
| 7 | 39 | 38 |
| 8 | 34 | 34 |
| A-wgtd | **61** | **57** |

**End**
**Sound Pressure (dB)**

| Octave Band | Distance 5 ft. | Distance 50 ft. |
|---|---|---|
| 1 | 70 | 65 |
| 2 | 71 | 63 |
| 3 | 63 | 56 |
| 4 | 55 | 51 |
| 5 | 52 | 50 |
| 6 | 44 | 41 |
| 7 | 39 | 35 |
| 8 | 34 | 31 |
| A-wgtd | **60** | **55** |



**End**
**Sound Pressure (dB)**

| Octave Band | Distance 5 ft. | Distance 50 ft. |
|---|---|---|
| 1 | 70 | 65 |
| 2 | 71 | 63 |
| 3 | 63 | 56 |
| 4 | 55 | 51 |
| 5 | 52 | 50 |
| 6 | 44 | 41 |
| 7 | 39 | 35 |
| 8 | 34 | 31 |
| A-wgtd | **60** | **55** |

**Air Inlet**
**Sound Pressure (dB)**

| Octave Band | Distance 5 ft. | Distance 50 ft. |
|---|---|---|
| 1 | 77 | 70 |
| 2 | 80 | 70 |
| 3 | 76 | 63 |
| 4 | 69 | 60 |
| 5 | 67 | 57 |
| 6 | 61 | 51 |
| 7 | 59 | 47 |
| 8 | 56 | 43 |
| A-wgtd | **73** | **62** |

**Sound Power (dB)**

| Octave Band | Center Frequency (Hertz) | Lw |
|---|---|---|
| 1 | 63 | 100 |
| 2 | 125 | 99 |
| 3 | 250 | 93 |
| 4 | 500 | 88 |
| 5 | 1000 | 87 |
| 6 | 2000 | 80 |
| 7 | 4000 | 76 |
| 8 | 8000 | 72 |

**Note:** The use of frequency inverters (variable frequency drives) can increase sound levels.

**Baltimore Aircoil Company**

# Cooling Tower Selection Report

Version: 8.9.1 NA
Product data correct as of: February 28, 2018

Project Name: 776 Summer Street
Selection Name: Building F,T
Project State/Province: Massachusetts
Project Country: United States
Date: March 15, 2018

## Model Information

Product Line: Series 1500
Model: S15E-1218-09JN
Number of Units: 2
Fan Type: Whisper Quiet Fan
Fan Motor: (3) 7.50 = 22.50 HP/Unit
Total Standard Fan Power: Full Speed, 22.50 BHP/Unit
Intake Option: None
Internal Option: None
Discharge Option: None

## Design Conditions

| | | |
|---|---|---|
| Flow Rate: | 2,850.00 | USGPM |
| Hot Water Temp.: | 95.00 | °F |
| Cold Water Temp.: | 85.00 | °F |
| Wet Bulb Temp.: | 78.00 | °F |
| Tower Pumping Head: | 6.30 | psi |
| Reserve Capability: | 2.12 | % |

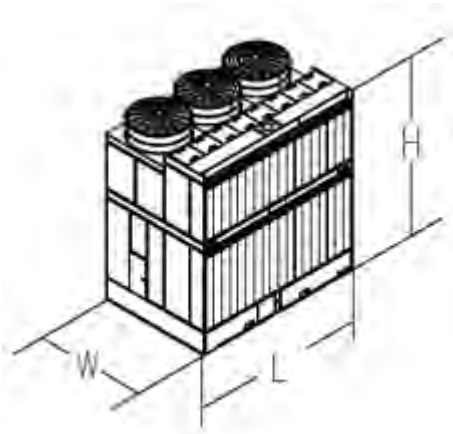
**Thermal performance at design conditions and standard total fan motor power is certified by the Cooling Technology Institute (CTI).**

## Engineering Data, per Unit

| | | |
|---|---|---|
| Unit Length: | 17' 11.75" | |
| Unit Width: | 11' 10.00" | |
| Unit Height: | 15' 06.75" | |
| Air Flow: | 112,420 | CFM |
| Approximate Shipping Weight: | 12,620 | pounds |
| Heaviest Section: | 7,460 | pounds |
| Approximate Operating Weight: | 27,710 | pounds |

Heater kW Data (Optional)

| | | |
|---|---|---|
| 0°F (-17.8°C) Ambient Heaters: | (2) 10 | kW |
| -20°F (-28.9°C) Ambient Heaters: | (2) 12 | kW |




Minimum Distance Required for Single Unit:
(For multiple units, refer to Layout Guidelines)

| | | |
|---|---|---|
| From Solid Wall: | 8 | ft. |
| From 50% Open Wall: | 3 | ft. |

Energy Rating:
77.13 per ASHRAE 90.1, ASHRAE 189 and CA Title 24.

Note: These unit weights and dimensions account for the selected fan type for the standard cataloged drive configuration, but they do not account for other options/accessories. Please contact your local BAC sales representative for weights and dimensions of units with other options/accessories.

**Baltimore Aircoil Company**

# Cooling Tower Selection Report

Version: 8.9.1 NA
Product data correct as of: February 28, 2018

Project Name: 776 Summer Street
Selection Name: Building F,T
Project State/Province: Massachusetts
Project Country: United States
Date: March 15, 2018

## Model Information

Product Line: Series 1500
Model: S15E-1218-09JN
Number of Units: 2
Fan Type: Whisper Quiet Fan
Fan Motor: (3) 7.50 = 22.50 HP/Unit
Total Standard Fan Power: Full Speed, 22.50 BHP/Unit

Intake Option: None
Internal Option: None
Discharge Option: None

Octave band and A-weighted sound pressure levels (Lp) are expressed in decibels (dB) reference 0.0002 microbar. Sound power levels (Lw) are expressed in decibels (dB) reference one picowatt. Octave band 1 has a center frequency of 63 Hertz.

**Top**
**Sound Pressure (dB)**

| Octave Band | Distance 5 ft. | Distance 50 ft. |
|---|---|---|
| 1 | 78 | 67 |
| 2 | 79 | 68 |
| 3 | 74 | 64 |
| 4 | 69 | 58 |
| 5 | 69 | 58 |
| 6 | 62 | 52 |
| 7 | 59 | 48 |
| 8 | 55 | 43 |
| A-wgtd | **73** | **62** |

**Back**
**Sound Pressure (dB)**

| Octave Band | Distance 5 ft. | Distance 50 ft. |
|---|---|---|
| 1 | 70 | 68 |
| 2 | 73 | 65 |
| 3 | 65 | 59 |
| 4 | 57 | 54 |
| 5 | 55 | 52 |
| 6 | 44 | 44 |
| 7 | 39 | 38 |
| 8 | 35 | 34 |
| A-wgtd | **62** | **57** |

**End**
**Sound Pressure (dB)**

| Octave Band | Distance 5 ft. | Distance 50 ft. |
|---|---|---|
| 1 | 70 | 65 |
| 2 | 72 | 62 |
| 3 | 64 | 56 |
| 4 | 56 | 51 |
| 5 | 52 | 49 |
| 6 | 45 | 41 |
| 7 | 40 | 35 |
| 8 | 34 | 31 |
| A-wgtd | **61** | **54** |



**End**
**Sound Pressure (dB)**

| Octave Band | Distance 5 ft. | Distance 50 ft. |
|---|---|---|
| 1 | 70 | 65 |
| 2 | 72 | 62 |
| 3 | 64 | 56 |
| 4 | 56 | 51 |
| 5 | 52 | 49 |
| 6 | 45 | 41 |
| 7 | 40 | 35 |
| 8 | 34 | 31 |
| A-wgtd | **61** | **54** |

**Air Inlet**
**Sound Pressure (dB)**

| Octave Band | Distance 5 ft. | Distance 50 ft. |
|---|---|---|
| 1 | 78 | 70 |
| 2 | 80 | 70 |
| 3 | 76 | 63 |
| 4 | 69 | 59 |
| 5 | 67 | 57 |
| 6 | 61 | 51 |
| 7 | 59 | 47 |
| 8 | 56 | 43 |
| A-wgtd | **73** | **62** |

**Sound Power (dB)**

| Octave Band | Center Frequency (Hertz) | Lw |
|---|---|---|
| 1 | 63 | 99 |
| 2 | 125 | 99 |
| 3 | 250 | 93 |
| 4 | 500 | 88 |
| 5 | 1000 | 87 |
| 6 | 2000 | 80 |
| 7 | 4000 | 76 |
| 8 | 8000 | 72 |

**Note:** The use of frequency inverters (variable frequency drives) can increase sound levels.

**Baltimore Aircoil Company**

# Cooling Tower Selection Report

Version: 8.9.1 NA
Product data correct as of: February 28, 2018

Project Name: 776 Summer Street
Selection Name: Building G
Project State/Province: Massachusetts
Project Country: United States
Date: March 15, 2018

## Model Information

Product Line: Series 1500
Model: XES15E-1285-06GN
Number of Units: 2
Fan Type: Whisper Quiet Fan
Fan Motor: (1) 3.00 = 3.00 HP/Unit
Total Standard Fan Power: Full Speed, 3.00 BHP/Unit
Intake Option: None
Internal Option: None
Discharge Option: None

## Design Conditions

| | | |
|---|---|---|
| Flow Rate: | 600.00 | USGPM |
| Hot Water Temp.: | 95.00 | °F |
| Cold Water Temp.: | 85.00 | °F |
| Wet Bulb Temp.: | 78.00 | °F |
| Tower Pumping Head: | 4.27 | psi |
| Reserve Capability: | 15.83 | % |

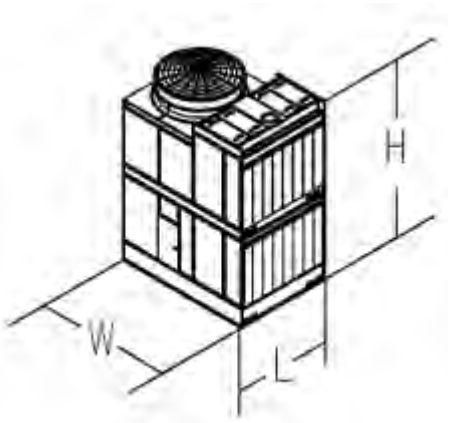
**Thermal performance at design conditions and standard total fan motor power is certified by the Cooling Technology Institute (CTI).**

## Engineering Data, per Unit

| | | |
|---|---|---|
| Unit Length: | 08' 05.75" | |
| Unit Width: | 11' 10.00" | |
| Unit Height: | 10' 08.50" | |
| Air Flow: | 28,460 | CFM |
| Approximate Shipping Weight: | 4,420 | pounds |
| Heaviest Section: | 4,420 | pounds |
| Approximate Operating Weight: | 9,210 | pounds |

Heater kW Data (Optional)

| | | |
|---|---|---|
| 0°F (-17.8°C) Ambient Heaters: | (1) 10 | kW |
| -20°F (-28.9°C) Ambient Heaters: | (1) 12 | kW |




Minimum Distance Required for Single Unit:
(For multiple units, refer to Layout Guidelines)

| | | |
|---|---|---|
| From Solid Wall: | 3.5 | ft. |
| From 50% Open Wall: | 3 | ft. |

Energy Rating:
140.91 per ASHRAE 90.1, ASHRAE 189 and CA Title 24.
This XE model is an extremely efficient model, with a base energy rating that meets or exceeds 2x the minimum ASHRAE 90.1 energy rating.

Note: These unit weights and dimensions account for the selected fan type for the standard cataloged drive configuration, but they do not account for other options/accessories. Please contact your local BAC sales representative for weights and dimensions of units with other options/accessories.

**Baltimore Aircoil Company**

# Cooling Tower Selection Report

Version: 8.9.1 NA
Product data correct as of: February 28, 2018

Project Name: 776 Summer Street
Selection Name: Building G
Project State/Province: Massachusetts
Project Country: United States
Date: March 15, 2018

## Model Information

Product Line: Series 1500
Model: XES15E-1285-06GN
Number of Units: 2
Fan Type: Whisper Quiet Fan
Fan Motor: (1) 3.00 = 3.00 HP/Unit
Total Standard Fan Power: Full Speed, 3.00 BHP/Unit

Intake Option: None
Internal Option: None
Discharge Option: None

Octave band and A-weighted sound pressure levels (Lp) are expressed in decibels (dB) reference 0.0002 microbar. Sound power levels (Lw) are expressed in decibels (dB) reference one picowatt. Octave band 1 has a center frequency of 63 Hertz.

**Top**
**Sound Pressure (dB)**

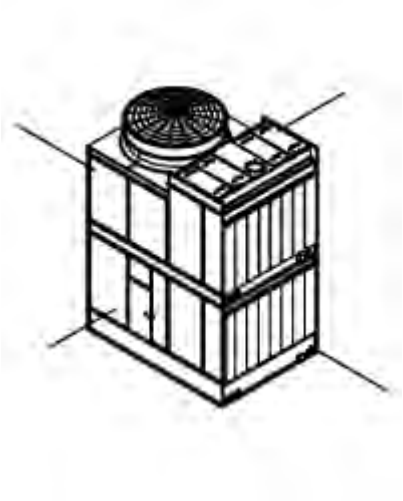
| Octave Band | Distance 5 ft. | Distance 50 ft. |
|---|---|---|
| 1 | 66 | 54 |
| 2 | 67 | 54 |
| 3 | 62 | 50 |
| 4 | 58 | 45 |
| 5 | 58 | 45 |
| 6 | 51 | 39 |
| 7 | 48 | 36 |
| 8 | 44 | 31 |
| A-wgtd | **62** | **49** |

**Back**
**Sound Pressure (dB)**

| Octave Band | Distance 5 ft. | Distance 50 ft. |
|---|---|---|
| 1 | 62 | 56 |
| 2 | 64 | 54 |
| 3 | 58 | 48 |
| 4 | 51 | 43 |
| 5 | 49 | 42 |
| 6 | 40 | 34 |
| 7 | 38 | 30 |
| 8 | 33 | 25 |
| A-wgtd | **55** | **47** |

**End**
**Sound Pressure (dB)**

| Octave Band | Distance 5 ft. | Distance 50 ft. |
|---|---|---|
| 1 | 62 | 53 |
| 2 | 63 | 51 |
| 3 | 56 | 45 |
| 4 | 49 | 40 |
| 5 | 47 | 39 |
| 6 | 40 | 31 |
| 7 | 37 | 27 |
| 8 | 31 | 23 |
| A-wgtd | **53** | **44** |



**End**
**Sound Pressure (dB)**

| Octave Band | Distance 5 ft. | Distance 50 ft. |
|---|---|---|
| 1 | 62 | 53 |
| 2 | 63 | 51 |
| 3 | 56 | 45 |
| 4 | 49 | 40 |
| 5 | 47 | 39 |
| 6 | 40 | 31 |
| 7 | 37 | 27 |
| 8 | 31 | 23 |
| A-wgtd | **53** | **44** |

**Air Inlet**
**Sound Pressure (dB)**

| Octave Band | Distance 5 ft. | Distance 50 ft. |
|---|---|---|
| 1 | 68 | 58 |
| 2 | 71 | 58 |
| 3 | 67 | 52 |
| 4 | 62 | 49 |
| 5 | 61 | 48 |
| 6 | 60 | 46 |
| 7 | 60 | 46 |
| 8 | 57 | 43 |
| A-wgtd | **68** | **54** |

**Sound Power (dB)**

| Octave Band | Center Frequency (Hertz) | Lw |
|---|---|---|
| 1 | 63 | 87 |
| 2 | 125 | 87 |
| 3 | 250 | 81 |
| 4 | 500 | 77 |
| 5 | 1000 | 76 |
| 6 | 2000 | 72 |
| 7 | 4000 | 72 |
| 8 | 8000 | 68 |

**Note:** The use of frequency inverters (variable frequency drives) can increase sound levels.

**Baltimore Aircoil Company**

# Cooling Tower Selection Report

Version: 8.9.1 NA
Product data correct as of: February 28, 2018

Project Name: 776 Summer Street
Selection Name: Building H
Project State/Province: Massachusetts
Project Country: United States
Date: March 15, 2018

## Model Information

| | |
|---|---|
| Product Line: | Series 1500 |
| Model: | S15E-1218-10LN |
| Number of Units: | 2 |
| Fan Type: | Whisper Quiet Fan |
| Fan Motor: | (3) 15.00 = 45.00 HP/Unit |
| Total Standard Fan Power: | Full Speed, 45.00 BHP/Unit |
| Intake Option: | None |
| Internal Option: | None |
| Discharge Option: | None |

## Design Conditions

| | | |
|---|---|---|
| Flow Rate: | 3,600.00 | USGPM |
| Hot Water Temp.: | 95.00 | °F |
| Cold Water Temp.: | 85.00 | °F |
| Wet Bulb Temp.: | 78.00 | °F |
| Tower Pumping Head: | 6.87 | psi |
| Reserve Capability: | 3.78 | % |

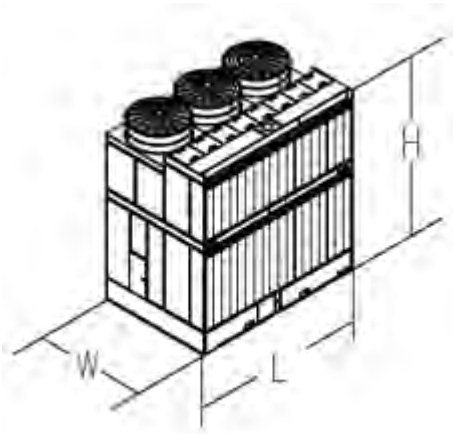
**Thermal performance at design conditions and standard total fan motor power is certified by the Cooling Technology Institute (CTI).**

## Engineering Data, per Unit

| | | |
|---|---|---|
| Unit Length: | 17' 11.75" | |
| Unit Width: | 11' 10.00" | |
| Unit Height: | 16' 10.75" | |
| Air Flow: | 143,710 | CFM |
| Approximate Shipping Weight: | 13,550 | pounds |
| Heaviest Section: | 7,880 | pounds |
| Approximate Operating Weight: | 29,430 | pounds |

Heater kW Data (Optional)

| | | |
|---|---|---|
| 0°F (-17.8°C) Ambient Heaters: | (2) 10 | kW |
| -20°F (-28.9°C) Ambient Heaters: | (2) 12 | kW |




Minimum Distance Required for Single Unit:
(For multiple units, refer to Layout Guidelines)

| | | |
|---|---|---|
| From Solid Wall: | 9.5 | ft. |
| From 50% Open Wall: | 3 | ft. |

Energy Rating:
49.08 per ASHRAE 90.1, ASHRAE 189 and CA Title 24.

Note: These unit weights and dimensions account for the selected fan type for the standard cataloged drive configuration, but they do not account for other options/accessories. Please contact your local BAC sales representative for weights and dimensions of units with other options/accessories.

**Baltimore Aircoil Company**

# Cooling Tower Selection Report

Version: 8.9.1 NA
Product data correct as of: February 28, 2018

Project Name: 776 Summer Street
Selection Name: Building H
Project State/Province: Massachusetts
Project Country: United States
Date: March 15, 2018

## Model Information

Product Line: Series 1500
Model: S15E-1218-10LN
Number of Units: 2
Fan Type: Whisper Quiet Fan
Fan Motor: (3) 15.00 = 45.00 HP/Unit
Total Standard Fan Power: Full Speed, 45.00 BHP/Unit

Intake Option: None
Internal Option: None
Discharge Option: None

Octave band and A-weighted sound pressure levels (Lp) are expressed in decibels (dB) reference 0.0002 microbar. Sound power levels (Lw) are expressed in decibels (dB) reference one picowatt. Octave band 1 has a center frequency of 63 Hertz.

**Top**
**Sound Pressure (dB)**

| Octave Band | Distance 5 ft. | Distance 50 ft. |
|---|---|---|
| 1 | 84 | 74 |
| 2 | 85 | 74 |
| 3 | 80 | 70 |
| 4 | 75 | 64 |
| 5 | 75 | 64 |
| 6 | 68 | 58 |
| 7 | 65 | 54 |
| 8 | 61 | 49 |
| A-wgtd | **79** | **68** |

**Back**
**Sound Pressure (dB)**

| Octave Band | Distance 5 ft. | Distance 50 ft. |
|---|---|---|
| 1 | 74 | 74 |
| 2 | 78 | 71 |
| 3 | 70 | 64 |
| 4 | 62 | 59 |
| 5 | 59 | 57 |
| 6 | 46 | 48 |
| 7 | 42 | 42 |
| 8 | 38 | 38 |
| A-wgtd | **67** | **62** |

**End**
**Sound Pressure (dB)**

| Octave Band | Distance 5 ft. | Distance 50 ft. |
|---|---|---|
| 1 | 75 | 71 |
| 2 | 77 | 68 |
| 3 | 69 | 61 |
| 4 | 60 | 56 |
| 5 | 57 | 54 |
| 6 | 48 | 45 |
| 7 | 43 | 39 |
| 8 | 37 | 35 |
| A-wgtd | **65** | **59** |



**End**
**Sound Pressure (dB)**

| Octave Band | Distance 5 ft. | Distance 50 ft. |
|---|---|---|
| 1 | 75 | 71 |
| 2 | 77 | 68 |
| 3 | 69 | 61 |
| 4 | 60 | 56 |
| 5 | 57 | 54 |
| 6 | 48 | 45 |
| 7 | 43 | 39 |
| 8 | 37 | 35 |
| A-wgtd | **65** | **59** |

**Air Inlet**
**Sound Pressure (dB)**

| Octave Band | Distance 5 ft. | Distance 50 ft. |
|---|---|---|
| 1 | 83 | 76 |
| 2 | 86 | 75 |
| 3 | 81 | 68 |
| 4 | 74 | 65 |
| 5 | 72 | 63 |
| 6 | 65 | 55 |
| 7 | 60 | 51 |
| 8 | 56 | 44 |
| A-wgtd | **78** | **68** |

**Sound Power (dB)**

| Octave Band | Center Frequency (Hertz) | Lw |
|---|---|---|
| 1 | 63 | 106 |
| 2 | 125 | 104 |
| 3 | 250 | 98 |
| 4 | 500 | 94 |
| 5 | 1000 | 92 |
| 6 | 2000 | 85 |
| 7 | 4000 | 81 |
| 8 | 8000 | 76 |

**Note:** The use of frequency inverters (variable frequency drives) can increase sound levels.

# Project Sound Level Analysis

| Receiver | | Limiting Value | | All Sources | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Name | ID | Day | Night | Overall | 31.5 Hz | 63 Hz | 125 Hz | 250 Hz | 500 Hz | 1 kHz | 2 kHz | 4 kHz | 8 kHz |
| | | dB(A) | dB(A) | dB(A) | dB | dB | dB | dB | dB | dB | dB | dB | dB |
| 836 Summer St (Commercial) | R1 | 0 | 0 | 46.8 | -80.2 | 60.4 | 57.9 | 48.6 | 41.1 | 38.5 | 32.7 | 34 | 29.2 |
| 621 East 1st St (Mixed) | R2 | 0 | 0 | 47 | -80.2 | 61.7 | 58.5 | 48.3 | 40.8 | 38.6 | 33 | 33.9 | 28.9 |
| 637 East 1st St (Residential) | R3 | 0 | 0 | 45.5 | -80.2 | 60.1 | 56.9 | 47.1 | 39.9 | 37.1 | 32.5 | 29.5 | 21.2 |
| 3 M St (Residential) | R4 | 0 | 0 | 47.7 | -80.2 | 60.1 | 58.9 | 49.3 | 42.4 | 40.6 | 35.5 | 31.6 | 20.7 |
| 9 M St (Residential) | R5 | 0 | 0 | 41.4 | -80.2 | 56.2 | 51.9 | 42.6 | 36.3 | 34 | 30.1 | 26.3 | 14.5 |
| 706 East 1st St (Industrial) | R6 | 0 | 0 | 47.9 | -80.2 | 58.8 | 57.5 | 47.7 | 42.2 | 43.6 | 36.5 | 31.8 | 20.7 |
| 15 M St (Residential) | R7 | 0 | 0 | 40.5 | -80.2 | 54.4 | 51 | 42.2 | 36.2 | 32.9 | 28.7 | 24.7 | 11.5 |
| 17 M St (Residential) | R8 | 0 | 0 | 40.4 | -80.2 | 54.1 | 50.8 | 42.1 | 36.1 | 32.7 | 28.3 | 24.1 | 10.4 |
| 19 M St (Residential) | R9 | 0 | 0 | 42.8 | -80.2 | 54.4 | 51.6 | 44.6 | 38.8 | 36 | 33.1 | 26.2 | 10.3 |
| 21 M St (Residential) | R10 | 0 | 0 | 42.8 | -80.2 | 54.3 | 51.5 | 44.3 | 38.9 | 36.3 | 33.4 | 26.2 | 9.6 |
| 23 M St (Residential) | R11 | 0 | 0 | 42.6 | -80.2 | 53.5 | 51 | 43.8 | 38.8 | 36.3 | 33.6 | 26.3 | 9 |
| 736 E 2nd St (Residential) | R12 | 0 | 0 | 41.9 | -80.2 | 55.8 | 53.3 | 43.9 | 36.4 | 33.2 | 29.5 | 26.3 | 14.1 |
| 734 E 2nd St (Residential) | R13 | 0 | 0 | 42.2 | -80.2 | 56.4 | 53.9 | 44 | 36.1 | 33.7 | 29.5 | 26.3 | 14.3 |
| 732 E 2nd St (Residential) | R14 | 0 | 0 | 38.5 | -80.2 | 54.2 | 50 | 38.8 | 31.5 | 30.9 | 26.7 | 24.4 | 13.2 |
| 730 E 2nd St (Residential) | R15 | 0 | 0 | 39.5 | -80.2 | 55.7 | 51.2 | 39.6 | 32.6 | 32.2 | 27.1 | 24.6 | 13.7 |
| 728 E 2nd St (Residential) | R16 | 0 | 0 | 45.7 | -80.2 | 57.2 | 54.7 | 45.9 | 41.8 | 40.9 | 33.6 | 28.4 | 16.1 |
| 726 E 2nd St (Residential) | R17 | 0 | 0 | 44.7 | -80.2 | 59 | 56.9 | 46.3 | 38.7 | 36.5 | 29.2 | 26.1 | 15.4 |
| 724 E 2nd St (Residential) | R18 | 0 | 0 | 42.1 | -80.2 | 56.7 | 54.2 | 43.8 | 36.2 | 33.3 | 27.6 | 25.7 | 15.7 |
| 722 E 2nd St (Residential) | R19 | 0 | 0 | 41.6 | -80.2 | 55.6 | 52.9 | 43.5 | 36.3 | 33.3 | 28.3 | 25.7 | 14.8 |
| 720 E 2nd St (Residential) | R20 | 0 | 0 | 37.6 | -80.2 | 51.9 | 48.2 | 37.6 | 31.4 | 31 | 26.3 | 25 | 16 |
| 718 E 2nd St (Residential) | R21 | 0 | 0 | 42.7 | -80.2 | 56.5 | 52.4 | 41.7 | 37.1 | 38.1 | 30.9 | 26.7 | 16.6 |
| 28-38 L St (Residential) | R22 | 0 | 0 | 42.4 | -80.2 | 54.5 | 53.9 | 45 | 37.7 | 34.6 | 26.1 | 20.3 | 5.9 |
| 701 E 2nd St (Residential) | R23 | 0 | 0 | 42.5 | -80.2 | 54.6 | 53.9 | 45.1 | 37.9 | 34.7 | 26.3 | 20.6 | 6.3 |
| 703 E 2nd St (Residential) | R24 | 0 | 0 | 42.5 | -80.2 | 55.2 | 53.9 | 44.9 | 37.8 | 34.7 | 26.1 | 20.7 | 6.6 |
| 705 E 2nd St (Parking) | R25 | 0 | 0 | 45.3 | -80.2 | 58 | 56.9 | 46.6 | 39.7 | 38.7 | 30.6 | 25 | 11.6 |
| 707 E 2nd St (Residential) | R26 | 0 | 0 | 43.6 | -80.2 | 57.5 | 54.4 | 44.4 | 38 | 37.9 | 30.3 | 24.1 | 8.8 |
| 709 E 2nd St (Residential) | R27 | 0 | 0 | 42.4 | -80.2 | 56.2 | 53.8 | 44.2 | 37.6 | 35 | 26.6 | 21.3 | 6.9 |
| 711 E 2nd St (Residential) | R28 | 0 | 0 | 42.6 | -80.2 | 55.4 | 53.9 | 44.7 | 38 | 35.2 | 26.6 | 21.3 | 6.7 |
| 715 E 2nd St (Residential) | R29 | 0 | 0 | 41.5 | -80.2 | 55.4 | 53.4 | 43.9 | 36.1 | 32.8 | 24.8 | 20.7 | 6.3 |
| 717 E 2nd St (Residential) | R30 | 0 | 0 | 41.8 | -80.2 | 55.4 | 53.9 | 44.2 | 36.1 | 32.8 | 25 | 21.4 | 6.3 |
| 719-721 E 2nd St (Residential) | R31 | 0 | 0 | 41.1 | -80.2 | 55 | 53.2 | 43.6 | 35.7 | 32.2 | 24.6 | 20.5 | 5.7 |
| 723 E 2nd St (Residential) | R32 | 0 | 0 | 41.7 | -80.2 | 55.2 | 53.6 | 44.2 | 36.4 | 32.9 | 25.4 | 20.4 | 5.2 |
| 725 E 2nd St (Residential) | R33 | 0 | 0 | 41.1 | -80.2 | 54.8 | 53 | 43.6 | 36 | 32.2 | 24.6 | 20.3 | 4.8 |
| 27 M St (Residential) | R34 | 0 | 0 | 45.2 | -80.2 | 56.2 | 55.2 | 46.5 | 41 | 38.5 | 34.6 | 26.9 | 7.6 |
| 29 M St (Residential) | R35 | 0 | 0 | 43.8 | -80.2 | 54.4 | 53 | 44.3 | 39.7 | 37.6 | 34.5 | 26.9 | 7.1 |
| 31 M St (Residential) | R36 | 0 | 0 | 44 | -80.2 | 54.9 | 53.5 | 44.4 | 39.8 | 37.8 | 34.7 | 27 | 6.7 |
| 33 M St (Residential) | R37 | 0 | 0 | 43.8 | -80.2 | 54.4 | 53.2 | 44.1 | 39.5 | 37.7 | 34.6 | 27 | 6.2 |
| 7 Elkins St (Charter School) | R38 | 0 | 0 | 47.3 | -80.2 | 59.6 | 60.2 | 48.4 | 37.7 | 39 | 32.9 | 32.2 | 26 |
| Christopher Lee Playground | R39 | 0 | 0 | 46.1 | -80.2 | 57.2 | 56.5 | 47 | 40.9 | 40.5 | 33.9 | 27.7 | 12.1 |
| Medal of Honor Park | R40 | 0 | 0 | 48 | -80.2 | 57.5 | 58 | 48.2 | 42.9 | 42.2 | 38.2 | 32.4 | 11.7 |

| Receptor | | Existing Sound Levels, L90 (dBA) Overall | Project Contribution(dBA) Overall | Total Sound Levels (dBA) Overall | Difference (dBA) Overall |
|---|---|---|---|---|---|
| R1 | 836 Summer St (Commercial) | 44.6 | 46.8 | 48.8 | 4.2 |
| R2 | 621 East 1st St (Mixed) | 44.6 | 47.0 | 49.0 | 4.4 |
| R3 | 637 East 1st St (Residential) | 44.6 | 45.5 | 48.1 | 3.5 |
| R4 | 3 M St (Residential) | 44.6 | 47.7 | 49.4 | 4.8 |
| R5 | 9 M St (Residential) | 44.6 | 41.4 | 46.3 | 1.7 |
| R6 | 706 East 1st St (Industrial) | 44.6 | 47.9 | 49.6 | 5.0 |
| R7 | 15 M St (Residential) | 44.6 | 40.5 | 46.0 | 1.4 |
| R8 | 17 M St (Residential) | 44.6 | 40.4 | 46.0 | 1.4 |
| R9 | 19 M St (Residential) | 44.6 | 42.8 | 46.8 | 2.2 |
| R10 | 21 M St (Residential) | 44.6 | 42.8 | 46.8 | 2.2 |
| R11 | 23 M St (Residential) | 44.6 | 42.6 | 46.7 | 2.1 |
| R12 | 736 E 2nd St (Residential) | 44.6 | 41.9 | 46.5 | 1.9 |
| R13 | 734 E 2nd St (Residential) | 44.6 | 42.2 | 46.6 | 2.0 |
| R14 | 732 E 2nd St (Residential) | 44.6 | 38.5 | 45.6 | 1.0 |
| R15 | 730 E 2nd St (Residential) | 44.6 | 39.5 | 45.8 | 1.2 |
| R16 | 728 E 2nd St (Residential) | 44.6 | 45.7 | 48.2 | 3.6 |
| R17 | 726 E 2nd St (Residential) | 44.6 | 44.7 | 47.7 | 3.1 |
| R18 | 724 E 2nd St (Residential) | 44.6 | 42.1 | 46.5 | 1.9 |
| R19 | 722 E 2nd St (Residential) | 44.6 | 41.6 | 46.4 | 1.8 |
| R20 | 720 E 2nd St (Residential) | 44.6 | 37.6 | 45.4 | 0.8 |
| R21 | 718 E 2nd St (Residential) | 44.6 | 42.7 | 46.8 | 2.2 |
| R22 | 28-38 L St (Residential) | 44.6 | 42.4 | 46.6 | 2.0 |
| R23 | 701 E 2nd St (Residential) | 44.6 | 42.5 | 46.7 | 2.1 |
| R24 | 703 E 2nd St (Residential) | 44.6 | 42.5 | 46.7 | 2.1 |
| R25 | 705 E 2nd St (Parking) | 44.6 | 45.3 | 48.0 | 3.4 |
| R26 | 707 E 2nd St (Residential) | 44.6 | 43.6 | 47.1 | 2.5 |
| R27 | 709 E 2nd St (Residential) | 44.6 | 42.4 | 46.6 | 2.0 |
| R28 | 711 E 2nd St (Residential) | 44.6 | 42.6 | 46.7 | 2.1 |
| R29 | 715 E 2nd St (Residential) | 44.6 | 41.5 | 46.3 | 1.7 |
| R30 | 717 E 2nd St (Residential) | 44.6 | 41.8 | 46.4 | 1.8 |
| R31 | 719-721 E 2nd St (Residential) | 44.6 | 41.1 | 46.2 | 1.6 |
| R32 | 723 E 2nd St (Residential) | 44.6 | 41.7 | 46.4 | 1.8 |
| R33 | 725 E 2nd St (Residential) | 44.6 | 41.1 | 46.2 | 1.6 |
| R34 | 27 M St (Residential) | 44.6 | 45.2 | 47.9 | 3.3 |
| R35 | 29 M St (Residential) | 44.6 | 43.8 | 47.2 | 2.6 |
| R36 | 31 M St (Residential) | 44.6 | 44.0 | 47.3 | 2.7 |
| R37 | 33 M St (Residential) | 44.6 | 43.8 | 47.2 | 2.6 |
| R38 | 7 Elkins St (Charter School) | 44.6 | 47.3 | 49.2 | 4.6 |
| R39 | Christopher Lee Playground | 44.6 | 46.1 | 48.4 | 3.8 |
| R40 | Medal of Honor Park | 44.6 | 48.0 | 49.6 | 5.0 |

# HUD Analysis

# DNL Calculator

**WARNING:** HUD recommends the use of Microsoft Internet Explorer for performing noise calculations. The HUD Noise Calculator has an error when using Google Chrome unless the cache is cleared before each use of the calculator. HUD is aware of the problem and working to fix it in the programming of the calculator.

The Day/Night Noise Level Calculator is an electronic assessment tool that calculates the Day/Night Noise Level (DNL) from roadway and railway traffic. For more information on using the DNL calculator, view the **Day/Night Noise Level Calculator Electronic Assessment Tool Overview (/programs/environmental-review/daynight-noise-level-electronic-assessment-tool/)**.

## Guidelines

- To display the Road and/or Rail DNL calculator(s), click on the "Add Road Source" and/or "Add Rail Source" button(s) below.
- All Road and Rail input values must be positive non-decimal numbers.
- All Road and/or Rail DNL value(s) must be calculated separately before calculating the Site DNL.
- All checkboxes that apply must be checked for vehicles and trains in the tables' headers.
- **Note #1:** Tooltips, containing field specific information, have been added in this tool and may be accessed by hovering over all the respective data fields (site identification, roadway and railway assessment, DNL calculation results, roadway and railway input variables) with the mouse.
- **Note #2:** DNL Calculator assumes roadway data is always entered.

## DNL Calculator

| | |
|---|---|
| **Site ID** | L St Development - Building D - Northwest |
| **Record Date** | 08/02/2018 |
| **User's Name** | VHB |

| | |
|---|---|
| **Road # 1 Name:** | **Summer Street** |

**Road #1**

| Vehicle Type | Cars ☑ | Medium Trucks ☑ | Heavy Trucks ☑ |
|---|---|---|---|
| Effective Distance | 65 | 65 | 65 |
| Distance to Stop Sign | | | |
| Average Speed | 25 | 25 | 25 |
| Average Daily Trips (ADT) | 40578 | 2396 | 2288 |
| Night Fraction of ADT | 9 | 7 | 3 |
| Road Gradient (%) | | | 0 |
| Vehicle DNL | 64.6248 | 61.8818 | 72.5389 |
| Calculate Road #1 DNL | 73.5315 | Reset | |

**Road # 2 Name:** **Dedicated Freight Corridor**

**Road #2**

| Vehicle Type | Cars ☐ | Medium Trucks ☐ | Heavy Trucks ☑ |
|---|---|---|---|
| Effective Distance | | | 310 |
| Distance to Stop Sign | | | |
| Average Speed | | | 15 |
| Average Daily Trips (ADT) | | | 1753 |
| Night Fraction of ADT | | | 0 |
| Road Gradient (%) | | | 0 |
| Vehicle DNL | | | 60.1674 |
| Calculate Road #2 DNL | 60.1674 | Reset | |

Add Road Source | Add Rail Source

Add Road Source | Add Rail Source

| | |
|---|---|
| Airport Noise Level | 58.5 |
| Loud Impulse Sounds? | Yes / No |
| Combined DNL for all Road and Rail sources | **73.7633** |
| Combined DNL including Airport | **73.9001** |
| Site DNL with Loud Impulse Sound | |

Calculate

# Mitigation Options

If your site DNL is in Excess of 65 decibels, your options are:

- **No Action Alternative**: Cancel the project at this location
- **Other Reasonable Alternatives**: Choose an alternate site
- **Mitigation**
  - **Contact your Field or Regional Environmental Officer (/programs/environmental-review/hud-environmental-staff-contacts/)**
  - Increase mitigation in the building walls (only effective if no outdoor, noise sensitive areas)
  - Reconfigure the site plan to increase the distance between the noise source and noise-sensitive uses
  - Incorporate natural or man-made barriers. See ***The Noise Guidebook (/resource/313/hud-noise-guidebook/)***
  - Construct noise barrier. See the **Barrier Performance Module (/programs/environmental-review/bpm-calculator/)**

# Tools and Guidance

**Day/Night Noise Level Assessment Tool User Guide (/resource/3822/day-night-noise-level-assessment-tool-user-guide/)**

**Day/Night Noise Level Assessment Tool Flowcharts (/resource/3823/day-night-noise-level-assessment-tool-flowcharts/)**

# DNL Calculator

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The Day/Night Noise Level Calculator is an electronic assessment tool that calculates the Day/Night Noise Level (DNL) from roadway and railway traffic. For more information on using the DNL calculator, view the **Day/Night Noise Level Calculator Electronic Assessment Tool Overview (/programs/environmental-review/daynight-noise-level-electronic-assessment-tool/)**.

## Guidelines

- To display the Road and/or Rail DNL calculator(s), click on the "Add Road Source" and/or "Add Rail Source" button(s) below.
- All Road and Rail input values must be positive non-decimal numbers.
- All Road and/or Rail DNL value(s) must be calculated separately before calculating the Site DNL.
- All checkboxes that apply must be checked for vehicles and trains in the tables' headers.
- **Note #1:** Tooltips, containing field specific information, have been added in this tool and may be accessed by hovering over all the respective data fields (site identification, roadway and railway assessment, DNL calculation results, roadway and railway input variables) with the mouse.
- **Note #2:** DNL Calculator assumes roadway data is always entered.

## DNL Calculator

| | |
|---|---|
| **Site ID** | L St Development - Building D - Northeast |
| **Record Date** | 08/02/2018 |
| **User's Name** | VHB |

| | |
|---|---|
| **Road # 1 Name:** | **Summer Street** |

**Road #1**

| Vehicle Type | Cars ☑ | Medium Trucks ☑ | Heavy Trucks ☑ |
|---|---|---|---|
| Effective Distance | 200 | 200 | 200 |
| Distance to Stop Sign | | | |
| Average Speed | 25 | 25 | 25 |
| Average Daily Trips (ADT) | 40578 | 2396 | 2288 |
| Night Fraction of ADT | 9 | 7 | 3 |
| Road Gradient (%) | | | 0 |
| Vehicle DNL | 57.303 | 54.5601 | 65.2171 |
| Calculate Road #1 DNL | 66.2097 | Reset | |

**Road # 2 Name:** **Dedicated Freight Corridor**

**Road #2**

| Vehicle Type | Cars ☐ | Medium Trucks ☐ | Heavy Trucks ☑ |
|---|---|---|---|
| Effective Distance | | | 295 |
| Distance to Stop Sign | | | |
| Average Speed | | | 15 |
| Average Daily Trips (ADT) | | | 1753 |
| Night Fraction of ADT | | | 0 |
| Road Gradient (%) | | | 0 |
| Vehicle DNL | | | 60.4905 |
| Calculate Road #2 DNL | 60.4905 | Reset | |

Add Road Source | Add Rail Source

Add Road Source | Add Rail Source

| | |
|---|---|
| Airport Noise Level | 58.5 |
| Loud Impulse Sounds? | Yes / **No** |
| Combined DNL for all Road and Rail sources | **67.2659** |
| Combined DNL including Airport | **67.7893** |
| Site DNL with Loud Impulse Sound | |

Calculate

# Mitigation Options

If your site DNL is in Excess of 65 decibels, your options are:

- **No Action Alternative**: Cancel the project at this location
- **Other Reasonable Alternatives**: Choose an alternate site
- **Mitigation**
  - **Contact your Field or Regional Environmental Officer (/programs/environmental-review/hud-environmental-staff-contacts/)**
  - Increase mitigation in the building walls (only effective if no outdoor, noise sensitive areas)
  - Reconfigure the site plan to increase the distance between the noise source and noise-sensitive uses
  - Incorporate natural or man-made barriers. See ***The Noise Guidebook (/resource/313/hud-noise-guidebook/)***
  - Construct noise barrier. See the **Barrier Performance Module (/programs/environmental-review/bpm-calculator/)**

# Tools and Guidance

**Day/Night Noise Level Assessment Tool User Guide (/resource/3822/day-night-noise-level-assessment-tool-user-guide/)**

**Day/Night Noise Level Assessment Tool Flowcharts (/resource/3823/day-night-noise-level-assessment-tool-flowcharts/)**

# DNL Calculator

**WARNING:** HUD recommends the use of Microsoft Internet Explorer for performing noise calculations. The HUD Noise Calculator has an error when using Google Chrome unless the cache is cleared before each use of the calculator. HUD is aware of the problem and working to fix it in the programming of the calculator.

The Day/Night Noise Level Calculator is an electronic assessment tool that calculates the Day/Night Noise Level (DNL) from roadway and railway traffic. For more information on using the DNL calculator, view the **Day/Night Noise Level Calculator Electronic Assessment Tool Overview (/programs/environmental-review/daynight-noise-level-electronic-assessment-tool/)**.

## Guidelines

- To display the Road and/or Rail DNL calculator(s), click on the "Add Road Source" and/or "Add Rail Source" button(s) below.
- All Road and Rail input values must be positive non-decimal numbers.
- All Road and/or Rail DNL value(s) must be calculated separately before calculating the Site DNL.
- All checkboxes that apply must be checked for vehicles and trains in the tables' headers.
- **Note #1:** Tooltips, containing field specific information, have been added in this tool and may be accessed by hovering over all the respective data fields (site identification, roadway and railway assessment, DNL calculation results, roadway and railway input variables) with the mouse.
- **Note #2:** DNL Calculator assumes roadway data is always entered.

## DNL Calculator

| | |
|---|---|
| **Site ID** | L St Development - Building E |
| **Record Date** | 08/02/2018 |
| **User's Name** | VHB |

| | |
|---|---|
| **Road # 1 Name:** | **Dedicated Freight Corridor** |

**Road #1**

| Vehicle Type | Cars ☐ | Medium Trucks ☐ | Heavy Trucks ☑ |
|---|---|---|---|
| Effective Distance | | | 230 |
| Distance to Stop Sign | | | |
| Average Speed | | | 15 |
| Average Daily Trips (ADT) | | | 1753 |
| Night Fraction of ADT | | | 0 |
| Road Gradient (%) | | | 0 |
| Vehicle DNL | | | 62.1119 |

Calculate Road #1 DNL | 62.1119 | Reset

Add Road Source | Add Rail Source

| | |
|---|---|
| Airport Noise Level | 58.5 |
| Loud Impulse Sounds? | ○ Yes ◉ No |
| Combined DNL for all Road and Rail sources | **62.1119** |
| Combined DNL including Airport | **63.7283** |
| Site DNL with Loud Impulse Sound | |

Calculate

# Mitigation Options

If your site DNL is in Excess of 65 decibels, your options are:

SB
File Name: \\WDMYCLOUDEX4100\PDIOffice\PDI 2017 Jobs\175708-South Boston (VHB)\175708 A Class.tf2
Start Date: 6/7/2017
Start Time: 12:00:00 AM
Site Code: TBD
Summer Street
north of Power House Street
City, State: South Boston, MA
Client: VHB/ C. Dube

| Date | Time | Bikes | Cars & Trailers | 2 Axle Long | Buses | 2 Axle 6 Tire | 3 Axle Single | 4 Axle Single | <5 Axl Double | 5 Axle Double | >6 Axl Double | <6 Axl Multi | 6 Axle Multi | >6 Axl Multi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6/7/2017 | 12:00 AM | 1 | 116 | 12 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6/7/2017 | 01:00 AM | 0 | 41 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6/7/2017 | 02:00 AM | 0 | 15 | 5 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 6/7/2017 | 03:00 AM | 0 | 25 | 6 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6/7/2017 | 04:00 AM | 1 | 52 | 11 | 1 | 7 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| 6/7/2017 | 05:00 AM | 4 | 191 | 43 | 2 | 11 | 0 | 0 | 2 | 5 | 2 | 0 | 0 | 0 |
| 6/7/2017 | 06:00 AM | 19 | 244 | 55 | 4 | 14 | 7 | 1 | 4 | 8 | 3 | 0 | 0 | 2 |
| 6/7/2017 | 07:00 AM | 19 | 374 | 74 | 7 | 21 | 16 | 4 | 6 | 12 | 1 | 0 | 0 | 1 |
| 6/7/2017 | 08:00 AM | 43 | 343 | 40 | 8 | 16 | 11 | 5 | 5 | 11 | 4 | 0 | 0 | 2 |
| 6/7/2017 | 09:00 AM | 33 | 359 | 47 | 13 | 12 | 11 | 4 | 2 | 41 | 4 | 0 | 0 | 1 |
| 6/7/2017 | 10:00 AM | 21 | 313 | 62 | 13 | 22 | 14 | 1 | 11 | 29 | 5 | 0 | 0 | 3 |
| 6/7/2017 | 11:00 AM | 18 | 309 | 67 | 17 | 22 | 6 | 4 | 3 | 36 | 2 | 0 | 0 | 1 |
| 6/7/2017 | 12:00 PM | 12 | 363 | 54 | 10 | 30 | 11 | 1 | 3 | 52 | 9 | 0 | 0 | 1 |
| 6/7/2017 | 01:00 PM | 25 | 395 | 80 | 12 | 10 | 7 | 1 | 6 | 40 | 5 | 0 | 0 | 2 |
| 6/7/2017 | 02:00 PM | 35 | 554 | 120 | 11 | 26 | 19 | 1 | 8 | 28 | 7 | 1 | 0 | 2 |
| 6/7/2017 | 03:00 PM | 30 | 625 | 104 | 7 | 30 | 10 | 1 | 6 | 19 | 7 | 1 | 1 | 1 |
| 6/7/2017 | 04:00 PM | 23 | 692 | 104 | 7 | 30 | 8 | 1 | 6 | 3 | 2 | 1 | 0 | 0 |
| 6/7/2017 | 05:00 PM | 52 | 835 | 101 | 4 | 15 | 14 | 0 | 7 | 3 | 0 | 0 | 1 | 0 |
| 6/7/2017 | 06:00 PM | 45 | 891 | 58 | 9 | 18 | 4 | 1 | 4 | 0 | 1 | 0 | 0 | 0 |
| 6/7/2017 | 07:00 PM | 12 | 638 | 74 | 3 | 20 | 4 | 0 | 10 | 0 | 1 | 0 | 0 | 0 |
| 6/7/2017 | 08:00 PM | 16 | 437 | 39 | 2 | 30 | 3 | 1 | 2 | 0 | 0 | 0 | 0 | 0 |
| 6/7/2017 | 09:00 PM | 7 | 375 | 35 | 2 | 15 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6/7/2017 | 10:00 PM | 3 | 283 | 37 | 3 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 6/7/2017 | 11:00 PM | 4 | 239 | 30 | 2 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6/8/2017 | 12:00 AM | 1 | 191 | 26 | 1 | 2 | 3 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| 6/8/2017 | 01:00 AM | 0 | 71 | 9 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| 6/8/2017 | 02:00 AM | 1 | 43 | 3 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6/8/2017 | 03:00 AM | 2 | 31 | 4 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6/8/2017 | 04:00 AM | 3 | 82 | 17 | 1 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6/8/2017 | 05:00 AM | 9 | 190 | 41 | 0 | 15 | 2 | 0 | 0 | 9 | 3 | 0 | 0 | 0 |
| 6/8/2017 | 06:00 AM | 13 | 265 | 51 | 4 | 18 | 7 | 1 | 5 | 8 | 3 | 0 | 0 | 0 |
| 6/8/2017 | 07:00 AM | 17 | 362 | 52 | 9 | 16 | 5 | 1 | 6 | 14 | 2 | 0 | 0 | 0 |
| 6/8/2017 | 08:00 AM | 27 | 395 | 44 | 9 | 21 | 10 | 2 | 6 | 8 | 0 | 0 | 0 | 2 |
| 6/8/2017 | 09:00 AM | 25 | 373 | 51 | 12 | 27 | 11 | 1 | 3 | 31 | 2 | 0 | 1 | 0 |
| 6/8/2017 | 10:00 AM | 26 | 309 | 72 | 11 | 23 | 14 | 0 | 2 | 40 | 10 | 0 | 0 | 2 |
| 6/8/2017 | 11:00 AM | 23 | 353 | 84 | 13 | 25 | 12 | 0 | 4 | 48 | 6 | 0 | 0 | 0 |
| 6/8/2017 | 12:00 PM | 31 | 370 | 56 | 8 | 28 | 11 | 2 | 1 | 41 | 4 | 1 | 0 | 1 |
| 6/8/2017 | 01:00 PM | 28 | 385 | 63 | 8 | 25 | 12 | 2 | 5 | 40 | 4 | 0 | 0 | 3 |
| 6/8/2017 | 02:00 PM | 33 | 553 | 88 | 7 | 27 | 17 | 3 | 8 | 18 | 7 | 1 | 0 | 1 |
| 6/8/2017 | 03:00 PM | 38 | 595 | 101 | 9 | 38 | 12 | 2 | 9 | 25 | 6 | 0 | 1 | 0 |
| 6/8/2017 | 04:00 PM | 34 | 768 | 84 | 7 | 23 | 14 | 1 | 7 | 1 | 3 | 1 | 0 | 0 |
| 6/8/2017 | 05:00 PM | 42 | 816 | 70 | 10 | 16 | 5 | 4 | 7 | 3 | 2 | 0 | 2 | 0 |
| 6/8/2017 | 06:00 PM | 40 | 817 | 76 | 12 | 10 | 4 | 2 | 9 | 0 | 0 | 0 | 0 | 1 |
| 6/8/2017 | 07:00 PM | 24 | 690 | 57 | 3 | 13 | 4 | 0 | 2 | 0 | 0 | 1 | 0 | 0 |
| 6/8/2017 | 08:00 PM | 11 | 446 | 40 | 1 | 26 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 6/8/2017 | 09:00 PM | 7 | 469 | 32 | 3 | 14 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 6/8/2017 | 10:00 PM | 10 | 547 | 42 | 3 | 2 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| 6/8/2017 | 11:00 PM | 9 | 332 | 17 | 2 | 4 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| | Total | 877 | 18162 | 2441 | 275 | 741 | 302 | 47 | 165 | 579 | 105 | 7 | 7 | 26 |
| | Day Total | 833 | 16599 | 2247 | 261 | 700 | 289 | 46 | 157 | 562 | 100 | 7 | 7 | 24 |
| | Night Total | 44 | 1563 | 194 | 14 | 41 | 13 | 1 | 8 | 17 | 5 | 0 | 0 | 2 |

Southbound summary

| | Cars | Medium Truck | Heavy Truck |
|---|---|---|---|
| Total | 20603 | 1016 | 1238 |
| Day Total | 18846 | 961 | 1192 |
| Night | 1757 | 55 | 46 |
| Night Fraction | 8.5% | 5.4% | 3.7% |

NB
File Name: \\WDMYCLOUDEX4100\PDIOffice\PDI 2017 Jobs\175708-South Boston (VHB)\175708 A Class.tf2
Start Date: 6/7/2017
Start Time: 12:00:00 AM
Site Code: TBD
Summer Street
north of Power House Street
City, State: South Boston, MA
Client: VHB/ C. Dube

| Date | Time | Bikes | Cars & Trailers | 2 Axle Long | Buses | 2 Axle 6 Tire | 3 Axle Single | 4 Axle Single | <5 Axl Double | 5 Axle Double | >6 Axl Double | <6 Axl Multi | 6 Axle Multi | >6 Axl Multi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6/7/2017 | 12:00 AM | 1 | 66 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6/7/2017 | 01:00 AM | 0 | 24 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6/7/2017 | 02:00 AM | 0 | 28 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6/7/2017 | 03:00 AM | 0 | 20 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6/7/2017 | 04:00 AM | 1 | 88 | 10 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6/7/2017 | 05:00 AM | 4 | 308 | 73 | 2 | 26 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| 6/7/2017 | 06:00 AM | 13 | 632 | 124 | 14 | 58 | 4 | 1 | 5 | 1 | 0 | 0 | 0 | 0 |
| 6/7/2017 | 07:00 AM | 25 | 981 | 134 | 16 | 39 | 4 | 0 | 4 | 2 | 1 | 0 | 0 | 0 |
| 6/7/2017 | 08:00 AM | 36 | 683 | 250 | 22 | 67 | 9 | 2 | 17 | 22 | 4 | 0 | 0 | 1 |
| 6/7/2017 | 09:00 AM | 26 | 524 | 87 | 18 | 30 | 11 | 1 | 4 | 33 | 5 | 0 | 0 | 1 |
| 6/7/2017 | 10:00 AM | 11 | 389 | 94 | 13 | 35 | 2 | 1 | 4 | 39 | 3 | 0 | 0 | 0 |
| 6/7/2017 | 11:00 AM | 18 | 342 | 64 | 10 | 24 | 8 | 0 | 1 | 48 | 3 | 0 | 0 | 0 |
| 6/7/2017 | 12:00 PM | 7 | 330 | 55 | 14 | 33 | 6 | 1 | 0 | 41 | 2 | 0 | 0 | 0 |
| 6/7/2017 | 01:00 PM | 19 | 330 | 67 | 11 | 21 | 17 | 1 | 4 | 53 | 4 | 0 | 0 | 0 |
| 6/7/2017 | 02:00 PM | 21 | 397 | 82 | 8 | 35 | 14 | 3 | 2 | 31 | 5 | 0 | 0 | 0 |
| 6/7/2017 | 03:00 PM | 21 | 386 | 60 | 10 | 28 | 9 | 1 | 5 | 31 | 2 | 0 | 0 | 1 |
| 6/7/2017 | 04:00 PM | 29 | 548 | 85 | 16 | 26 | 7 | 1 | 5 | 24 | 2 | 0 | 0 | 0 |
| 6/7/2017 | 05:00 PM | 18 | 566 | 91 | 4 | 17 | 6 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| 6/7/2017 | 06:00 PM | 23 | 452 | 61 | 6 | 15 | 3 | 1 | 2 | 0 | 0 | 0 | 0 | 0 |
| 6/7/2017 | 07:00 PM | 8 | 347 | 64 | 3 | 13 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 6/7/2017 | 08:00 PM | 17 | 350 | 48 | 1 | 12 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 |
| 6/7/2017 | 09:00 PM | 10 | 289 | 35 | 4 | 11 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6/7/2017 | 10:00 PM | 4 | 187 | 25 | 0 | 5 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| 6/7/2017 | 11:00 PM | 3 | 138 | 18 | 1 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6/8/2017 | 12:00 AM | 4 | 87 | 13 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6/8/2017 | 01:00 AM | 4 | 47 | 10 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 6/8/2017 | 02:00 AM | 0 | 31 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6/8/2017 | 03:00 AM | 3 | 38 | 3 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6/8/2017 | 04:00 AM | 0 | 76 | 14 | 0 | 7 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 6/8/2017 | 05:00 AM | 6 | 344 | 79 | 2 | 51 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 6/8/2017 | 06:00 AM | 17 | 634 | 133 | 13 | 81 | 3 | 1 | 7 | 0 | 1 | 0 | 0 | 0 |
| 6/8/2017 | 07:00 AM | 21 | 719 | 75 | 13 | 23 | 9 | 0 | 7 | 1 | 0 | 0 | 0 | 0 |
| 6/8/2017 | 08:00 AM | 32 | 741 | 63 | 14 | 33 | 10 | 3 | 4 | 20 | 1 | 0 | 0 | 0 |
| 6/8/2017 | 09:00 AM | 20 | 602 | 90 | 16 | 54 | 8 | 1 | 5 | 30 | 4 | 0 | 0 | 0 |
| 6/8/2017 | 10:00 AM | 20 | 407 | 92 | 9 | 33 | 7 | 0 | 2 | 39 | 3 | 0 | 0 | 2 |
| 6/8/2017 | 11:00 AM | 18 | 354 | 91 | 15 | 29 | 10 | 1 | 4 | 42 | 11 | 0 | 0 | 0 |
| 6/8/2017 | 12:00 PM | 19 | 412 | 78 | 14 | 26 | 5 | 2 | 0 | 34 | 2 | 0 | 0 | 0 |
| 6/8/2017 | 01:00 PM | 14 | 340 | 58 | 8 | 21 | 3 | 3 | 0 | 54 | 5 | 0 | 0 | 1 |
| 6/8/2017 | 02:00 PM | 26 | 398 | 74 | 9 | 37 | 12 | 0 | 3 | 41 | 1 | 0 | 0 | 0 |
| 6/8/2017 | 03:00 PM | 28 | 432 | 62 | 10 | 29 | 12 | 0 | 2 | 29 | 4 | 0 | 0 | 0 |
| 6/8/2017 | 04:00 PM | 33 | 523 | 66 | 10 | 28 | 11 | 0 | 5 | 19 | 2 | 0 | 0 | 0 |
| 6/8/2017 | 05:00 PM | 39 | 519 | 67 | 11 | 21 | 2 | 0 | 1 | 1 | 1 | 0 | 0 | 0 |
| 6/8/2017 | 06:00 PM | 26 | 496 | 50 | 5 | 9 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 6/8/2017 | 07:00 PM | 16 | 392 | 39 | 6 | 10 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 6/8/2017 | 08:00 PM | 10 | 357 | 25 | 3 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6/8/2017 | 09:00 PM | 14 | 309 | 35 | 4 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6/8/2017 | 10:00 PM | 8 | 310 | 26 | 1 | 8 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 6/8/2017 | 11:00 PM | 6 | 192 | 18 | 2 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Total | 699 | 17165 | 2810 | 343 | 1037 | 204 | 31 | 106 | 636 | 67 | 0 | 0 | 6 |
| | Day Total | 666 | 15497 | 2540 | 322 | 937 | 196 | 29 | 98 | 635 | 67 | 0 | 0 | 6 |
| | Night Total | 33 | 1668 | 270 | 21 | 100 | 8 | 2 | 8 | 1 | 0 | 0 | 0 | 0 |

Northbound summary

| | Cars | Medium Tru | Heavy Truck |
|---|---|---|---|
| Total | 19975 | 1380 | 1050 |
| Day Total | 18037 | 1259 | 1031 |
| Night | 1938 | 121 | 19 |
| Night Fract | 9.7% | 8.8% | 1.8% |

Bi-direction Summary

| | Cars | Medium Truck | Heavy Truck |
|---|---|---|---|
| Total | 40578 | 2396 | 2288 |
| Day Total | 36883 | 2220 | 2223 |
| Night | 3695 | 176 | 65 |
| Night Fract | 9.1% | 7.3% | 2.8% |

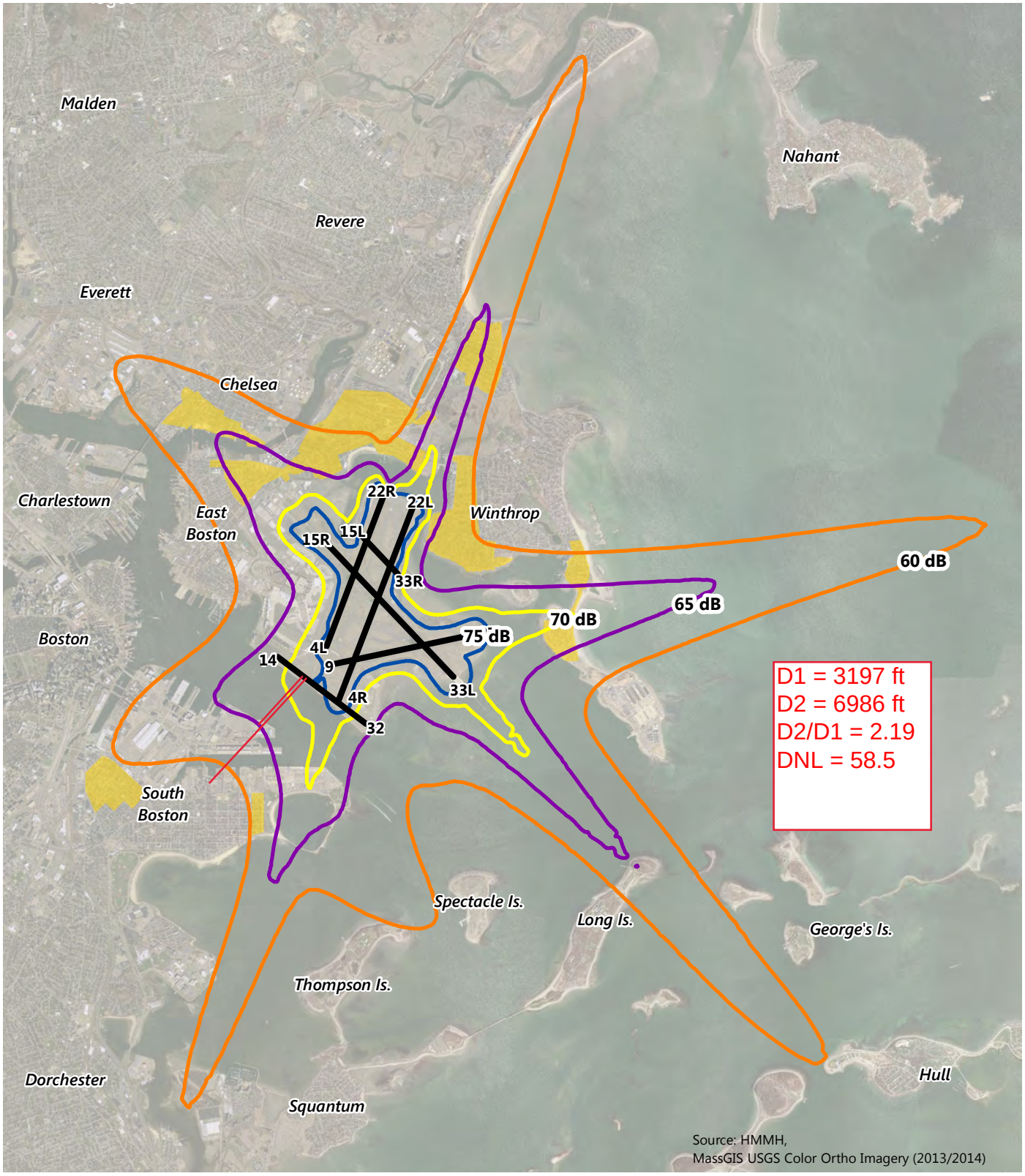



**FIGURE 6-13 60-75 DNL Contours for 2016 Operations Using AEDT 2c**

**2016 Environmental Data Report**

**2016 DNL Contour (AEDT 2c)**

- 60 dB
- 65 dB
- 70 dB
- 75 dB
- Sound Insulation Areas

1.02 in

0 1750 3500 7000 Feet

# Appendix F: Air Quality / GHG Supporting Documentation

# APPENDIX F: AIR QUALITY AND GREENHOUSE GASES SUPPORTING DOCUMENTATION

MOVES Mesoscale Output
Mobile Source Mesoscale Analysis
Background Concentrations
MOVES Microscale Output
Mobile Source Microscale Analysis
Energy Modeling
Stationary Source Analysis
Renewable Analysis
Passive House Analysis

# MOVES Mesoscale Output

# L Street Redevelopment

## Emissions Factors By Link (g/mi)

### Emission Factors From MOVES2014a

| | Roadway Segments | 2017 Existing | | | 2030 No Build | | | 2030 Build | | | 2030 Build-Mit | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $NO_x$ | VOC | $CO_2$ | $NO_x$ | VOC | $CO_2$ | $NO_x$ | VOC | $CO_2$ | $NO_x$ | VOC | $CO_2$ |
| 1 | Summer St (Pumphouse/Drydock) | 0.27 | 0.82 | 458.05 | 0.08 | 0.46 | 321.32 | 0.08 | 0.46 | 321.32 | 0.08 | 0.46 | 321.32 |
| 2 | Drydock Ave (Summer/Harbor) | 0.26 | 0.76 | 477.04 | 0.07 | 0.42 | 333.63 | 0.07 | 0.42 | 333.63 | 0.07 | 0.42 | 333.63 |
| 3 | Pappas Way (Summer/W 1st)) | 0.27 | 0.22 | 485.66 | 0.07 | 0.12 | 339.77 | 0.07 | 0.12 | 339.77 | 0.07 | 0.12 | 339.77 |
| 4 | Summer St (Drydock/Freight Road) | 0.26 | 0.33 | 439.77 | 0.07 | 0.18 | 308.35 | 0.07 | 0.18 | 308.35 | 0.07 | 0.18 | 308.35 |
| 5 | Fedex Drwy (Summer) | 0.30 | 3.82 | 515.87 | 0.09 | 2.14 | 361.26 | 0.09 | 2.14 | 361.26 | 0.09 | 2.14 | 361.26 |
| 6 | Freight Road (Summer) | 0.28 | 0.44 | 494.66 | 0.08 | 0.24 | 346.15 | 0.08 | 0.24 | 346.15 | 0.08 | 0.24 | 346.15 |
| 7 | Summer St (Freight/Elkins) | 0.25 | 0.65 | 427.77 | 0.07 | 0.36 | 299.81 | 0.07 | 0.36 | 299.81 | 0.07 | 0.36 | 299.81 |
| 8 | Elkins/K St (Summer/E 1st) | 0.28 | 0.52 | 490.65 | 0.08 | 0.29 | 343.28 | 0.08 | 0.29 | 343.28 | 0.08 | 0.29 | 343.28 |
| 9 | Summer St(Elkins/E 1st) | 0.26 | 1.14 | 437.53 | 0.07 | 0.63 | 306.77 | 0.07 | 0.63 | 306.77 | 0.07 | 0.63 | 306.77 |
| 10 | E 1st St (M/Farragut) | 0.26 | 0.25 | 445.10 | 0.08 | 0.13 | 312.13 | 0.08 | 0.13 | 312.13 | 0.08 | 0.13 | 312.13 |
| 11 | M St (E 1st/Broadway) | 0.14 | 0.50 | 341.73 | 0.04 | 0.28 | 237.60 | 0.04 | 0.28 | 237.60 | 0.04 | 0.28 | 237.60 |
| 12 | E 1st St (Summer/M) | 0.32 | 0.76 | 502.74 | 0.09 | 0.42 | 353.05 | 0.09 | 0.42 | 353.05 | 0.09 | 0.42 | 353.05 |
| 13 | E 1st St (K/Summer) | 0.29 | 0.83 | 507.36 | 0.08 | 0.46 | 355.15 | 0.08 | 0.46 | 355.15 | 0.08 | 0.46 | 355.15 |
| 14 | K St (E 1st/Broadway) | 0.19 | 0.51 | 400.20 | 0.05 | 0.28 | 279.05 | 0.05 | 0.28 | 279.05 | 0.05 | 0.28 | 279.05 |
| 15 | E 1st St (K/Pappas) | 0.27 | 0.29 | 483.81 | 0.07 | 0.16 | 338.45 | 0.07 | 0.16 | 338.45 | 0.07 | 0.16 | 338.45 |
| 16 | W 1st St (Pappas/Dorchester) | 0.18 | 1.00 | 388.47 | 0.05 | 0.56 | 270.70 | 0.05 | 0.56 | 270.70 | 0.05 | 0.56 | 270.70 |
| 17 | W 1st St (D/Papps) | 0.27 | 0.34 | 485.29 | 0.07 | 0.18 | 339.49 | 0.07 | 0.18 | 339.49 | 0.07 | 0.18 | 339.49 |
| 18 | L St (E 1st/E 2nd) | 0.33 | 1.33 | 510.38 | 0.10 | 0.74 | 358.51 | 0.10 | 0.74 | 358.51 | 0.10 | 0.74 | 358.51 |
| 19 | E 2nd St (Dorchester/L) | 0.28 | 0.26 | 490.29 | 0.08 | 0.14 | 343.03 | 0.08 | 0.14 | 343.03 | 0.08 | 0.14 | 343.03 |
| 20 | E 2nd St (L/M) | 0.37 | 0.77 | 572.61 | 0.11 | 0.43 | 401.79 | 0.11 | 0.43 | 401.79 | 0.11 | 0.43 | 401.79 |
| 21 | L St (E 2nd/E 3rd) | 0.31 | 1.32 | 496.41 | 0.09 | 0.74 | 348.53 | 0.09 | 0.74 | 348.53 | 0.09 | 0.74 | 348.53 |
| 22 | E 3rd St (Dorchester/L) | 0.31 | 0.25 | 521.39 | 0.09 | 0.13 | 365.18 | 0.09 | 0.13 | 365.18 | 0.09 | 0.13 | 365.18 |
| 23 | E 3rd St (L/M) | 0.50 | 0.80 | 707.44 | 0.17 | 0.44 | 497.35 | 0.17 | 0.44 | 497.35 | 0.17 | 0.44 | 497.35 |
| 24 | L St (E 3rd/E Broadway) | 0.37 | 1.33 | 555.22 | 0.11 | 0.74 | 390.32 | 0.11 | 0.74 | 390.32 | 0.11 | 0.74 | 390.32 |
| 25 | E Broadway (Dorchester/L) | 0.31 | 0.23 | 518.82 | 0.09 | 0.12 | 363.34 | 0.09 | 0.12 | 363.34 | 0.09 | 0.12 | 363.34 |
| 26 | E Broadway (L/Farragut) | 0.28 | 0.22 | 491.24 | 0.08 | 0.12 | 343.70 | 0.08 | 0.12 | 343.70 | 0.08 | 0.12 | 343.70 |
| 27 | L St (E Broadway/E 5th) | 0.25 | 0.69 | 433.39 | 0.07 | 0.38 | 303.79 | 0.07 | 0.38 | 303.79 | 0.07 | 0.38 | 303.79 |
| 28 | E 5th St (G/L) | 0.38 | 0.26 | 584.86 | 0.11 | 0.14 | 410.49 | 0.11 | 0.14 | 410.49 | 0.11 | 0.14 | 410.49 |
| 29 | E 5th St (L/Farragut) | 0.28 | 0.22 | 498.66 | 0.08 | 0.12 | 348.95 | 0.08 | 0.12 | 348.95 | 0.08 | 0.12 | 348.95 |
| 30 | L St (E 5th/E 8th) | 0.29 | 0.52 | 470.06 | 0.08 | 0.28 | 329.83 | 0.08 | 0.28 | 329.83 | 0.08 | 0.28 | 329.83 |
| 31 | E 8th St (Dorchester/L) | 0.27 | 0.17 | 482.37 | 0.07 | 0.09 | 337.42 | 0.07 | 0.09 | 337.42 | 0.07 | 0.09 | 337.42 |
| 32 | E 8th St (L/Day) | 0.31 | 0.35 | 519.39 | 0.09 | 0.19 | 363.74 | 0.09 | 0.19 | 363.74 | 0.09 | 0.19 | 363.74 |
| 33 | L St (E 8th/Columbia) | 0.31 | 0.65 | 497.62 | 0.09 | 0.36 | 349.38 | 0.09 | 0.36 | 349.38 | 0.09 | 0.36 | 349.38 |
| 34 | Columbia Rd (G/L) | 0.27 | 0.24 | 481.92 | 0.07 | 0.13 | 337.10 | 0.07 | 0.13 | 337.10 | 0.07 | 0.13 | 337.10 |
| 35 | Columbia Rd (L/O) | 0.27 | 0.29 | 481.78 | 0.07 | 0.16 | 336.99 | 0.07 | 0.16 | 336.99 | 0.07 | 0.16 | 336.99 |
| 36 | L St (Columbia/Day) | 0.25 | 7.53 | 427.77 | 0.07 | 4.23 | 299.81 | 0.07 | 4.23 | 299.81 | 0.07 | 4.23 | 299.81 |
| 37 | Day Blvd (G/L) | 0.25 | 0.23 | 431.65 | 0.07 | 0.12 | 302.57 | 0.07 | 0.12 | 302.57 | 0.07 | 0.12 | 302.57 |
| 38 | Day Blvd (L/O) | 0.25 | 0.28 | 431.22 | 0.07 | 0.15 | 302.27 | 0.07 | 0.15 | 302.27 | 0.07 | 0.15 | 302.27 |
| 39 | Elkin Drwy (Summer) [BD] | 0.32 | 0.86 | 625.58 | 0.08 | 0.48 | 437.42 | 0.08 | 0.48 | 437.42 | 0.08 | 0.48 | 437.42 |
| 40 | M St Drwy (E 1st) [BD] | 0.32 | 0.86 | 625.58 | 0.08 | 0.48 | 437.42 | 0.08 | 0.48 | 437.42 | 0.08 | 0.48 | 437.42 |
| 41 | Idle | 1.92 | 1.11 | 4078.17 | 0.35 | 0.61 | 2,821.74 | 0.35 | 0.61 | 2,821.74 | 0.35 | 0.61 | 2,821.74 |

| yearID | monthID | dayID | hourID | stateID | countyID | zoneID | linkID | pollutantID | emissionQuant | emissionRate | massUnits | distanceUnits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 1 | 1 | 0.074589536 | 0.745895345 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 1 | 3 | 0.027497895 | 0.274978947 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 1 | 79 | 0.074097931 | 0.740979303 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 1 | 87 | 0.082103819 | 0.821038174 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 1 | 90 | 45.80469894 | 458.0469826 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 1 | 91 | 0.00060295 | 0.0060295 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 2 | 1 | 0.075897321 | 0.68997565 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 2 | 3 | 0.028982108 | 0.263473715 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 2 | 79 | 0.075369358 | 0.685175986 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 2 | 87 | 0.083438784 | 0.758534403 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 2 | 90 | 52.47470093 | 477.0427383 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 2 | 91 | 0.000690847 | 0.006280426 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 3 | 1 | 0.112544104 | 0.208415 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 3 | 3 | 0.146689102 | 0.271646474 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 3 | 79 | 0.109866798 | 0.203457025 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 3 | 87 | 0.118672095 | 0.219763131 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 3 | 90 | 262.2590027 | 485.6648005 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 3 | 91 | 0.003452661 | 0.006393816 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 4 | 1 | 0.088793099 | 0.306183109 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 4 | 3 | 0.074688256 | 0.257545717 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 4 | 79 | 0.087446004 | 0.301537954 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 4 | 87 | 0.095714033 | 0.330048398 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 4 | 90 | 127.5329971 | 439.7689683 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 4 | 91 | 0.00167883 | 0.005789071 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 5 | 1 | 0.068530262 | 3.426513152 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 5 | 3 | 0.006060589 | 0.303029439 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 5 | 79 | 0.068417899 | 3.420895042 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 5 | 87 | 0.07632605 | 3.816302579 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 5 | 90 | 10.31739998 | 515.8700105 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 5 | 91 | 0.000135822 | 0.00679111 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 6 | 1 | 0.0848061 | 0.403838582 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 6 | 3 | 0.058846503 | 0.280221454 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 6 | 79 | 0.083737902 | 0.398751928 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 6 | 87 | 0.091969751 | 0.437951208 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 6 | 90 | 103.8789978 | 494.6619097 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 6 | 91 | 0.001367548 | 0.006512135 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 7 | 1 | 0.076391071 | 0.587623645 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 7 | 3 | 0.031955883 | 0.245814493 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 7 | 79 | 0.075810716 | 0.583159372 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 7 | 87 | 0.083868057 | 0.64513892 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 7 | 90 | 55.61029816 | 427.77154 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 7 | 91 | 0.00073207 | 0.00563131 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 8 | 1 | 0.081271701 | 0.478068822 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 8 | 3 | 0.046954919 | 0.276205401 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 8 | 79 | 0.080415197 | 0.473030564 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 8 | 87 | 0.088581331 | 0.521066648 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 8 | 90 | 83.41069794 | 490.6511592 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 8 | 91 | 0.001098103 | 0.006459429 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 9 | 1 | 0.072030909 | 1.029012986 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 9 | 3 | 0.01788719 | 0.255531284 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 9 | 79 | 0.071707517 | 1.024393094 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 9 | 87 | 0.079678915 | 1.138270216 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 9 | 90 | 30.62739944 | 437.5342759 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 9 | 91 | 0.000403178 | 0.005759681 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 10 | 1 | 0.099767499 | 0.232017435 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 10 | 3 | 0.112892538 | 0.262540782 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 10 | 79 | 0.097737901 | 0.22729744 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 10 | 87 | 0.106188007 | 0.246948849 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 10 | 90 | 191.3910065 | 445.0953565 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 10 | 91 | 0.00251943 | 0.00585914 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 11 | 1 | 0.07813298 | 0.459605757 | g | mi |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 11 | 3 | 0.02410361 | 0.141785939 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 11 | 79 | 0.077575609 | 0.456327107 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 11 | 87 | 0.085794926 | 0.504676028 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 11 | 90 | 58.09469986 | 341.733525 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 11 | 91 | 0.000765106 | 0.004500626 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 12 | 1 | 0.076141611 | 0.692196465 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 12 | 3 | 0.035045926 | 0.318599325 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 12 | 79 | 0.075515307 | 0.686502799 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 12 | 87 | 0.083517589 | 0.75925081 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 12 | 90 | 55.30189896 | 502.7445387 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 12 | 91 | 0.00072792 | 0.006617452 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 13 | 1 | 0.075580329 | 0.755803276 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 13 | 3 | 0.029336527 | 0.293365266 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 13 | 79 | 0.075041533 | 0.750415314 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 13 | 87 | 0.08308062 | 0.830806183 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 13 | 90 | 50.73600006 | 507.3599931 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 13 | 91 | 0.00066792 | 0.0066792 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 14 | 1 | 0.079241 | 0.466123525 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 14 | 3 | 0.032369666 | 0.190409797 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 14 | 79 | 0.078585312 | 0.462266535 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 14 | 87 | 0.086788662 | 0.510521535 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 14 | 90 | 68.03320313 | 400.1953083 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 14 | 91 | 0.000895854 | 0.005269729 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 15 | 1 | 0.096280999 | 0.275088575 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 15 | 3 | 0.094338477 | 0.269538509 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 15 | 79 | 0.094563201 | 0.270180579 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 15 | 87 | 0.103045635 | 0.294416105 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 15 | 90 | 169.3350067 | 483.8143131 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 15 | 91 | 0.002229332 | 0.006369521 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 16 | 1 | 0.072511405 | 0.90639258 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 16 | 3 | 0.01439857 | 0.179982131 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 16 | 79 | 0.072210819 | 0.902635252 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 16 | 87 | 0.080242544 | 1.003031828 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 16 | 90 | 31.07789993 | 388.4737578 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 16 | 91 | 0.000409245 | 0.005115559 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 17 | 1 | 0.0913179 | 0.314889318 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 17 | 3 | 0.078653574 | 0.271219228 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 17 | 79 | 0.089880601 | 0.309933114 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 17 | 87 | 0.098256305 | 0.338814854 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 17 | 90 | 140.7339935 | 485.2896468 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 17 | 91 | 0.001852783 | 0.006388908 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 18 | 1 | 0.071935594 | 1.198926595 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 18 | 3 | 0.019579899 | 0.32633165 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 18 | 79 | 0.071585864 | 1.193097757 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 18 | 87 | 0.07952971 | 1.325495198 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 18 | 90 | 30.62280083 | 510.3800252 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 18 | 91 | 0.000403073 | 0.006717891 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 19 | 1 | 0.101803102 | 0.24830025 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 19 | 3 | 0.11315389 | 0.275985099 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 19 | 79 | 0.099738099 | 0.243263657 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 19 | 87 | 0.108313762 | 0.264179909 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 19 | 90 | 201.0169983 | 490.285366 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 19 | 91 | 0.0026464 | 0.006454635 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 20 | 1 | 0.07796289 | 0.708753552 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 20 | 3 | 0.040151428 | 0.365012988 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 20 | 79 | 0.077188633 | 0.701714853 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 20 | 87 | 0.085204899 | 0.774589998 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 20 | 90 | 62.98659897 | 572.6054483 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 20 | 91 | 0.000829092 | 0.007537196 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 21 | 1 | 0.071802981 | 1.19671638 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 21 | 3 | 0.018754741 | 0.312579027 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 21 | 79 | 0.071467534 | 1.191125588 | g | mi |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 21 | 87 | 0.079413973 | 1.323566243 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 21 | 90 | 29.78450012 | 496.4083465 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 21 | 91 | 0.000392048 | 0.00653414 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 22 | 1 | 0.109023198 | 0.237006949 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 22 | 3 | 0.142395854 | 0.309556199 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 22 | 79 | 0.106350198 | 0.231196079 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 22 | 87 | 0.114934906 | 0.249858488 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 22 | 90 | 239.8399963 | 521.3912869 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 22 | 91 | 0.003157311 | 0.00686372 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 23 | 1 | 0.081180602 | 0.73800548 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 23 | 3 | 0.055350892 | 0.503189932 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 23 | 79 | 0.080018699 | 0.727442724 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 23 | 87 | 0.087957628 | 0.799614805 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 23 | 90 | 77.81839752 | 707.4399813 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 23 | 91 | 0.001024202 | 0.009310924 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 24 | 1 | 0.072374471 | 1.206241202 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 24 | 3 | 0.022193717 | 0.369895289 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 24 | 79 | 0.071976341 | 1.199605715 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 24 | 87 | 0.079910979 | 1.331849674 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 24 | 90 | 33.31290054 | 555.2150215 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 24 | 91 | 0.00043846 | 0.00730767 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 25 | 1 | 0.113394395 | 0.222341954 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 25 | 3 | 0.15648064 | 0.30682479 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 25 | 79 | 0.110455304 | 0.216579032 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 25 | 87 | 0.119122893 | 0.233574304 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 25 | 90 | 264.5979919 | 518.8196017 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 25 | 91 | 0.003483256 | 0.006829914 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 26 | 1 | 0.1121113 | 0.211530767 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 26 | 3 | 0.146677077 | 0.276749216 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 26 | 79 | 0.1094395 | 0.206489633 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 26 | 87 | 0.118218437 | 0.223053666 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 26 | 90 | 260.3590088 | 491.2434393 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 26 | 91 | 0.003427629 | 0.006467225 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 27 | 1 | 0.075747311 | 0.631227607 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 27 | 3 | 0.03014148 | 0.251179008 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 27 | 79 | 0.075201303 | 0.626677537 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 27 | 87 | 0.083242536 | 0.693687812 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 27 | 90 | 52.00659943 | 433.3883382 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 27 | 91 | 0.000684623 | 0.005705195 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 28 | 1 | 0.113587998 | 0.25241778 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 28 | 3 | 0.169721603 | 0.377159129 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 28 | 79 | 0.110320702 | 0.245157122 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 28 | 87 | 0.118747622 | 0.263883611 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 28 | 90 | 263.1849976 | 584.8555656 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 28 | 91 | 0.003464252 | 0.007698339 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 29 | 1 | 0.112844698 | 0.212914536 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 29 | 3 | 0.150709093 | 0.284356794 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 29 | 79 | 0.110086694 | 0.207710755 | g | mi |
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| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 29 | 91 | 0.003479351 | 0.006564814 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 30 | 1 | 0.080449902 | 0.47323471 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 30 | 3 | 0.048787817 | 0.286987158 | g | mi |
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| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 30 | 87 | 0.087663554 | 0.515667957 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 30 | 90 | 79.9108963 | 470.0640909 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 30 | 91 | 0.001051887 | 0.006187573 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 31 | 1 | 0.138303503 | 0.162709999 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 31 | 3 | 0.227943227 | 0.268168494 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 31 | 79 | 0.1341566 | 0.157831289 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 31 | 87 | 0.143512666 | 0.168838426 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 31 | 90 | 410.0159912 | 482.3717408 | g | mi |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 31 | 91 | 0.005397951 | 0.006350531 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 32 | 1 | 0.092361599 | 0.329862853 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 32 | 3 | 0.086066164 | 0.307379156 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 32 | 79 | 0.090746604 | 0.324095013 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 32 | 87 | 0.099057518 | 0.353776848 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 32 | 90 | 145.4279938 | 519.3856898 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 32 | 91 | 0.001914448 | 0.006837315 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 33 | 1 | 0.077751718 | 0.598090164 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 33 | 3 | 0.040768694 | 0.313605351 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 33 | 79 | 0.077022955 | 0.59248429 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 33 | 87 | 0.085050561 | 0.654235105 | g | mi |
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| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 33 | 91 | 0.000851504 | 0.006550029 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 34 | 1 | 0.106278799 | 0.226125106 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 34 | 3 | 0.125844359 | 0.267753957 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 34 | 79 | 0.103987098 | 0.221249145 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 34 | 87 | 0.112681799 | 0.239748508 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 34 | 90 | 226.5039978 | 481.9234008 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 34 | 91 | 0.002981975 | 0.006344627 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 35 | 1 | 0.096174702 | 0.274784868 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 35 | 3 | 0.093652256 | 0.267577878 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 35 | 79 | 0.094468504 | 0.269910017 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 35 | 87 | 0.102954224 | 0.29415493 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 35 | 90 | 168.6230011 | 481.7800113 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 35 | 91 | 0.002219958 | 0.006342738 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 36 | 1 | 0.067464225 | 6.74642265 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 36 | 3 | 0.002458143 | 0.24581431 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 36 | 79 | 0.067419581 | 6.741958262 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 36 | 87 | 0.075310037 | 7.531003822 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 36 | 90 | 4.277719975 | 427.772007 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 36 | 91 | 5.63131E-05 | 0.005631313 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 37 | 1 | 0.101947397 | 0.216909356 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 37 | 3 | 0.117249645 | 0.249467331 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 37 | 79 | 0.099823505 | 0.212390436 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 37 | 87 | 0.108347945 | 0.230527543 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 37 | 90 | 202.8739929 | 431.6467945 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 37 | 91 | 0.002670664 | 0.005682264 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 38 | 1 | 0.092911094 | 0.265460274 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 38 | 3 | 0.087133676 | 0.248953364 | g | mi |
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| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 38 | 87 | 0.09969449 | 0.284841406 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 38 | 90 | 150.927002 | 431.2200129 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 38 | 91 | 0.001986824 | 0.005676639 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 39 | 1 | 0.078699313 | 0.786993119 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 39 | 3 | 0.031945799 | 0.319457981 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 39 | 79 | 0.078060403 | 0.780604023 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 39 | 87 | 0.086253308 | 0.862533065 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 39 | 90 | 62.55830002 | 625.5829909 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 39 | 91 | 0.000823616 | 0.00823616 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 40 | 1 | 0.078699313 | 0.786993119 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 40 | 3 | 0.031945799 | 0.319457981 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 40 | 79 | 0.078060403 | 0.780604023 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 40 | 87 | 0.086253308 | 0.862533065 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 40 | 90 | 62.55830002 | 625.5829909 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 40 | 91 | 0.000823616 | 0.00823616 | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 41 | 1 | 1.089841962 | NULL | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 41 | 3 | 1.924389124 | NULL | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 41 | 79 | 1.057399869 | NULL | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 41 | 87 | 1.114889383 | NULL | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 41 | 90 | 4078.169922 | NULL | g | mi |
| 2017 | 7 | 5 | 16 | 25 | 25025 | 250250 | 41 | 91 | 0.053714406 | NULL | g | mi |

| yearID | monthID | dayID | hourID | stateID | countyID | zoneID | linkID | pollutantID | emissionQuant | emissionRate | massUnits | distanceUnits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 1 | 1 | 0.041281369 | 0.41281368 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 1 | 3 | 0.007924454 | 0.079244542 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 1 | 79 | 0.04090615 | 0.409061493 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 1 | 87 | 0.045587316 | 0.455873155 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 1 | 90 | 32.13190079 | 321.3190031 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 1 | 91 | 0.000422826 | 0.004228259 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 2 | 1 | 0.04187059 | 0.380641732 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 2 | 3 | 0.007919942 | 0.071999473 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 2 | 79 | 0.041464709 | 0.3769519 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 2 | 87 | 0.046184637 | 0.419860335 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 2 | 90 | 36.69929886 | 333.6299914 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 2 | 91 | 0.000483017 | 0.004391064 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 3 | 1 | 0.060376398 | 0.11180814 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 3 | 3 | 0.040428072 | 0.074866797 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 3 | 79 | 0.0583224 | 0.10800444 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 3 | 87 | 0.063121371 | 0.116891423 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 3 | 90 | 183.473999 | 339.7666514 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 3 | 91 | 0.002414744 | 0.004471748 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 4 | 1 | 0.048494399 | 0.167222069 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 4 | 3 | 0.021319918 | 0.073516962 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 4 | 79 | 0.04746291 | 0.163665213 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 4 | 87 | 0.052149381 | 0.179825459 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 4 | 90 | 89.42230225 | 308.3527752 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 4 | 91 | 0.001176762 | 0.004057801 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 5 | 1 | 0.038184661 | 1.909233114 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 5 | 3 | 0.001724856 | 0.086242806 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 5 | 79 | 0.038099077 | 1.904953873 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 5 | 87 | 0.042791065 | 2.139553289 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 5 | 90 | 7.22521019 | 361.2605176 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 5 | 91 | 9.5085E-05 | 0.004754251 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 6 | 1 | 0.046400782 | 0.22095611 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 6 | 3 | 0.016291197 | 0.077577133 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 6 | 79 | 0.045582429 | 0.21705919 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 6 | 87 | 0.050306771 | 0.23955606 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 6 | 90 | 72.69110107 | 346.1481112 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 6 | 91 | 0.000956679 | 0.004555615 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 7 | 1 | 0.042164601 | 0.324343099 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 7 | 3 | 0.009074643 | 0.069804951 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 7 | 79 | 0.041718829 | 0.320914084 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 7 | 87 | 0.046416581 | 0.357050634 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 7 | 90 | 38.97539902 | 299.8107727 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 7 | 91 | 0.00051292 | 0.003945537 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 8 | 1 | 0.04461186 | 0.262422704 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 8 | 3 | 0.012989913 | 0.076411253 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 8 | 79 | 0.043955073 | 0.258559249 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 8 | 87 | 0.048676312 | 0.286331244 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 8 | 90 | 58.35760117 | 343.2800032 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 8 | 91 | 0.00076805 | 0.004517943 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 9 | 1 | 0.039959621 | 0.570851722 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 9 | 3 | 0.005107055 | 0.072957934 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 9 | 79 | 0.039711889 | 0.567312696 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 9 | 87 | 0.044403467 | 0.634335245 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 9 | 90 | 21.47410011 | 306.7728574 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 9 | 91 | 0.000282593 | 0.004037037 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 10 | 1 | 0.0541033 | 0.125821626 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 10 | 3 | 0.032365255 | 0.075268034 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 10 | 79 | 0.052550398 | 0.122210225 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 10 | 87 | 0.057222508 | 0.133075598 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 10 | 90 | 134.2180023 | 312.1348839 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 10 | 91 | 0.001766238 | 0.00410753 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 11 | 1 | 0.042927202 | 0.252512949 | g | mi |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 11 | 3 | 0.006359436 | 0.037408444 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 11 | 79 | 0.042490229 | 0.249942521 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 11 | 87 | 0.047308654 | 0.278286195 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 11 | 90 | 40.39179993 | 237.5988206 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 11 | 91 | 0.000531866 | 0.003128622 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 12 | 1 | 0.042146772 | 0.383152476 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 12 | 3 | 0.010364274 | 0.094220669 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 12 | 79 | 0.04167188 | 0.378835271 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 12 | 87 | 0.046323895 | 0.421126325 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 12 | 90 | 38.83549881 | 353.0499911 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 12 | 91 | 0.000510995 | 0.004645406 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 13 | 1 | 0.041773461 | 0.417734602 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 13 | 3 | 0.008256133 | 0.082561326 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 13 | 79 | 0.04136166 | 0.413616591 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 13 | 87 | 0.04605956 | 0.460595593 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 13 | 90 | 35.51549911 | 355.1549859 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 13 | 91 | 0.000467403 | 0.004674027 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 14 | 1 | 0.043501399 | 0.255890582 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 14 | 3 | 0.008634231 | 0.050789594 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 14 | 79 | 0.042990901 | 0.252887648 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 14 | 87 | 0.047777243 | 0.281042603 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 14 | 90 | 47.43889999 | 279.05235 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 14 | 91 | 0.000624528 | 0.003673694 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 15 | 1 | 0.05215124 | 0.149003547 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 15 | 3 | 0.025916228 | 0.074046367 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 15 | 79 | 0.050832011 | 0.145234319 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 15 | 87 | 0.055599015 | 0.158854332 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 15 | 90 | 118.4570007 | 338.4485793 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 15 | 91 | 0.001559045 | 0.004454416 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 16 | 1 | 0.040147018 | 0.501837732 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 16 | 3 | 0.003846608 | 0.048082599 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 16 | 79 | 0.039912719 | 0.498909002 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 16 | 87 | 0.044652071 | 0.558150898 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 16 | 90 | 21.65609932 | 270.7012475 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 16 | 91 | 0.000285115 | 0.003563935 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 17 | 1 | 0.049667571 | 0.17126749 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 17 | 3 | 0.021678859 | 0.07475469 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 17 | 79 | 0.04856487 | 0.167465073 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 17 | 87 | 0.053314839 | 0.183844276 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 17 | 90 | 98.45189667 | 339.4893086 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 17 | 91 | 0.001295751 | 0.004468108 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 18 | 1 | 0.039968342 | 0.666139041 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 18 | 3 | 0.00581196 | 0.096865994 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 18 | 79 | 0.039703302 | 0.661721716 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 18 | 87 | 0.044370983 | 0.739516396 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 18 | 90 | 21.51029968 | 358.5050027 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 18 | 91 | 0.000283027 | 0.004717112 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 19 | 1 | 0.0549892 | 0.134120001 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 19 | 3 | 0.031305082 | 0.07635386 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 19 | 79 | 0.053405799 | 0.130258047 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 19 | 87 | 0.058168299 | 0.141873902 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 19 | 90 | 140.6419983 | 343.0292671 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 19 | 91 | 0.001851002 | 0.004514638 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 20 | 1 | 0.04320512 | 0.392773817 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 20 | 3 | 0.012130603 | 0.110278211 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 20 | 79 | 0.042621039 | 0.387463992 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 20 | 87 | 0.047260016 | 0.429636513 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 20 | 90 | 44.19729996 | 401.7936382 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 20 | 91 | 0.000581564 | 0.005286949 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 21 | 1 | 0.039889812 | 0.664830223 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 21 | 3 | 0.005539606 | 0.092326774 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 21 | 79 | 0.039635271 | 0.660587862 | g | mi |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 21 | 87 | 0.044307705 | 0.738461767 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 21 | 90 | 20.9116993 | 348.5283294 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 21 | 91 | 0.00027516 | 0.004585997 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 22 | 1 | 0.059064198 | 0.128400429 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 22 | 3 | 0.041024651 | 0.089184023 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 22 | 79 | 0.057029299 | 0.123976736 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 22 | 87 | 0.061685421 | 0.134098738 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 22 | 90 | 167.9839935 | 365.182588 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 22 | 91 | 0.002210679 | 0.004805824 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 23 | 1 | 0.0452899 | 0.411726367 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 23 | 3 | 0.018250532 | 0.165913932 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 23 | 79 | 0.044418611 | 0.403805553 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 23 | 87 | 0.048931587 | 0.444832616 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 23 | 90 | 54.70809937 | 497.3463606 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 23 | 91 | 0.000719761 | 0.006543281 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 24 | 1 | 0.040230863 | 0.670514395 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 24 | 3 | 0.006735591 | 0.112259856 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 24 | 79 | 0.039930832 | 0.665513876 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 24 | 87 | 0.044582468 | 0.743041142 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 24 | 90 | 23.41939926 | 390.3233297 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 24 | 91 | 0.000308126 | 0.005135431 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 25 | 1 | 0.061292902 | 0.120182162 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 25 | 3 | 0.045007683 | 0.088250361 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 25 | 79 | 0.0590549 | 0.115793924 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 25 | 87 | 0.063716017 | 0.124933368 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 25 | 90 | 185.302002 | 363.3372655 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 25 | 91 | 0.002438601 | 0.00478157 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 26 | 1 | 0.060198098 | 0.113581324 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 26 | 3 | 0.040569779 | 0.076546756 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 26 | 79 | 0.058149498 | 0.10971604 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 26 | 87 | 0.062931135 | 0.118737998 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 26 | 90 | 182.1629944 | 343.7037815 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 26 | 91 | 0.002397456 | 0.004523502 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 27 | 1 | 0.041844379 | 0.348703167 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 27 | 3 | 0.00858797 | 0.071566422 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 27 | 79 | 0.04142547 | 0.34521226 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 27 | 87 | 0.046119295 | 0.384327467 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 27 | 90 | 36.45489883 | 303.7908304 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 27 | 91 | 0.000479743 | 0.003997861 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 28 | 1 | 0.062131498 | 0.138069999 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 28 | 3 | 0.051572956 | 0.114606572 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 28 | 79 | 0.059670601 | 0.132601339 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 28 | 87 | 0.064111985 | 0.142471082 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 28 | 90 | 184.7220001 | 410.4933445 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 28 | 91 | 0.002430591 | 0.005401315 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 29 | 1 | 0.060651399 | 0.114436608 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 29 | 3 | 0.041998785 | 0.079242995 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 29 | 79 | 0.0585416 | 0.110455854 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 29 | 87 | 0.063296132 | 0.11942667 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 29 | 90 | 184.9450073 | 348.9528628 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 29 | 91 | 0.002434042 | 0.004592532 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 30 | 1 | 0.0443126 | 0.26066235 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 30 | 3 | 0.014216402 | 0.083625891 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 30 | 79 | 0.043645609 | 0.256738875 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 30 | 87 | 0.048306189 | 0.284154053 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 30 | 90 | 56.07180023 | 329.8341155 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 30 | 91 | 0.000737838 | 0.004340222 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 31 | 1 | 0.073294103 | 0.086228354 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 31 | 3 | 0.062539972 | 0.073576436 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 31 | 79 | 0.070106901 | 0.082478705 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 31 | 87 | 0.074989259 | 0.088222655 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 31 | 90 | 286.8049927 | 337.417629 | g | mi |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 31 | 91 | 0.003774738 | 0.004440869 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 32 | 1 | 0.050459251 | 0.180211609 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 32 | 3 | 0.024745081 | 0.088375288 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 32 | 79 | 0.049229592 | 0.175819971 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 32 | 87 | 0.053904399 | 0.192515711 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 32 | 90 | 101.8470001 | 363.7392846 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 32 | 91 | 0.001340308 | 0.004786815 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 33 | 1 | 0.042973101 | 0.330562329 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 33 | 3 | 0.012044214 | 0.092647801 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 33 | 79 | 0.04242016 | 0.326308935 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 33 | 87 | 0.047068611 | 0.36206625 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 33 | 90 | 45.41930008 | 349.3792442 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 33 | 91 | 0.000597634 | 0.004597183 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 34 | 1 | 0.057175197 | 0.121649355 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 34 | 3 | 0.034536168 | 0.073481209 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 34 | 79 | 0.055413701 | 0.117901491 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 34 | 87 | 0.060211636 | 0.128109864 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 34 | 90 | 158.4360046 | 337.0978831 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 34 | 91 | 0.002085226 | 0.004436651 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 35 | 1 | 0.052088439 | 0.148824115 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 35 | 3 | 0.025704207 | 0.073440592 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 35 | 79 | 0.050776951 | 0.145077005 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 35 | 87 | 0.055547893 | 0.158708269 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 35 | 90 | 117.947998 | 336.9942859 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 35 | 91 | 0.001552354 | 0.004435296 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 36 | 1 | 0.037634403 | 3.763440335 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 36 | 3 | 0.000698049 | 0.069804945 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 36 | 79 | 0.037600111 | 3.760011206 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 36 | 87 | 0.042292938 | 4.229293858 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 36 | 90 | 2.998110056 | 299.8110123 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 36 | 91 | 3.94553E-05 | 0.003945535 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 37 | 1 | 0.055146702 | 0.117333408 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 37 | 3 | 0.033347741 | 0.07095264 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 37 | 79 | 0.0535165 | 0.113864893 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 37 | 87 | 0.058219399 | 0.123871063 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 37 | 90 | 142.2089996 | 302.5723404 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 37 | 91 | 0.001871465 | 0.00398184 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 38 | 1 | 0.050552659 | 0.14443617 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 38 | 3 | 0.024749411 | 0.070712605 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 38 | 79 | 0.049342308 | 0.140978026 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 38 | 87 | 0.054044042 | 0.154411551 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 38 | 90 | 105.7949982 | 302.2714285 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 38 | 91 | 0.001392258 | 0.00397788 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 39 | 1 | 0.043332651 | 0.433326506 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 39 | 3 | 0.008456236 | 0.084562356 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 39 | 79 | 0.042833768 | 0.428337672 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 39 | 87 | 0.047623713 | 0.476237119 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 39 | 90 | 43.74200058 | 437.4199993 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 39 | 91 | 0.00057572 | 0.005757202 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 40 | 1 | 0.043332651 | 0.433326506 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 40 | 3 | 0.008456236 | 0.084562356 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 40 | 79 | 0.042833768 | 0.428337672 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 40 | 87 | 0.047623713 | 0.476237119 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 40 | 90 | 43.74200058 | 437.4199993 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 40 | 91 | 0.00057572 | 0.005757202 | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 41 | 1 | 0.602690101 | NULL | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 41 | 3 | 0.351390392 | NULL | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 41 | 79 | 0.576511085 | NULL | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 41 | 87 | 0.612633884 | NULL | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 41 | 90 | 2821.73999 | NULL | g | mi |
| 2030 | 7 | 5 | 16 | 25 | 25025 | 250250 | 41 | 91 | 0.037159927 | NULL | g | mi |

# Mobile Source Mesoscale Analysis

# L Street Redevelopment

## Mesoscale Analysis

| | 2017 Existing | 2030 No-Build | 2030 Build | 2030 Build-Mit |
|---|---|---|---|---|
| **OXIDES OF NITROGEN (NOx)** | | | | |
| Emissions (kg/d) | 20.7 | 6.5 | 7.3 | 7.0 |
| Project Contribution (kg/d) | | | 0.8 | -0.3 |
| | | | | |
| **VOLATILE ORGANIC COMPOUNDS (VOC)** | | | | |
| Emissions (kg/d) | 31.3 | 19.7 | 22.1 | 21.6 |
| Project Contribution (kg/d) | | | 2.4 | -0.5 |
| | | | | |
| **GREENHOUSE GAS ($CO_2$)** | | | | |
| Emissions (short tons per year) | 14,757 | 12,492 | 14,681 | 13,788 |
| Project Contribution (short tons per year) | | | 2,189 | -892 |
| | | | | |

# L Street Redevelopment

## 2030 Build With Mitigation

| Link No. | Description | Roadway Link Length Speed | Roadway Link Length (miles) | Emission Factor (g/mi) $NO_x$ | Emission Factor (g/mi) VOC | AADT (veh/day) | Seasonally Adjusted ADT (veh/day) | VMT Peak (veh-miles) | VMT Off-Peak (veh-miles) | Peak Period Factor | Peak Traffic Data Period Volume (vehicles) | Peak Traffic Data Average Delay (sec) | Peak Traffic Data Adjusted Delay (veh-sec) | Off-Peak Traffic Data Period Volume (vehicles) | Off-Peak Traffic Data Average Delay (sec) | Off-Peak Traffic Data Adjusted Delay (veh-sec) | Link Emissions $NO_x$ (grams) | Link Emissions VOC (grams) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Summer St (Pumphouse/Drydock) | 30 | 0.1 | 0.08 | 0.46 | 36,044 | 36,044 | 1,861 | 1,744 | 0.52 | 18,607 | 49 | 906,158 | 17,437 | 44 | 764,274 | 286 | 1,643 |
| 2 | Drydock Ave (Summer/Harbor) | 25 | 0.11 | 0.07 | 0.42 | 13,999 | 13,999 | 795 | 745 | 0.52 | 7,226 | 42 | 300,260 | 6,772 | 37 | 253,246 | 111 | 647 |
| 3 | Pappas Way (Summer/W 1st)) | 25 | 0.54 | 0.07 | 0.12 | 7,908 | 7,908 | 2,204 | 2,066 | 0.52 | 4,082 | 258 | 1,051,615 | 3,826 | 232 | 886,955 | 320 | 499 |
| 4 | Summer St (Drydock/Freight Road) | 30 | 0.29 | 0.07 | 0.18 | 32,229 | 32,229 | 4,825 | 4,522 | 0.52 | 16,637 | 87 | 1,444,125 | 15,591 | 78 | 1,218,007 | 687 | 1,681 |
| 5 | Fedex Drwy (Summer) | 25 | 0.02 | 0.09 | 2.14 | 652 | 652 | 7 | 6 | 0.52 | 337 | 17 | 5,773 | 315 | 15 | 4,869 | 1 | 28 |
| 6 | Freight Road (Summer) | 25 | 0.21 | 0.08 | 0.24 | 430 | 430 | 47 | 44 | 0.52 | 222 | 17 | 3,819 | 208 | 15 | 3,221 | 7 | 22 |
| 7 | Summer St (Freight/Elkins) | 30 | 0.13 | 0.07 | 0.36 | 31,549 | 31,549 | 2,117 | 1,984 | 0.52 | 16,286 | 31 | 499,180 | 15,263 | 28 | 421,019 | 286 | 1,464 |
| 8 | Elkins/K St (Summer/E 1st) | 25 | 0.17 | 0.08 | 0.29 | 1,179 | 1,179 | 103 | 97 | 0.52 | 609 | 36 | 21,794 | 571 | 32 | 18,382 | 15 | 57 |
| 9 | Summer St(Elkins/E 1st) | 30 | 0.07 | 0.07 | 0.63 | 29,218 | 29,218 | 1,056 | 989 | 0.52 | 15,083 | 18 | 275,269 | 14,135 | 16 | 232,168 | 149 | 1,297 |
| 10 | E 1st St (M/Farragut) | 30 | 0.43 | 0.08 | 0.13 | 8,851 | 8,851 | 1,965 | 1,841 | 0.52 | 4,569 | 0 | 0 | 4,282 | 0 | 0 | 286 | 507 |
| 11 | M St (E 1st/Broadway) | 25 | 0.17 | 0.04 | 0.28 | 791 | 791 | 69 | 65 | 0.52 | 408 | 13 | 5,246 | 383 | 12 | 4,424 | 5 | 37 |
| 12 | E 1st St (Summer/M) | 30 | 0.11 | 0.09 | 0.42 | 9,767 | 9,767 | 555 | 520 | 0.52 | 5,042 | 28 | 138,909 | 4,725 | 25 | 117,159 | 101 | 452 |
| 13 | E 1st St (K/Summer) | 25 | 0.1 | 0.08 | 0.46 | 6,479 | 6,479 | 334 | 313 | 0.52 | 3,345 | 103 | 344,501 | 3,134 | 93 | 290,559 | 53 | 298 |
| 14 | K St (E 1st/Broadway) | 25 | 0.17 | 0.05 | 0.28 | 1,041 | 1,041 | 91 | 86 | 0.52 | 537 | 8 | 4,217 | 503 | 7 | 3,556 | 9 | 50 |
| 15 | E 1st St (K/Pappas) | 25 | 0.35 | 0.07 | 0.16 | 7,298 | 7,298 | 1,319 | 1,236 | 0.52 | 3,767 | 1 | 3,391 | 3,530 | 1 | 2,860 | 189 | 406 |
| 16 | W 1st St (Pappas/Dorchester) | 25 | 0.08 | 0.05 | 0.56 | 10,225 | 10,225 | 422 | 396 | 0.52 | 5,278 | 0 | 2,111 | 4,947 | 0 | 1,781 | 39 | 457 |
| 17 | W 1st St (D/Papps) | 25 | 0.29 | 0.07 | 0.18 | 1,332 | 1,332 | 199 | 187 | 0.52 | 688 | 12 | 8,423 | 644 | 11 | 7,104 | 29 | 71 |
| 18 | L St (E 1st/E 2nd) | 30 | 0.06 | 0.10 | 0.74 | 22,295 | 22,295 | 691 | 647 | 0.52 | 11,509 | 12 | 134,084 | 10,786 | 10 | 113,090 | 130 | 989 |
| 19 | E 2nd St (Dorchester/L) | 25 | 0.41 | 0.08 | 0.14 | 971 | 971 | 206 | 193 | 0.52 | 501 | 13 | 6,317 | 470 | 11 | 5,328 | 30 | 56 |
| 20 | E 2nd St (L/M) | 25 | 0.11 | 0.11 | 0.43 | 735 | 735 | 42 | 39 | 0.52 | 380 | 11 | 4,213 | 356 | 10 | 3,554 | 9 | 35 |
| 21 | L St (E 2nd/E 3rd) | 30 | 0.06 | 0.09 | 0.74 | 22,281 | 22,281 | 690 | 647 | 0.52 | 11,502 | 1 | 15,528 | 10,779 | 1 | 13,097 | 123 | 987 |
| 22 | E 3rd St (Dorchester/L) | 25 | 0.46 | 0.09 | 0.13 | 1,263 | 1,263 | 300 | 281 | 0.52 | 652 | 15 | 9,776 | 611 | 14 | 8,245 | 52 | 78 |
| 23 | E 3rd St (L/M) | 25 | 0.11 | 0.17 | 0.44 | 902 | 902 | 51 | 48 | 0.52 | 466 | 9 | 4,306 | 436 | 8 | 3,632 | 16 | 44 |
| 24 | L St (E 3rd/E Broadway) | 30 | 0.06 | 0.11 | 0.74 | 21,629 | 21,629 | 670 | 628 | 0.52 | 11,166 | 28 | 315,428 | 10,464 | 25 | 266,039 | 146 | 964 |
| 25 | E Broadway (Dorchester/L) | 25 | 0.51 | 0.09 | 0.12 | 9,573 | 9,573 | 2,520 | 2,362 | 0.52 | 4,942 | 38 | 188,530 | 4,631 | 34 | 159,010 | 431 | 610 |
| 26 | E Broadway (L/Farragut) | 25 | 0.53 | 0.08 | 0.12 | 6,271 | 6,271 | 1,716 | 1,608 | 0.52 | 3,237 | 66 | 214,952 | 3,034 | 60 | 181,296 | 254 | 395 |
| 27 | L St (E Broadway/E 5th) | 30 | 0.12 | 0.07 | 0.38 | 18,064 | 18,064 | 1,119 | 1,049 | 0.52 | 9,325 | 35 | 325,441 | 8,739 | 31 | 274,484 | 155 | 833 |
| 28 | E 5th St (G/L) | 25 | 0.45 | 0.11 | 0.14 | 1,318 | 1,318 | 306 | 287 | 0.52 | 680 | 20 | 13,710 | 638 | 18 | 11,563 | 68 | 85 |
| 29 | E 5th St (L/Farragut) | 25 | 0.53 | 0.08 | 0.12 | 1,776 | 1,776 | 486 | 455 | 0.52 | 917 | 23 | 20,810 | 859 | 20 | 17,552 | 75 | 112 |
| 30 | L St (E 5th/E 8th) | 30 | 0.17 | 0.08 | 0.28 | 16,482 | 16,482 | 1,446 | 1,356 | 0.52 | 8,508 | 26 | 218,243 | 7,974 | 23 | 184,071 | 234 | 796 |
| 31 | E 8th St (Dorchester/L) | 25 | 0.85 | 0.07 | 0.09 | 1,720 | 1,720 | 755 | 707 | 0.52 | 888 | 12 | 10,479 | 832 | 11 | 8,839 | 108 | 129 |
| 32 | E 8th St (L/Day) | 25 | 0.28 | 0.09 | 0.19 | 1,332 | 1,332 | 193 | 180 | 0.52 | 688 | 11 | 7,666 | 644 | 10 | 6,466 | 33 | 72 |
| 33 | L St (E 8th/Columbia) | 30 | 0.13 | 0.09 | 0.36 | 14,998 | 14,998 | 1,006 | 943 | 0.52 | 7,742 | 6 | 46,840 | 7,255 | 5 | 39,506 | 181 | 706 |
| 34 | Columbia Rd (G/L) | 25 | 0.47 | 0.07 | 0.13 | 721 | 721 | 175 | 164 | 0.52 | 372 | 15 | 5,419 | 349 | 13 | 4,570 | 25 | 43 |
| 35 | Columbia Rd (L/O) | 25 | 0.35 | 0.07 | 0.16 | 652 | 652 | 118 | 110 | 0.52 | 337 | 10 | 3,450 | 315 | 9 | 2,910 | 17 | 36 |
| 36 | L St (Columbia/Day) | 30 | 0.01 | 0.07 | 4.23 | 14,248 | 14,248 | 74 | 69 | 0.52 | 7,355 | 0 | 368 | 6,893 | 0 | 310 | 10 | 603 |
| 37 | Day Blvd (G/L) | 30 | 0.47 | 0.07 | 0.12 | 24,765 | 24,765 | 6,009 | 5,631 | 0.52 | 12,784 | 2 | 28,764 | 11,981 | 2 | 24,261 | 826 | 1,442 |
| 38 | Day Blvd (L/O) | 30 | 0.35 | 0.07 | 0.15 | 11,252 | 11,252 | 2,033 | 1,905 | 0.52 | 5,808 | 1 | 6,099 | 5,443 | 1 | 5,144 | 278 | 608 |
| 39 | Elkin Drwy (Summer) [BD] | 15 | 0.1 | 0.08 | 0.48 | 5,314 | 5,314 | 274 | 257 | 0.52 | 2,743 | 50 | 138,113 | 2,571 | 45 | 116,487 | 45 | 253 |
| 40 | M St Drwy (E 1st) [BD] | 15 | 0.1 | 0.08 | 0.48 | 777 | 777 | 40 | 38 | 0.52 | 401 | 6 | 2,266 | 376 | 5 | 1,911 | 7 | 37 |
| | | | | | | | VMT (per day) | 38,888 | 36,444 | | | | | | | | 5.8 | 19.5 |
| | | | | | | | VMT (per year) | 14,194,255 | 13,301,940.4 | | | Arterial | 6,735,593 | | | 5,680,947 | Daily Total (kg) | |
| | | | | | | | | | | | | | | | | | $NO_x$ | VOC |

| | |
|---|---|
| **VMT Total (per year)** | **27,496,195.18** |

| | NOx EF (g/s) | NOx Idle (g/day) | NOx Idle (kg/day) | VOC EF (g/s) | VOC Idle (g/day) | VOC Idle (kg/day) |
|---|---|---|---|---|---|---|
| Peak Period | 0.0001 | 657 | **0.66** | 0.0002 | 1,146 | **1.15** |
| Off-Peak Period | 0.0001 | 555 | **0.55** | 0.0002 | 967 | **0.97** |
| Total (Including Link) | | | **7.04** | | | **21.64** |

# L Street Redevelopment

**2030 Build**

| Link No. | Description | Roadway Link Length Speed | Roadway Link Length (miles) | Emission Factor (g/mi) $NO_x$ | Emission Factor (g/mi) VOC | AADT (veh/day) | Seasonally Adjusted ADT (veh/day) | VMT Peak (veh-miles) | VMT Off-Peak (veh-miles) | Peak Period Factor | Peak Traffic Data Period Volume (vehicles) | Peak Traffic Data Average Delay (sec) | Peak Traffic Data Adjusted Delay (veh-sec) | Off-Peak Traffic Data Period Volume (vehicles) | Off-Peak Traffic Data Average Delay (sec) | Off-Peak Traffic Data Adjusted Delay (veh-sec) | Link Emissions $NO_x$ (grams) | Link Emissions VOC (grams) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Summer St (Pumphouse/Drydock) | 30 | 0.1 | 0.08 | 0.46 | 36,044 | 36,044 | 1,861 | 1,744 | 0.52 | 18,607 | 49 | 906,158 | 17,437 | 44 | 764,274 | 286 | 1,643 |
| 2 | Drydock Ave (Summer/Harbor) | 25 | 0.11 | 0.07 | 0.42 | 13,999 | 13,999 | 795 | 745 | 0.52 | 7,226 | 42 | 300,260 | 6,772 | 37 | 253,246 | 111 | 647 |
| 3 | Pappas Way (Summer/W 1st)) | 25 | 0.54 | 0.07 | 0.12 | 7,908 | 7,908 | 2,204 | 2,066 | 0.52 | 4,082 | 258 | 1,051,615 | 3,826 | 232 | 886,955 | 320 | 499 |
| 4 | Summer St (Drydock/Freight Road) | 30 | 0.29 | 0.07 | 0.18 | 32,229 | 32,229 | 4,825 | 4,522 | 0.52 | 16,637 | 87 | 1,444,125 | 15,591 | 78 | 1,218,007 | 687 | 1,681 |
| 5 | Fedex Drwy (Summer) | 25 | 0.02 | 0.09 | 2.14 | 652 | 652 | 7 | 6 | 0.52 | 337 | 17 | 5,773 | 315 | 15 | 4,869 | 1 | 28 |
| 6 | Freight Road (Summer) | 25 | 0.21 | 0.08 | 0.24 | 430 | 430 | 47 | 44 | 0.52 | 222 | 17 | 3,819 | 208 | 15 | 3,221 | 7 | 22 |
| 7 | Summer St (Freight/Elkins) | 30 | 0.13 | 0.07 | 0.36 | 31,549 | 31,549 | 2,117 | 1,984 | 0.52 | 16,286 | 3 | 56,188 | 15,263 | 3 | 47,390 | 286 | 1,464 |
| 8 | Elkins/K St (Summer/E 1st) | 25 | 0.17 | 0.08 | 0.29 | 1,179 | 1,179 | 103 | 97 | 0.52 | 609 | 32 | 19,542 | 571 | 29 | 16,482 | 15 | 57 |
| 9 | Summer St(Elkins/E 1st) | 30 | 0.07 | 0.07 | 0.63 | 29,218 | 29,218 | 1,056 | 989 | 0.52 | 15,083 | 86 | 1,294,141 | 14,135 | 77 | 1,091,507 | 149 | 1,297 |
| 10 | E 1st St (M/Farragut) | 30 | 0.43 | 0.08 | 0.13 | 8,851 | 8,851 | 1,965 | 1,841 | 0.52 | 4,569 | 0 | 0 | 4,282 | 0 | 0 | 286 | 507 |
| 11 | M St (E 1st/Broadway) | 25 | 0.17 | 0.04 | 0.28 | 791 | 791 | 69 | 65 | 0.52 | 408 | 13 | 5,246 | 383 | 12 | 4,424 | 5 | 37 |
| 12 | E 1st St (Summer/M) | 30 | 0.11 | 0.09 | 0.42 | 9,767 | 9,767 | 555 | 520 | 0.52 | 5,042 | 42 | 210,002 | 4,725 | 37 | 177,120 | 101 | 452 |
| 13 | E 1st St (K/Summer) | 25 | 0.1 | 0.08 | 0.46 | 6,479 | 6,479 | 334 | 313 | 0.52 | 3,345 | 118 | 394,671 | 3,134 | 106 | 332,874 | 53 | 298 |
| 14 | K St (E 1st/Broadway) | 25 | 0.17 | 0.05 | 0.28 | 1,041 | 1,041 | 91 | 86 | 0.52 | 537 | 8 | 4,217 | 503 | 7 | 3,556 | 9 | 50 |
| 15 | E 1st St (K/Pappas) | 25 | 0.35 | 0.07 | 0.16 | 7,298 | 7,298 | 1,319 | 1,236 | 0.52 | 3,767 | 1 | 3,391 | 3,530 | 1 | 2,860 | 189 | 406 |
| 16 | W 1st St (Pappas/Dorchester) | 25 | 0.08 | 0.05 | 0.56 | 10,225 | 10,225 | 422 | 396 | 0.52 | 5,278 | 0 | 2,111 | 4,947 | 0 | 1,781 | 39 | 457 |
| 17 | W 1st St (D/Papps) | 25 | 0.29 | 0.07 | 0.18 | 1,332 | 1,332 | 199 | 187 | 0.52 | 688 | 12 | 8,423 | 644 | 11 | 7,104 | 29 | 71 |
| 18 | L St (E 1st/E 2nd) | 30 | 0.06 | 0.10 | 0.74 | 22,295 | 22,295 | 691 | 647 | 0.52 | 11,509 | 12 | 135,235 | 10,786 | 11 | 114,060 | 130 | 989 |
| 19 | E 2nd St (Dorchester/L) | 25 | 0.41 | 0.08 | 0.14 | 971 | 971 | 206 | 193 | 0.52 | 501 | 13 | 6,317 | 470 | 11 | 5,328 | 30 | 56 |
| 20 | E 2nd St (L/M) | 25 | 0.11 | 0.11 | 0.43 | 735 | 735 | 42 | 39 | 0.52 | 380 | 11 | 4,213 | 356 | 10 | 3,554 | 9 | 35 |
| 21 | L St (E 2nd/E 3rd) | 30 | 0.06 | 0.09 | 0.74 | 22,281 | 22,281 | 690 | 647 | 0.52 | 11,502 | 1 | 15,528 | 10,779 | 1 | 13,097 | 123 | 987 |
| 22 | E 3rd St (Dorchester/L) | 25 | 0.46 | 0.09 | 0.13 | 1,263 | 1,263 | 300 | 281 | 0.52 | 652 | 15 | 9,776 | 611 | 14 | 8,245 | 52 | 78 |
| 23 | E 3rd St (L/M) | 25 | 0.11 | 0.17 | 0.44 | 902 | 902 | 51 | 48 | 0.52 | 466 | 9 | 4,306 | 436 | 8 | 3,632 | 16 | 44 |
| 24 | L St (E 3rd/E Broadway) | 30 | 0.06 | 0.11 | 0.74 | 21,629 | 21,629 | 670 | 628 | 0.52 | 11,166 | 125 | 1,395,142 | 10,464 | 112 | 1,176,693 | 146 | 964 |
| 25 | E Broadway (Dorchester/L) | 25 | 0.51 | 0.09 | 0.12 | 9,573 | 9,573 | 2,520 | 2,362 | 0.52 | 4,942 | 24 | 119,592 | 4,631 | 22 | 100,866 | 431 | 610 |
| 26 | E Broadway (L/Farragut) | 25 | 0.53 | 0.08 | 0.12 | 6,271 | 6,271 | 1,716 | 1,608 | 0.52 | 3,237 | 31 | 101,811 | 3,034 | 28 | 85,870 | 254 | 395 |
| 27 | L St (E Broadway/E 5th) | 30 | 0.12 | 0.07 | 0.38 | 18,064 | 18,064 | 1,119 | 1,049 | 0.52 | 9,325 | 41 | 380,458 | 8,739 | 37 | 320,887 | 155 | 833 |
| 28 | E 5th St (G/L) | 25 | 0.45 | 0.11 | 0.14 | 1,318 | 1,318 | 306 | 287 | 0.52 | 680 | 20 | 13,710 | 638 | 18 | 11,563 | 68 | 85 |
| 29 | E 5th St (L/Farragut) | 25 | 0.53 | 0.08 | 0.12 | 1,776 | 1,776 | 486 | 455 | 0.52 | 917 | 23 | 20,810 | 859 | 20 | 17,552 | 75 | 112 |
| 30 | L St (E 5th/E 8th) | 30 | 0.17 | 0.08 | 0.28 | 16,482 | 16,482 | 1,446 | 1,356 | 0.52 | 8,508 | 26 | 218,243 | 7,974 | 23 | 184,071 | 234 | 796 |
| 31 | E 8th St (Dorchester/L) | 25 | 0.85 | 0.07 | 0.09 | 1,720 | 1,720 | 755 | 707 | 0.52 | 888 | 12 | 10,479 | 832 | 11 | 8,839 | 108 | 129 |
| 32 | E 8th St (L/Day) | 25 | 0.28 | 0.09 | 0.19 | 1,332 | 1,332 | 193 | 180 | 0.52 | 688 | 11 | 7,666 | 644 | 10 | 6,466 | 33 | 72 |
| 33 | L St (E 8th/Columbia) | 30 | 0.13 | 0.09 | 0.36 | 14,998 | 14,998 | 1,006 | 943 | 0.52 | 7,742 | 6 | 46,840 | 7,255 | 5 | 39,506 | 181 | 706 |
| 34 | Columbia Rd (G/L) | 25 | 0.47 | 0.07 | 0.13 | 721 | 721 | 175 | 164 | 0.52 | 372 | 15 | 5,419 | 349 | 13 | 4,570 | 25 | 43 |
| 35 | Columbia Rd (L/O) | 25 | 0.35 | 0.07 | 0.16 | 652 | 652 | 118 | 110 | 0.52 | 337 | 10 | 3,450 | 315 | 9 | 2,910 | 17 | 36 |
| 36 | L St (Columbia/Day) | 30 | 0.01 | 0.07 | 4.23 | 14,248 | 14,248 | 74 | 69 | 0.52 | 7,355 | 0 | 368 | 6,893 | 0 | 310 | 10 | 603 |
| 37 | Day Blvd (G/L) | 30 | 0.47 | 0.07 | 0.12 | 24,765 | 24,765 | 6,009 | 5,631 | 0.52 | 12,784 | 2 | 28,764 | 11,981 | 2 | 24,261 | 826 | 1,442 |
| 38 | Day Blvd (L/O) | 30 | 0.35 | 0.07 | 0.15 | 11,252 | 11,252 | 2,033 | 1,905 | 0.52 | 5,808 | 1 | 6,099 | 5,443 | 1 | 5,144 | 278 | 608 |
| 39 | Elkin Drwy (Summer) [BD] | 15 | 0.1 | 0.08 | 0.48 | 5,314 | 5,314 | 274 | 257 | 0.52 | 2,743 | 9 | 24,002 | 2,571 | 8 | 20,244 | 45 | 253 |
| 40 | M St Drwy (E 1st) [BD] | 15 | 0.1 | 0.08 | 0.48 | 777 | 777 | 40 | 38 | 0.52 | 401 | 6 | 2,266 | 376 | 5 | 1,911 | 7 | 37 |
| | | | | | | | VMT (per day) | 38,888 | 36,444 | | | | | | | | 5.8 | 19.5 |
| | | | | | | | VMT (per year) | 14,194,255 | 13,301,940.4 | | | Arterial | 8,270,175 | | | 6,975,247 | **Daily Total (kg)** | |
| | | | | | | | | | | | | | | | | | **$NO_X$** | **VOC** |

| | |
|---|---|
| **VMT Total (per year)** | **27,496,195.18** |

| | NOx EF (g/s) | NOx Idle (g/day) | NOx Idle (kg/day) | VOC EF (g/s) | VOC Idle (g/day) | VOC Idle (kg/day) |
|---|---|---|---|---|---|---|
| Peak Period | 0.0001 | 807 | **0.81** | 0.0002 | 1,407 | **1.41** |
| Off-Peak Period | 0.0001 | 681 | **0.68** | 0.0002 | 1,187 | **1.19** |
| Total (Including Link) | | | **7.32** | | | **22.12** |

# L Street Redevelopment

## 2030 No Build

| Link No. | Description | Roadway Link Length Speed | Roadway Link Length (miles) | Emission Factor (g/mi) $NO_x$ | Emission Factor (g/mi) VOC | AADT (veh/day) | Seasonally Adjusted ADT (veh/day) | VMT Peak (veh-miles) | VMT Off-Peak (veh-miles) | Peak Period Factor | Peak Traffic Data Period Volume (vehicles) | Peak Traffic Data Average Delay (sec) | Peak Traffic Data Adjusted Delay (veh-sec) | Off-Peak Traffic Data Period Volume (vehicles) | Off-Peak Traffic Data Average Delay (sec) | Off-Peak Traffic Data Adjusted Delay (veh-sec) | Link Emissions $NO_x$ (grams) | Link Emissions VOC (grams) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Summer St (Pumphouse/Drydock) | 30 | 0.1 | 0.08 | 0.46 | 32,465 | 32,465 | 1,676 | 1,571 | 0.52 | 16,759 | 33 | 546,348 | 15,706 | 29 | 460,802 | 257 | 1,480 |
| 2 | Drydock Ave (Summer/Harbor) | 25 | 0.11 | 0.07 | 0.42 | 13,999 | 13,999 | 795 | 745 | 0.52 | 7,226 | 42 | 300,260 | 6,772 | 37 | 253,246 | 111 | 647 |
| 3 | Pappas Way (Summer/W 1st)) | 25 | 0.54 | 0.07 | 0.12 | 7,908 | 7,908 | 2,204 | 2,066 | 0.52 | 4,082 | 211 | 861,989 | 3,826 | 190 | 727,021 | 320 | 499 |
| 4 | Summer St (Drydock/Freight Road) | 30 | 0.29 | 0.07 | 0.18 | 28,649 | 28,649 | 4,289 | 4,019 | 0.52 | 14,790 | 47 | 697,329 | 13,860 | 42 | 588,143 | 611 | 1,494 |
| 5 | Fedex Drwy (Summer) | 25 | 0.02 | 0.09 | 2.14 | 652 | 652 | 7 | 6 | 0.52 | 337 | 17 | 5,773 | 315 | 15 | 4,869 | 1 | 28 |
| 6 | Freight Road (Summer) | 25 | 0.21 | 0.08 | 0.24 | 430 | 430 | 47 | 44 | 0.52 | 222 | 17 | 3,819 | 208 | 15 | 3,221 | 7 | 22 |
| 7 | Summer St (Freight/Elkins) | 30 | 0.13 | 0.07 | 0.36 | 27,970 | 27,970 | 1,877 | 1,759 | 0.52 | 14,439 | 2 | 33,209 | 13,531 | 2 | 28,009 | 254 | 1,298 |
| 8 | Elkins/K St (Summer/E 1st) | 25 | 0.17 | 0.08 | 0.29 | 1,179 | 1,179 | 103 | 97 | 0.52 | 609 | 18 | 10,897 | 571 | 16 | 9,191 | 15 | 57 |
| 9 | Summer St(Elkins/E 1st) | 30 | 0.07 | 0.07 | 0.63 | 27,595 | 27,595 | 997 | 934 | 0.52 | 14,245 | 65 | 929,504 | 13,350 | 59 | 783,964 | 141 | 1,225 |
| 10 | E 1st St (M/Farragut) | 30 | 0.43 | 0.08 | 0.13 | 8,851 | 8,851 | 1,965 | 1,841 | 0.52 | 4,569 | 0 | 0 | 4,282 | 0 | 0 | 286 | 507 |
| 11 | M St (E 1st/Broadway) | 25 | 0.17 | 0.04 | 0.28 | 805 | 805 | 71 | 66 | 0.52 | 415 | 9 | 3,884 | 389 | 8 | 3,276 | 5 | 38 |
| 12 | E 1st St (Summer/M) | 30 | 0.11 | 0.09 | 0.42 | 9,004 | 9,004 | 511 | 479 | 0.52 | 4,648 | 21 | 97,146 | 4,356 | 19 | 81,935 | 93 | 417 |
| 13 | E 1st St (K/Summer) | 25 | 0.1 | 0.08 | 0.46 | 5,758 | 5,758 | 297 | 279 | 0.52 | 2,972 | 64 | 189,629 | 2,785 | 57 | 159,937 | 48 | 265 |
| 14 | K St (E 1st/Broadway) | 25 | 0.17 | 0.05 | 0.28 | 1,041 | 1,041 | 91 | 86 | 0.52 | 537 | 7 | 3,948 | 503 | 7 | 3,330 | 9 | 50 |
| 15 | E 1st St (K/Pappas) | 25 | 0.35 | 0.07 | 0.16 | 6,576 | 6,576 | 1,188 | 1,113 | 0.52 | 3,395 | 1 | 3,395 | 3,181 | 1 | 2,863 | 170 | 366 |
| 16 | W 1st St (Pappas/Dorchester) | 25 | 0.08 | 0.05 | 0.56 | 9,642 | 9,642 | 398 | 373 | 0.52 | 4,978 | 0 | 1,991 | 4,665 | 0 | 1,679 | 37 | 431 |
| 17 | W 1st St (D/Papps) | 25 | 0.29 | 0.07 | 0.18 | 1,193 | 1,193 | 179 | 167 | 0.52 | 616 | 12 | 7,083 | 577 | 10 | 5,974 | 26 | 64 |
| 18 | L St (E 1st/E 2nd) | 30 | 0.06 | 0.10 | 0.74 | 20,616 | 20,616 | 639 | 598 | 0.52 | 10,643 | 11 | 114,410 | 9,974 | 10 | 96,496 | 120 | 915 |
| 19 | E 2nd St (Dorchester/L) | 25 | 0.41 | 0.08 | 0.14 | 971 | 971 | 206 | 193 | 0.52 | 501 | 11 | 5,490 | 470 | 10 | 4,630 | 30 | 56 |
| 20 | E 2nd St (L/M) | 25 | 0.11 | 0.11 | 0.43 | 735 | 735 | 42 | 39 | 0.52 | 380 | 10 | 3,739 | 356 | 9 | 3,154 | 9 | 35 |
| 21 | L St (E 2nd/E 3rd) | 30 | 0.06 | 0.09 | 0.74 | 20,603 | 20,603 | 638 | 598 | 0.52 | 10,636 | 1 | 11,699 | 9,967 | 1 | 9,867 | 114 | 913 |
| 22 | E 3rd St (Dorchester/L) | 25 | 0.46 | 0.09 | 0.13 | 1,263 | 1,263 | 300 | 281 | 0.52 | 652 | 13 | 8,245 | 611 | 11 | 6,954 | 52 | 78 |
| 23 | E 3rd St (L/M) | 25 | 0.11 | 0.17 | 0.44 | 902 | 902 | 51 | 48 | 0.52 | 466 | 8 | 3,910 | 436 | 8 | 3,298 | 16 | 44 |
| 24 | L St (E 3rd/E Broadway) | 30 | 0.06 | 0.11 | 0.74 | 19,951 | 19,951 | 618 | 579 | 0.52 | 10,299 | 96 | 985,099 | 9,652 | 86 | 830,854 | 134 | 889 |
| 25 | E Broadway (Dorchester/L) | 25 | 0.51 | 0.09 | 0.12 | 9,573 | 9,573 | 2,520 | 2,362 | 0.52 | 4,942 | 24 | 119,592 | 4,631 | 22 | 100,866 | 431 | 610 |
| 26 | E Broadway (L/Farragut) | 25 | 0.53 | 0.08 | 0.12 | 6,410 | 6,410 | 1,754 | 1,643 | 0.52 | 3,309 | 31 | 104,064 | 3,101 | 28 | 87,769 | 260 | 403 |
| 27 | L St (E Broadway/E 5th) | 30 | 0.12 | 0.07 | 0.38 | 16,385 | 16,385 | 1,015 | 951 | 0.52 | 8,458 | 33 | 276,588 | 7,927 | 29 | 233,281 | 141 | 756 |
| 28 | E 5th St (G/L) | 25 | 0.45 | 0.11 | 0.14 | 1,318 | 1,318 | 306 | 287 | 0.52 | 680 | 20 | 13,710 | 638 | 18 | 11,563 | 68 | 85 |
| 29 | E 5th St (L/Farragut) | 25 | 0.53 | 0.08 | 0.12 | 1,776 | 1,776 | 486 | 455 | 0.52 | 917 | 23 | 20,810 | 859 | 20 | 17,552 | 75 | 112 |
| 30 | L St (E 5th/E 8th) | 30 | 0.17 | 0.08 | 0.28 | 14,803 | 14,803 | 1,299 | 1,217 | 0.52 | 7,642 | 21 | 157,041 | 7,161 | 18 | 132,452 | 210 | 715 |
| 31 | E 8th St (Dorchester/L) | 25 | 0.85 | 0.07 | 0.09 | 1,720 | 1,720 | 755 | 707 | 0.52 | 888 | 12 | 10,479 | 832 | 11 | 8,839 | 108 | 129 |
| 32 | E 8th St (L/Day) | 25 | 0.28 | 0.09 | 0.19 | 1,332 | 1,332 | 193 | 180 | 0.52 | 688 | 11 | 7,666 | 644 | 10 | 6,466 | 33 | 72 |
| 33 | L St (E 8th/Columbia) | 30 | 0.13 | 0.09 | 0.36 | 13,319 | 13,319 | 894 | 838 | 0.52 | 6,876 | 5 | 37,472 | 6,443 | 5 | 31,604 | 160 | 627 |
| 34 | Columbia Rd (G/L) | 25 | 0.47 | 0.07 | 0.13 | 721 | 721 | 175 | 164 | 0.52 | 372 | 12 | 4,339 | 349 | 10 | 3,659 | 25 | 43 |
| 35 | Columbia Rd (L/O) | 25 | 0.35 | 0.07 | 0.16 | 652 | 652 | 118 | 110 | 0.52 | 337 | 9 | 2,945 | 315 | 8 | 2,484 | 17 | 36 |
| 36 | L St (Columbia/Day) | 30 | 0.01 | 0.07 | 4.23 | 12,570 | 12,570 | 65 | 61 | 0.52 | 6,489 | 0 | 324 | 6,081 | 0 | 274 | 9 | 532 |
| 37 | Day Blvd (G/L) | 30 | 0.47 | 0.07 | 0.12 | 23,086 | 23,086 | 5,601 | 5,249 | 0.52 | 11,918 | 2 | 24,431 | 11,168 | 2 | 20,606 | 770 | 1,344 |
| 38 | Day Blvd (L/O) | 30 | 0.35 | 0.07 | 0.15 | 11,252 | 11,252 | 2,033 | 1,905 | 0.52 | 5,808 | 1 | 6,099 | 5,443 | 1 | 5,144 | 278 | 608 |
| 39 | Elkin Drwy (Summer) [BD] | 15 | 0.1 | 0.08 | 0.48 | 0 | 0 | 0 | 0 | 0.52 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 40 | M St Drwy (E 1st) [BD] | 15 | 0.1 | 0.08 | 0.48 | 0 | 0 | 0 | 0 | 0.52 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | | | VMT (per day) | 36,402 | 34,114 | | | | | | | | 5.5 | 17.9 |
| | | | | | | | VMT (per year) | 13,286,704 | 12,451,442.3 | | | Arterial | 5,614,356 | | | 4,735,271 | Daily Total (kg) | |
| | | | | | | | | | | | | | | | | | $NO_X$ | VOC |

| VMT Total (per year) | 25,738,146.25 |
|---|---|

| | NOx EF (g/s) | NOx Idle (g/day) | NOx Idle (kg/day) | VOC EF (g/s) | VOC Idle (g/day) | VOC Idle (kg/day) |
|---|---|---|---|---|---|---|
| Peak Period | 0.0001 | 548 | **0.55** | 0.0002 | 955 | **0.96** |
| Off-Peak Period | 0.0001 | 462 | **0.46** | 0.0002 | 806 | **0.81** |
| Total (Including Link) | | | **6.46** | | | **19.65** |

**L Street Redevelopment**

**2017 Existing**

| Link No. | Description | Roadway Link Length Type | Roadway Link Length (miles) | Emission Factor (g/mi) $NO_x$ | Emission Factor (g/mi) VOC | AADT (veh/day) | Seasonally Adjusted ADT (veh/day) | VMT Peak (veh-miles) | VMT Off-Peak (veh-miles) | Peak Period Factor | Peak Traffic Data Period Volume (vehicles) | Peak Traffic Data Average Delay (sec) | Peak Traffic Data Adjusted Delay (veh-sec) | Off-Peak Traffic Data Period Volume (vehicles) | Off-Peak Traffic Data Average Delay (sec) | Off-Peak Traffic Data Adjusted Delay (veh-sec) | Link Emissions $NO_x$ (grams) | Link Emissions VOC (grams) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Summer St (Pumphouse/Drydock) | 30 | 0.1 | 0.27 | 0.82 | 29,066 | 29,066 | 1,500 | 1,406 | 0.52 | 15,004 | 24 | 360,107 | 14,061 | 22 | 303,722 | 799 | 2,386 |
| 2 | Drydock Ave (Summer/Harbor) | 25 | 0.11 | 0.26 | 0.76 | 10,544 | 10,544 | 599 | 561 | 0.52 | 5,443 | 18 | 99,882 | 5,101 | 17 | 84,242 | 306 | 880 |
| 3 | Pappas Way (Summer/W 1st)) | 25 | 0.54 | 0.27 | 0.22 | 7,006 | 7,006 | 1,953 | 1,830 | 0.52 | 3,617 | 119 | 430,040 | 3,389 | 107 | 362,705 | 1,028 | 831 |
| 4 | Summer St (Drydock/Freight Road) | 30 | 0.29 | 0.26 | 0.33 | 25,736 | 25,736 | 3,853 | 3,611 | 0.52 | 13,286 | 33 | 435,766 | 12,450 | 30 | 367,535 | 1,922 | 2,463 |
| 5 | Fedex Drwy (Summer) | 25 | 0.02 | 0.30 | 3.82 | 277 | 277 | 3 | 3 | 0.52 | 143 | 17 | 2,414 | 134 | 15 | 2,036 | 2 | 21 |
| 6 | Freight Road (Summer) | 25 | 0.21 | 0.28 | 0.44 | 416 | 416 | 45 | 42 | 0.52 | 215 | 16 | 3,524 | 201 | 15 | 2,972 | 24 | 38 |
| 7 | Summer St (Freight/Elkins) | 30 | 0.13 | 0.25 | 0.65 | 25,250 | 25,250 | 1,695 | 1,588 | 0.52 | 13,035 | 2 | 30,632 | 12,215 | 2 | 25,836 | 807 | 2,118 |
| 8 | Elkins/K St (Summer/E 1st) | 25 | 0.17 | 0.28 | 0.52 | 1,110 | 1,110 | 97 | 91 | 0.52 | 573 | 18 | 10,457 | 537 | 16 | 8,819 | 52 | 98 |
| 9 | Summer St(Elkins/E 1st) | 30 | 0.07 | 0.26 | 1.14 | 24,973 | 24,973 | 902 | 846 | 0.52 | 12,892 | 29 | 369,990 | 12,081 | 26 | 312,058 | 447 | 1,990 |
| 10 | E 1st St (M/Farragut) | 30 | 0.43 | 0.26 | 0.25 | 8,116 | 8,116 | 1,802 | 1,688 | 0.52 | 4,190 | 0 | 0 | 3,926 | 0 | 0 | 916 | 862 |
| 11 | M St (E 1st/Broadway) | 25 | 0.17 | 0.14 | 0.50 | 763 | 763 | 67 | 63 | 0.52 | 394 | 9 | 3,388 | 369 | 8 | 2,857 | 18 | 65 |
| 12 | E 1st St (Summer/M) | 30 | 0.11 | 0.32 | 0.76 | 8,255 | 8,255 | 469 | 439 | 0.52 | 4,261 | 21 | 89,916 | 3,994 | 19 | 75,837 | 289 | 689 |
| 13 | E 1st St (K/Summer) | 25 | 0.1 | 0.29 | 0.83 | 5,272 | 5,272 | 272 | 255 | 0.52 | 2,722 | 64 | 174,453 | 2,550 | 58 | 147,137 | 155 | 438 |
| 14 | K St (E 1st/Broadway) | 25 | 0.17 | 0.19 | 0.51 | 971 | 971 | 85 | 80 | 0.52 | 501 | 7 | 3,509 | 470 | 6 | 2,960 | 31 | 84 |
| 15 | E 1st St (K/Pappas) | 25 | 0.35 | 0.27 | 0.29 | 6,104 | 6,104 | 1,103 | 1,034 | 0.52 | 3,151 | 1 | 3,151 | 2,953 | 1 | 2,658 | 576 | 629 |
| 16 | W 1st St (Pappas/Dorchester) | 25 | 0.08 | 0.18 | 1.00 | 8,949 | 8,949 | 370 | 346 | 0.52 | 4,620 | 0 | 1,617 | 4,329 | 0 | 1,364 | 129 | 718 |
| 17 | W 1st St (D/Papps) | 25 | 0.29 | 0.27 | 0.34 | 1,110 | 1,110 | 166 | 156 | 0.52 | 573 | 10 | 5,816 | 537 | 9 | 4,905 | 87 | 109 |
| 18 | L St (E 1st/E 2nd) | 30 | 0.06 | 0.33 | 1.33 | 18,730 | 18,730 | 580 | 544 | 0.52 | 9,669 | 9 | 87,019 | 9,061 | 8 | 73,393 | 367 | 1,490 |
| 19 | E 2nd St (Dorchester/L) | 25 | 0.41 | 0.28 | 0.26 | 902 | 902 | 191 | 179 | 0.52 | 466 | 9 | 4,260 | 436 | 8 | 3,593 | 102 | 98 |
| 20 | E 2nd St (L/M) | 25 | 0.11 | 0.37 | 0.77 | 694 | 694 | 39 | 37 | 0.52 | 358 | 8 | 2,990 | 336 | 8 | 2,522 | 28 | 59 |
| 21 | L St (E 2nd/E 3rd) | 30 | 0.06 | 0.31 | 1.32 | 18,730 | 18,730 | 580 | 544 | 0.52 | 9,669 | 1 | 7,735 | 9,061 | 1 | 6,524 | 351 | 1,487 |
| 22 | E 3rd St (Dorchester/L) | 25 | 0.46 | 0.31 | 0.25 | 1,179 | 1,179 | 280 | 262 | 0.52 | 609 | 10 | 6,240 | 571 | 9 | 5,263 | 168 | 136 |
| 23 | E 3rd St (L/M) | 25 | 0.11 | 0.50 | 0.80 | 832 | 832 | 47 | 44 | 0.52 | 430 | 8 | 3,223 | 403 | 7 | 2,718 | 46 | 73 |
| 24 | L St (E 3rd/E Broadway) | 30 | 0.06 | 0.37 | 1.33 | 18,105 | 18,105 | 561 | 526 | 0.52 | 9,346 | 59 | 553,309 | 8,759 | 53 | 466,673 | 402 | 1,447 |
| 25 | E Broadway (Dorchester/L) | 25 | 0.51 | 0.31 | 0.23 | 8,879 | 8,879 | 2,338 | 2,191 | 0.52 | 4,584 | 23 | 107,259 | 4,296 | 21 | 90,464 | 1,389 | 1,058 |
| 26 | E Broadway (L/Farragut) | 25 | 0.53 | 0.28 | 0.22 | 5,411 | 5,411 | 1,480 | 1,387 | 0.52 | 2,793 | 30 | 82,818 | 2,618 | 27 | 69,851 | 794 | 640 |
| 27 | L St (E Broadway/E 5th) | 30 | 0.12 | 0.25 | 0.69 | 14,914 | 14,914 | 924 | 866 | 0.52 | 7,699 | 28 | 217,502 | 7,215 | 25 | 183,446 | 450 | 1,242 |
| 28 | E 5th St (G/L) | 25 | 0.45 | 0.38 | 0.26 | 1,249 | 1,249 | 290 | 272 | 0.52 | 645 | 20 | 12,795 | 604 | 18 | 10,792 | 212 | 148 |
| 29 | E 5th St (L/Farragut) | 25 | 0.53 | 0.28 | 0.22 | 1,665 | 1,665 | 456 | 427 | 0.52 | 859 | 22 | 18,951 | 805 | 20 | 15,983 | 251 | 198 |
| 30 | L St (E 5th/E 8th) | 30 | 0.17 | 0.29 | 0.52 | 13,458 | 13,458 | 1,181 | 1,107 | 0.52 | 6,947 | 18 | 123,312 | 6,510 | 16 | 104,004 | 657 | 1,180 |
| 31 | E 8th St (Dorchester/L) | 25 | 0.85 | 0.27 | 0.17 | 1,595 | 1,595 | 700 | 656 | 0.52 | 824 | 12 | 9,637 | 772 | 11 | 8,128 | 364 | 229 |
| 32 | E 8th St (L/Day) | 25 | 0.28 | 0.31 | 0.35 | 1,249 | 1,249 | 180 | 169 | 0.52 | 645 | 11 | 7,187 | 604 | 10 | 6,062 | 107 | 124 |
| 33 | L St (E 8th/Columbia) | 30 | 0.13 | 0.31 | 0.65 | 12,001 | 12,001 | 805 | 755 | 0.52 | 6,195 | 5 | 32,215 | 5,806 | 5 | 27,171 | 489 | 1,021 |
| 34 | Columbia Rd (G/L) | 25 | 0.47 | 0.27 | 0.24 | 763 | 763 | 185 | 173 | 0.52 | 394 | 10 | 4,057 | 369 | 9 | 3,422 | 96 | 86 |
| 35 | Columbia Rd (L/O) | 25 | 0.35 | 0.27 | 0.29 | 763 | 763 | 138 | 129 | 0.52 | 394 | 8 | 3,151 | 369 | 7 | 2,658 | 71 | 79 |
| 36 | L St (Columbia/Day) | 30 | 0.01 | 0.25 | 7.53 | 11,377 | 11,377 | 59 | 55 | 0.52 | 5,873 | 0 | 294 | 5,504 | 0 | 248 | 28 | 857 |
| 37 | Day Blvd (G/L) | 30 | 0.47 | 0.25 | 0.23 | 21,227 | 21,227 | 5,150 | 4,826 | 0.52 | 10,958 | 2 | 20,820 | 10,269 | 2 | 17,560 | 2,489 | 2,300 |
| 38 | Day Blvd (L/O) | 30 | 0.35 | 0.25 | 0.28 | 10,544 | 10,544 | 1,905 | 1,785 | 0.52 | 5,443 | 1 | 5,715 | 5,101 | 1 | 4,820 | 919 | 1,051 |
| 39 | Elkin Drwy (Summer) [BD] | 15 | 0.1 | 0.32 | 0.86 | 0 | 0 | 0 | 0 | 0.52 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 40 | M St Drwy (E 1st) [BD] | 15 | 0.1 | 0.32 | 0.86 | 0 | 0 | 0 | 0 | 0.52 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | VMT (per day) | 33,051 | 30,973 | | | | | | | | 17.4 | 29.4 |
| | | | | | | | VMT (per year) | 12,063,600 | 11,305,228.5 | | | Arterial | 3,335,148 | | | 2,812,937 | **Daily Total (kg)** | |
| | | | | | | | | | | | | | | | | | **$NO_X$** | **VOC** |

| | |
|---|---|
| **VMT Total (per year)** | **23,368,828.82** |

| | NOx (g/s) | NOx (g/day) | NOx (kg/day) | VOC (g/s) | VOC (g/day) | VOC (kg/day) |
|---|---|---|---|---|---|---|
| Peak Period | 0.0005 | 1,783 | **1.78** | 0.0003 | 1,033 | **1.03** |
| Off-Peak Period | 0.0005 | 1,504 | **1.50** | 0.0003 | 871 | **0.87** |
| Total (Including Link) | | | **20.65** | | | **31.33** |

## L Street Redevelopment

**Build With Mitgation**

| Link No. | Description | Roadway Link Length Speed | Roadway Link Length (miles) | Emission Factor (g/mi) $CO_2$ | Weekday AADT (veh/day) | Weekday Seasonally Adjusted ADT (veh/day) | Weekday VMT Peak (veh-miles) | Weekday VMT Off-Peak (veh-miles) | Weekday Annual Weekday Trips (veh/yr) | Peak Period Factor | Weekday Peak Traffic Data Period Volume (vehicles) | Peak Traffic Data Average Delay (sec) | Peak Traffic Data Adjusted Delay (veh-sec) | Weekday Off-Peak Traffic Data Period Volume (vehicles) | Off-Peak Traffic Data Average Delay (sec) | Off-Peak Traffic Data Adjusted Delay (veh-sec) | Link Emissions $CO_2$ (grams) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Summer St (Pumphouse/Drydock) | 30 | 0.1 | 321.3 | 36,044 | 36,044 | 679,153 | 636,459 | 13,156,123 | 0.52 | 6,791,534 | 49 | 330,747,728 | 6,364,588 | 44 | 278,959,903 | 422,731,223 |
| 2 | Drydock Ave (Summer/Harbor) | 25 | 0.11 | 333.6 | 13,999 | 13,999 | 290,143 | 271,904 | 5,109,518 | 0.52 | 2,637,667 | 42 | 109,595,054 | 2,471,851 | 37 | 92,434,877 | 187,515,730 |
| 3 | Pappas Way (Summer/W 1st)) | 25 | 0.54 | 339.8 | 7,908 | 7,908 | 804,632 | 754,049 | 2,886,447 | 0.52 | 1,490,060 | 258 | 383,839,333 | 1,396,388 | 232 | 323,738,530 | 529,587,998 |
| 4 | Summer St (Drydock/Freight Road) | 30 | 0.29 | 308.4 | 32,229 | 32,229 | 1,761,067 | 1,650,359 | 11,763,539 | 0.52 | 6,072,646 | 87 | 527,105,681 | 5,690,892 | 78 | 444,572,516 | 1,051,922,726 |
| 5 | Fedex Drwy (Summer) | 25 | 0.02 | 361.3 | 652 | 652 | 2,457 | 2,303 | 238,005 | 0.52 | 122,865 | 17 | 2,107,127 | 115,141 | 15 | 1,777,197 | 1,719,638 |
| 6 | Freight Road (Summer) | 25 | 0.21 | 346.1 | 430 | 430 | 17,018 | 15,948 | 156,982 | 0.52 | 81,038 | 17 | 1,393,859 | 75,944 | 15 | 1,175,611 | 11,411,211 |
| 7 | Summer St (Freight/Elkins) | 30 | 0.13 | 299.8 | 31,549 | 31,549 | 772,792 | 724,211 | 11,515,405 | 0.52 | 5,944,553 | 31 | 182,200,557 | 5,570,852 | 28 | 153,671,954 | 448,817,534 |
| 8 | Elkins/K St (Summer/E 1st) | 25 | 0.17 | 343.3 | 1,179 | 1,179 | 37,774 | 35,400 | 430,435 | 0.52 | 222,202 | 36 | 7,954,827 | 208,233 | 32 | 6,709,276 | 25,119,161 |
| 9 | Summer St(Elkins/E 1st) | 30 | 0.07 | 306.8 | 29,218 | 29,218 | 385,376 | 361,150 | 10,664,663 | 0.52 | 5,505,378 | 18 | 100,473,145 | 5,159,285 | 16 | 84,741,259 | 229,014,040 |
| 10 | E 1st St (M/Farragut) | 30 | 0.43 | 312.1 | 8,851 | 8,851 | 717,163 | 672,079 | 3,230,795 | 0.52 | 1,667,821 | 0 | 0 | 1,562,974 | 0 | 0 | 433,630,889 |
| 11 | M St (E 1st/Broadway) | 25 | 0.17 | 237.6 | 791 | 791 | 25,331 | 23,739 | 288,645 | 0.52 | 149,006 | 13 | 1,914,726 | 139,639 | 12 | 1,614,922 | 11,658,880 |
| 12 | E 1st St (Summer/M) | 30 | 0.11 | 353.0 | 9,767 | 9,767 | 202,439 | 189,713 | 3,565,016 | 0.52 | 1,840,354 | 28 | 50,701,759 | 1,724,661 | 25 | 42,762,978 | 138,449,158 |
| 13 | E 1st St (K/Summer) | 25 | 0.1 | 355.2 | 6,479 | 6,479 | 122,080 | 114,406 | 2,364,861 | 0.52 | 1,220,803 | 103 | 125,742,725 | 1,144,058 | 93 | 106,054,178 | 83,989,223 |
| 14 | K St (E 1st/Broadway) | 25 | 0.17 | 279.1 | 1,041 | 1,041 | 33,330 | 31,235 | 379,796 | 0.52 | 196,060 | 8 | 1,539,075 | 183,735 | 7 | 1,298,089 | 18,017,090 |
| 15 | E 1st St (K/Pappas) | 25 | 0.35 | 338.4 | 7,298 | 7,298 | 481,263 | 451,009 | 2,663,634 | 0.52 | 1,375,037 | 1 | 1,237,534 | 1,288,596 | 1 | 1,043,763 | 315,526,073 |
| 16 | W 1st St (Pappas/Dorchester) | 25 | 0.08 | 270.7 | 10,225 | 10,225 | 154,130 | 144,440 | 3,732,126 | 0.52 | 1,926,621 | 0 | 770,648 | 1,805,505 | 0 | 649,982 | 80,823,286 |
| 17 | W 1st St (D/Papps) | 25 | 0.29 | 339.5 | 1,332 | 1,332 | 72,778 | 68,203 | 486,138 | 0.52 | 250,957 | 12 | 3,074,228 | 235,181 | 11 | 2,592,872 | 47,861,257 |
| 18 | L St (E 1st/E 2nd) | 30 | 0.06 | 358.5 | 22,295 | 22,295 | 252,055 | 236,210 | 8,137,756 | 0.52 | 4,200,922 | 12 | 48,940,744 | 3,936,833 | 10 | 41,277,699 | 175,045,567 |
| 19 | E 2nd St (Dorchester/L) | 25 | 0.41 | 343.0 | 971 | 971 | 75,026 | 70,309 | 354,476 | 0.52 | 182,990 | 13 | 2,305,671 | 171,486 | 11 | 1,944,654 | 49,854,210 |
| 20 | E 2nd St (L/M) | 25 | 0.11 | 401.8 | 735 | 735 | 15,240 | 14,282 | 268,389 | 0.52 | 138,549 | 11 | 1,537,898 | 129,840 | 10 | 1,297,097 | 11,862,067 |
| 21 | L St (E 2nd/E 3rd) | 30 | 0.06 | 348.5 | 22,281 | 22,281 | 251,898 | 236,063 | 8,132,692 | 0.52 | 4,198,308 | 1 | 5,667,716 | 3,934,384 | 1 | 4,780,276 | 170,068,407 |
| 22 | E 3rd St (Dorchester/L) | 25 | 0.46 | 365.2 | 1,263 | 1,263 | 109,428 | 102,549 | 460,819 | 0.52 | 237,887 | 15 | 3,568,300 | 222,932 | 14 | 3,009,583 | 77,410,176 |
| 23 | E 3rd St (L/M) | 25 | 0.11 | 497.3 | 902 | 902 | 18,691 | 17,516 | 329,156 | 0.52 | 169,919 | 9 | 1,571,751 | 159,237 | 8 | 1,325,650 | 18,007,514 |
| 24 | L St (E 3rd/E Broadway) | 30 | 0.06 | 390.3 | 21,629 | 21,629 | 244,527 | 229,155 | 7,894,686 | 0.52 | 4,075,444 | 28 | 115,131,279 | 3,819,243 | 25 | 97,104,251 | 184,888,817 |
| 25 | E Broadway (Dorchester/L) | 25 | 0.51 | 363.3 | 9,573 | 9,573 | 919,916 | 862,086 | 3,494,120 | 0.52 | 1,803,756 | 38 | 68,813,302 | 1,690,364 | 34 | 58,038,651 | 647,467,508 |
| 26 | E Broadway (L/Farragut) | 25 | 0.53 | 343.7 | 6,271 | 6,271 | 626,243 | 586,875 | 2,288,902 | 0.52 | 1,181,591 | 66 | 78,457,646 | 1,107,311 | 60 | 66,172,903 | 416,953,269 |
| 27 | L St (E Broadway/E 5th) | 30 | 0.12 | 303.8 | 18,064 | 18,064 | 408,433 | 382,757 | 6,593,253 | 0.52 | 3,403,610 | 35 | 118,785,977 | 3,189,644 | 31 | 100,186,703 | 240,356,383 |
| 28 | E 5th St (G/L) | 25 | 0.45 | 410.5 | 1,318 | 1,318 | 111,754 | 104,729 | 481,075 | 0.52 | 248,343 | 20 | 5,004,117 | 232,731 | 18 | 4,220,582 | 88,865,054 |
| 29 | E 5th St (L/Farragut) | 25 | 0.53 | 349.0 | 1,776 | 1,776 | 177,343 | 166,195 | 648,185 | 0.52 | 334,610 | 23 | 7,595,644 | 313,575 | 20 | 6,406,333 | 119,878,520 |
| 30 | L St (E 5th/E 8th) | 30 | 0.17 | 329.8 | 16,482 | 16,482 | 527,952 | 494,762 | 6,015,964 | 0.52 | 3,105,598 | 26 | 79,658,582 | 2,910,366 | 23 | 67,185,799 | 337,325,913 |
| 31 | E 8th St (Dorchester/L) | 25 | 0.85 | 337.4 | 1,720 | 1,720 | 275,530 | 258,209 | 627,929 | 0.52 | 324,153 | 12 | 3,825,009 | 303,776 | 11 | 3,226,097 | 180,093,131 |
| 32 | E 8th St (L/Day) | 25 | 0.28 | 363.7 | 1,332 | 1,332 | 70,268 | 65,851 | 486,138 | 0.52 | 250,957 | 11 | 2,798,175 | 235,181 | 10 | 2,360,042 | 49,511,746 |
| 33 | L St (E 8th/Columbia) | 30 | 0.13 | 349.4 | 14,998 | 14,998 | 367,365 | 344,271 | 5,474,122 | 0.52 | 2,825,885 | 6 | 17,096,603 | 2,648,237 | 5 | 14,419,651 | 248,630,794 |
| 34 | Columbia Rd (G/L) | 25 | 0.47 | 337.1 | 721 | 721 | 63,890 | 59,873 | 263,325 | 0.52 | 135,935 | 15 | 1,977,858 | 127,390 | 13 | 1,668,169 | 41,720,163 |
| 35 | Columbia Rd (L/O) | 25 | 0.35 | 337.0 | 652 | 652 | 43,003 | 40,299 | 238,005 | 0.52 | 122,865 | 10 | 1,259,362 | 115,141 | 9 | 1,062,173 | 28,072,249 |
| 36 | L St (Columbia/Day) | 30 | 0.01 | 299.8 | 14,248 | 14,248 | 26,847 | 25,159 | 5,200,669 | 0.52 | 2,684,721 | 0 | 134,236 | 2,515,948 | 0 | 113,218 | 15,592,178 |
| 37 | Day Blvd (G/L) | 30 | 0.47 | 302.6 | 24,765 | 24,765 | 2,193,132 | 2,055,262 | 9,039,137 | 0.52 | 4,666,239 | 2 | 10,499,038 | 4,372,898 | 2 | 8,855,119 | 1,285,446,694 |
| 38 | Day Blvd (L/O) | 30 | 0.35 | 302.3 | 11,252 | 11,252 | 742,024 | 695,377 | 4,106,857 | 0.52 | 2,120,067 | 1 | 2,226,071 | 1,986,790 | 1 | 1,877,517 | 434,484,978 |
| 39 | Elkin Drwy (Summer) [BD] | 15 | 0.1 | 437.4 | 5,314 | 5,314 | 100,122 | 93,827 | 1,939,490 | 0.52 | 1,001,215 | 50 | 50,411,197 | 938,275 | 45 | 42,517,912 | 84,837,171 |
| 40 | M St Drwy (E 1st) [BD] | 15 | 0.1 | 437.4 | 777 | 777 | 14,639 | 13,719 | 283,581 | 0.52 | 146,392 | 6 | 827,114 | 137,189 | 5 | 697,606 | 12,404,391 |
| | | | | | | VMT (per year) | 14,194,255 | 13,301,940 | | | | | | | | | 9,872.76 |
| | | | | | | | | | | | | Arterial | 2,458,491,295 | | | 2,073,545,590 | **Total (tons/year)** |

| | Weekday | Total |
|---|---|---|
| **VMT per year** | **27,496,195.18** | **27,496,195.18** |

| | Weekday Idle EF (g/s) | Weekday Idle Idle (g/year) | Weekday Idle Idle (tons/year) | Total Idle EF (g/s) | Total Idle Idle (g/year) | Total Idle Idle (tons/year) |
|---|---|---|---|---|---|---|
| Peak Period | 0.7838 | 1,927,006,445 | **2,124.13** | | | **2,124.13** |
| Off-Peak Period | 0.7838 | 1,625,279,587 | **1,791.53** | | | **1,791.53** |
| Total | | | **3,915.66** | | Total (Including Link) | **13,788.42** |

## L Street Redevelopment

**Build**

| Link No. | Description | Roadway Link Length Speed | Roadway Link Length (miles) | Emission Factor (g/mi) $CO_2$ | AADT (veh/day) | Seasonally Adjusted ADT (veh/day) | VMT Peak (veh-miles) | VMT Off-Peak (veh-miles) | Annual Weekday Trips (veh/yr) | Peak Period Factor | Weekday Peak Traffic Data Period Volume (vehicles) | Peak Traffic Data Average Delay (sec) | Peak Traffic Data Adjusted Delay (veh-sec) | Weekday Off-Peak Traffic Data Period Volume (vehicles) | Off-Peak Traffic Data Average Delay (sec) | Off-Peak Traffic Data Adjusted Delay (veh-sec) | Link Emissions $CO_2$ (grams) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Summer St (Pumphouse/Drydock) | 30 | 0.1 | 321.3 | 36,044 | 36,044 | 679,153 | 636,459 | 13,156,123 | 0.52 | 6,791,534 | 49 | 330,747,728 | 6,364,588 | 44 | 278,959,903 | 422,731,223 |
| 2 | Drydock Ave (Summer/Harbor) | 25 | 0.11 | 333.6 | 13,999 | 13,999 | 290,143 | 271,904 | 5,109,518 | 0.52 | 2,637,667 | 42 | 109,595,054 | 2,471,851 | 37 | 92,434,877 | 187,515,730 |
| 3 | Pappas Way (Summer/W 1st)) | 25 | 0.54 | 339.8 | 7,908 | 7,908 | 804,632 | 754,049 | 2,886,447 | 0.52 | 1,490,060 | 258 | 383,839,333 | 1,396,388 | 232 | 323,738,530 | 529,587,998 |
| 4 | Summer St (Drydock/Freight Road) | 30 | 0.29 | 308.4 | 32,229 | 32,229 | 1,761,067 | 1,650,359 | 11,763,539 | 0.52 | 6,072,646 | 87 | 527,105,681 | 5,690,892 | 78 | 444,572,516 | 1,051,922,726 |
| 5 | Fedex Drwy (Summer) | 25 | 0.02 | 361.3 | 652 | 652 | 2,457 | 2,303 | 238,005 | 0.52 | 122,865 | 17 | 2,107,127 | 115,141 | 15 | 1,777,197 | 1,719,638 |
| 6 | Freight Road (Summer) | 25 | 0.21 | 346.1 | 430 | 430 | 17,018 | 15,948 | 156,982 | 0.52 | 81,038 | 17 | 1,393,859 | 75,944 | 15 | 1,175,611 | 11,411,211 |
| 7 | Summer St (Freight/Elkins) | 30 | 0.13 | 299.8 | 31,549 | 31,549 | 772,792 | 724,211 | 11,515,405 | 0.52 | 5,944,553 | 3 | 20,508,709 | 5,570,852 | 3 | 17,297,496 | 448,817,534 |
| 8 | Elkins/K St (Summer/E 1st) | 25 | 0.17 | 343.3 | 1,179 | 1,179 | 37,774 | 35,400 | 430,435 | 0.52 | 222,202 | 32 | 7,132,680 | 208,233 | 29 | 6,015,859 | 25,119,161 |
| 9 | Summer St(Elkins/E 1st) | 30 | 0.07 | 306.8 | 29,218 | 29,218 | 385,376 | 361,150 | 10,664,663 | 0.52 | 5,505,378 | 86 | 472,361,417 | 5,159,285 | 77 | 398,400,000 | 229,014,040 |
| 10 | E 1st St (M/Farragut) | 30 | 0.43 | 312.1 | 8,851 | 8,851 | 717,163 | 672,079 | 3,230,795 | 0.52 | 1,667,821 | 0 | 0 | 1,562,974 | 0 | 0 | 433,630,889 |
| 11 | M St (E 1st/Broadway) | 25 | 0.17 | 237.6 | 791 | 791 | 25,331 | 23,739 | 288,645 | 0.52 | 149,006 | 13 | 1,914,726 | 139,639 | 12 | 1,614,922 | 11,658,880 |
| 12 | E 1st St (Summer/M) | 30 | 0.11 | 353.0 | 9,767 | 9,767 | 202,439 | 189,713 | 3,565,016 | 0.52 | 1,840,354 | 42 | 76,650,753 | 1,724,661 | 37 | 64,648,930 | 138,449,158 |
| 13 | E 1st St (K/Summer) | 25 | 0.1 | 355.2 | 6,479 | 6,479 | 122,080 | 114,406 | 2,364,861 | 0.52 | 1,220,803 | 118 | 144,054,772 | 1,144,058 | 106 | 121,498,961 | 83,989,223 |
| 14 | K St (E 1st/Broadway) | 25 | 0.17 | 279.1 | 1,041 | 1,041 | 33,330 | 31,235 | 379,796 | 0.52 | 196,060 | 8 | 1,539,075 | 183,735 | 7 | 1,298,089 | 18,017,090 |
| 15 | E 1st St (K/Pappas) | 25 | 0.35 | 338.4 | 7,298 | 7,298 | 481,263 | 451,009 | 2,663,634 | 0.52 | 1,375,037 | 1 | 1,237,534 | 1,288,596 | 1 | 1,043,763 | 315,526,073 |
| 16 | W 1st St (Pappas/Dorchester) | 25 | 0.08 | 270.7 | 10,225 | 10,225 | 154,130 | 144,440 | 3,732,126 | 0.52 | 1,926,621 | 0 | 770,648 | 1,805,505 | 0 | 649,982 | 80,823,286 |
| 17 | W 1st St (D/Papps) | 25 | 0.29 | 339.5 | 1,332 | 1,332 | 72,778 | 68,203 | 486,138 | 0.52 | 250,957 | 12 | 3,074,228 | 235,181 | 11 | 2,592,872 | 47,861,257 |
| 18 | L St (E 1st/E 2nd) | 30 | 0.06 | 358.5 | 22,295 | 22,295 | 252,055 | 236,210 | 8,137,756 | 0.52 | 4,200,922 | 12 | 49,360,836 | 3,936,833 | 11 | 41,632,014 | 175,045,567 |
| 19 | E 2nd St (Dorchester/L) | 25 | 0.41 | 343.0 | 971 | 971 | 75,026 | 70,309 | 354,476 | 0.52 | 182,990 | 13 | 2,305,671 | 171,486 | 11 | 1,944,654 | 49,854,210 |
| 20 | E 2nd St (L/M) | 25 | 0.11 | 401.8 | 735 | 735 | 15,240 | 14,282 | 268,389 | 0.52 | 138,549 | 11 | 1,537,898 | 129,840 | 10 | 1,297,097 | 11,862,067 |
| 21 | L St (E 2nd/E 3rd) | 30 | 0.06 | 348.5 | 22,281 | 22,281 | 251,898 | 236,063 | 8,132,692 | 0.52 | 4,198,308 | 1 | 5,667,716 | 3,934,384 | 1 | 4,780,276 | 170,068,407 |
| 22 | E 3rd St (Dorchester/L) | 25 | 0.46 | 365.2 | 1,263 | 1,263 | 109,428 | 102,549 | 460,819 | 0.52 | 237,887 | 15 | 3,568,300 | 222,932 | 14 | 3,009,583 | 77,410,176 |
| 23 | E 3rd St (L/M) | 25 | 0.11 | 497.3 | 902 | 902 | 18,691 | 17,516 | 329,156 | 0.52 | 169,919 | 9 | 1,571,751 | 159,237 | 8 | 1,325,650 | 18,007,514 |
| 24 | L St (E 3rd/E Broadway) | 30 | 0.06 | 390.3 | 21,629 | 21,629 | 244,527 | 229,155 | 7,894,686 | 0.52 | 4,075,444 | 125 | 509,226,666 | 3,819,243 | 112 | 429,492,961 | 184,888,817 |
| 25 | E Broadway (Dorchester/L) | 25 | 0.51 | 363.3 | 9,573 | 9,573 | 919,916 | 862,086 | 3,494,120 | 0.52 | 1,803,756 | 24 | 43,650,902 | 1,690,364 | 22 | 36,816,130 | 647,467,508 |
| 26 | E Broadway (L/Farragut) | 25 | 0.53 | 343.7 | 6,271 | 6,271 | 626,243 | 586,875 | 2,288,902 | 0.52 | 1,181,591 | 31 | 37,161,039 | 1,107,311 | 28 | 31,342,437 | 416,953,269 |
| 27 | L St (E Broadway/E 5th) | 30 | 0.12 | 303.8 | 18,064 | 18,064 | 408,433 | 382,757 | 6,593,253 | 0.52 | 3,403,610 | 41 | 138,867,274 | 3,189,644 | 37 | 117,123,711 | 240,356,383 |
| 28 | E 5th St (G/L) | 25 | 0.45 | 410.5 | 1,318 | 1,318 | 111,754 | 104,729 | 481,075 | 0.52 | 248,343 | 20 | 5,004,117 | 232,731 | 18 | 4,220,582 | 88,865,054 |
| 29 | E 5th St (L/Farragut) | 25 | 0.53 | 349.0 | 1,776 | 1,776 | 177,343 | 166,195 | 648,185 | 0.52 | 334,610 | 23 | 7,595,644 | 313,575 | 20 | 6,406,333 | 119,878,520 |
| 30 | L St (E 5th/E 8th) | 30 | 0.17 | 329.8 | 16,482 | 16,482 | 527,952 | 494,762 | 6,015,964 | 0.52 | 3,105,598 | 26 | 79,658,582 | 2,910,366 | 23 | 67,185,799 | 337,325,913 |
| 31 | E 8th St (Dorchester/L) | 25 | 0.85 | 337.4 | 1,720 | 1,720 | 275,530 | 258,209 | 627,929 | 0.52 | 324,153 | 12 | 3,825,009 | 303,776 | 11 | 3,226,097 | 180,093,131 |
| 32 | E 8th St (L/Day) | 25 | 0.28 | 363.7 | 1,332 | 1,332 | 70,268 | 65,851 | 486,138 | 0.52 | 250,957 | 11 | 2,798,175 | 235,181 | 10 | 2,360,042 | 49,511,746 |
| 33 | L St (E 8th/Columbia) | 30 | 0.13 | 349.4 | 14,998 | 14,998 | 367,365 | 344,271 | 5,474,122 | 0.52 | 2,825,885 | 6 | 17,096,603 | 2,648,237 | 5 | 14,419,651 | 248,630,794 |
| 34 | Columbia Rd (G/L) | 25 | 0.47 | 337.1 | 721 | 721 | 63,890 | 59,873 | 263,325 | 0.52 | 135,935 | 15 | 1,977,858 | 127,390 | 13 | 1,668,169 | 41,720,163 |
| 35 | Columbia Rd (L/O) | 25 | 0.35 | 337.0 | 652 | 652 | 43,003 | 40,299 | 238,005 | 0.52 | 122,865 | 10 | 1,259,362 | 115,141 | 9 | 1,062,173 | 28,072,249 |
| 36 | L St (Columbia/Day) | 30 | 0.01 | 299.8 | 14,248 | 14,248 | 26,847 | 25,159 | 5,200,669 | 0.52 | 2,684,721 | 0 | 134,236 | 2,515,948 | 0 | 113,218 | 15,592,178 |
| 37 | Day Blvd (G/L) | 30 | 0.47 | 302.6 | 24,765 | 24,765 | 2,193,132 | 2,055,262 | 9,039,137 | 0.52 | 4,666,239 | 2 | 10,499,038 | 4,372,898 | 2 | 8,855,119 | 1,285,446,694 |
| 38 | Day Blvd (L/O) | 30 | 0.35 | 302.3 | 11,252 | 11,252 | 742,024 | 695,377 | 4,106,857 | 0.52 | 2,120,067 | 1 | 2,226,071 | 1,986,790 | 1 | 1,877,517 | 434,484,978 |
| 39 | Elkin Drwy (Summer) [BD] | 15 | 0.1 | 437.4 | 5,314 | 5,314 | 100,122 | 93,827 | 1,939,490 | 0.52 | 1,001,215 | 9 | 8,760,635 | 938,275 | 8 | 7,388,912 | 84,837,171 |
| 40 | M St Drwy (E 1st) [BD] | 15 | 0.1 | 437.4 | 777 | 777 | 14,639 | 13,719 | 283,581 | 0.52 | 146,392 | 6 | 827,114 | 137,189 | 5 | 697,606 | 12,404,391 |
| | | | | | | VMT (per year) | 14,194,255 | 13,301,940 | | | | | | | | | 9,872.76 |
| | | | | | | | | | | | | Arterial | 3,018,613,819 | | | 2,545,965,237 | **Total (tons/year)** |

| | Weekday | Total |
|---|---|---|
| **VMT per year** | **27,496,195.18** | **27,496,195.18** |

| | Weekday Idle (g/s) | Weekday Idle (g/year) | Weekday Idle (tons/year) | Total Idle (g/s) | Total Idle (g/year) | Total Idle (tons/year) |
|---|---|---|---|---|---|---|
| Peak Period | 0.7838 | 2,366,039,813 | **2,608.07** | | | **2,608.07** |
| Off-Peak Period | 0.7838 | 1,995,569,979 | **2,199.70** | | | **2,199.70** |
| Total | | | **4,807.77** | Total (Including Link) | | **14,680.54** |

## L Street Redevelopment

**No Build** — **Weekday**

| Link No. | Description | Roadway Link Length Speed | Roadway Link Length (miles) | Emission Factor (g/mi) $CO_2$ | AADT (veh/day) | Seasonally Adjusted ADT (veh/day) | VMT Peak (veh-miles) | VMT Off-Peak (veh-miles) | Annual Weekday Trips (veh/yr) | Peak Period Factor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Summer St (Pumphouse/Drydock) | 30 | 0.1 | 321.3 | 32,465 | 32,465 | 611,709 | 573,254 | 11,849,626 | 0.52 |
| 2 | Drydock Ave (Summer/Harbor) | 25 | 0.11 | 333.6 | 13,999 | 13,999 | 290,143 | 271,904 | 5,109,518 | 0.52 |
| 3 | Pappas Way (Summer/W 1st)) | 25 | 0.54 | 339.8 | 7,908 | 7,908 | 804,632 | 754,049 | 2,886,447 | 0.52 |
| 4 | Summer St (Drydock/Freight Road) | 30 | 0.29 | 308.4 | 28,649 | 28,649 | 1,565,477 | 1,467,065 | 10,457,041 | 0.52 |
| 5 | Fedex Drwy (Summer) | 25 | 0.02 | 361.3 | 652 | 652 | 2,457 | 2,303 | 238,005 | 0.52 |
| 6 | Freight Road (Summer) | 25 | 0.21 | 346.1 | 430 | 430 | 17,018 | 15,948 | 156,982 | 0.52 |
| 7 | Summer St (Freight/Elkins) | 30 | 0.13 | 299.8 | 27,970 | 27,970 | 685,114 | 642,044 | 10,208,908 | 0.52 |
| 8 | Elkins/K St (Summer/E 1st) | 25 | 0.17 | 343.3 | 1,179 | 1,179 | 37,774 | 35,400 | 430,435 | 0.52 |
| 9 | Summer St(Elkins/E 1st) | 30 | 0.07 | 306.8 | 27,595 | 27,595 | 363,967 | 341,086 | 10,072,182 | 0.52 |
| 10 | E 1st St (M/Farragut) | 30 | 0.43 | 312.1 | 8,851 | 8,851 | 717,163 | 672,079 | 3,230,795 | 0.52 |
| 11 | M St (E 1st/Broadway) | 25 | 0.17 | 237.6 | 805 | 805 | 25,775 | 24,155 | 293,709 | 0.52 |
| 12 | E 1st St (Summer/M) | 30 | 0.11 | 353.0 | 9,004 | 9,004 | 186,623 | 174,891 | 3,286,499 | 0.52 |
| 13 | E 1st St (K/Summer) | 25 | 0.1 | 355.2 | 5,758 | 5,758 | 108,487 | 101,667 | 2,101,536 | 0.52 |
| 14 | K St (E 1st/Broadway) | 25 | 0.17 | 279.1 | 1,041 | 1,041 | 33,330 | 31,235 | 379,796 | 0.52 |
| 15 | E 1st St (K/Pappas) | 25 | 0.35 | 338.4 | 6,576 | 6,576 | 433,686 | 406,422 | 2,400,309 | 0.52 |
| 16 | W 1st St (Pappas/Dorchester) | 25 | 0.08 | 270.7 | 9,642 | 9,642 | 145,346 | 136,209 | 3,519,440 | 0.52 |
| 17 | W 1st St (D/Papps) | 25 | 0.29 | 339.5 | 1,193 | 1,193 | 65,197 | 61,098 | 435,499 | 0.52 |
| 18 | L St (E 1st/E 2nd) | 30 | 0.06 | 358.5 | 20,616 | 20,616 | 233,077 | 218,424 | 7,525,019 | 0.52 |
| 19 | E 2nd St (Dorchester/L) | 25 | 0.41 | 343.0 | 971 | 971 | 75,026 | 70,309 | 354,476 | 0.52 |
| 20 | E 2nd St (L/M) | 25 | 0.11 | 401.8 | 735 | 735 | 15,240 | 14,282 | 268,389 | 0.52 |
| 21 | L St (E 2nd/E 3rd) | 30 | 0.06 | 348.5 | 20,603 | 20,603 | 232,920 | 218,277 | 7,519,955 | 0.52 |
| 22 | E 3rd St (Dorchester/L) | 25 | 0.46 | 365.2 | 1,263 | 1,263 | 109,428 | 102,549 | 460,819 | 0.52 |
| 23 | E 3rd St (L/M) | 25 | 0.11 | 497.3 | 902 | 902 | 18,691 | 17,516 | 329,156 | 0.52 |
| 24 | L St (E 3rd/E Broadway) | 30 | 0.06 | 390.3 | 19,951 | 19,951 | 225,548 | 211,369 | 7,281,949 | 0.52 |
| 25 | E Broadway (Dorchester/L) | 25 | 0.51 | 363.3 | 9,573 | 9,573 | 919,916 | 862,086 | 3,494,120 | 0.52 |
| 26 | E Broadway (L/Farragut) | 25 | 0.53 | 343.7 | 6,410 | 6,410 | 640,098 | 599,859 | 2,339,541 | 0.52 |
| 27 | L St (E Broadway/E 5th) | 30 | 0.12 | 303.8 | 16,385 | 16,385 | 370,476 | 347,186 | 5,980,516 | 0.52 |
| 28 | E 5th St (G/L) | 25 | 0.45 | 410.5 | 1,318 | 1,318 | 111,754 | 104,729 | 481,075 | 0.52 |
| 29 | E 5th St (L/Farragut) | 25 | 0.53 | 349.0 | 1,776 | 1,776 | 177,343 | 166,195 | 648,185 | 0.52 |
| 30 | L St (E 5th/E 8th) | 30 | 0.17 | 329.8 | 14,803 | 14,803 | 474,179 | 444,370 | 5,403,227 | 0.52 |
| 31 | E 8th St (Dorchester/L) | 25 | 0.85 | 337.4 | 1,720 | 1,720 | 275,530 | 258,209 | 627,929 | 0.52 |
| 32 | E 8th St (L/Day) | 25 | 0.28 | 363.7 | 1,332 | 1,332 | 70,268 | 65,851 | 486,138 | 0.52 |
| 33 | L St (E 8th/Columbia) | 30 | 0.13 | 349.4 | 13,319 | 13,319 | 326,245 | 305,735 | 4,861,385 | 0.52 |
| 34 | Columbia Rd (G/L) | 25 | 0.47 | 337.1 | 721 | 721 | 63,890 | 59,873 | 263,325 | 0.52 |
| 35 | Columbia Rd (L/O) | 25 | 0.35 | 337.0 | 652 | 652 | 43,003 | 40,299 | 238,005 | 0.52 |
| 36 | L St (Columbia/Day) | 30 | 0.01 | 299.8 | 12,570 | 12,570 | 23,684 | 22,195 | 4,587,932 | 0.52 |
| 37 | Day Blvd (G/L) | 30 | 0.47 | 302.6 | 23,086 | 23,086 | 2,044,466 | 1,915,942 | 8,426,400 | 0.52 |
| 38 | Day Blvd (L/O) | 30 | 0.35 | 302.3 | 11,252 | 11,252 | 742,024 | 695,377 | 4,106,857 | 0.52 |
| 39 | Elkin Drwy (Summer) [BD] | 15 | 0.1 | 437.4 | 0 | 0 | 0 | 0 | 0 | 0.52 |
| 40 | M St Drwy (E 1st) [BD] | 15 | 0.1 | 437.4 | 0 | 0 | 0 | 0 | 0 | 0.52 |
| | | | | | | VMT (per year) | 13,286,704 | 12,451,442 | | |

**Weekday**

| Link No. | Period Volume (vehicles) | Peak Traffic Data Average Delay (sec) | Peak Traffic Data Adjusted Delay (veh-sec) | Off-Peak Traffic Data Period Volume (vehicles) | Off-Peak Traffic Data Average Delay (sec) | Off-Peak Traffic Data Adjusted Delay (veh-sec) |
|---|---|---|---|---|---|---|
| 1 | 6,117,086 | 33 | 199,417,019 | 5,732,539 | 29 | 168,192,696 |
| 2 | 2,637,667 | 42 | 109,595,054 | 2,471,851 | 37 | 92,434,877 |
| 3 | 1,490,060 | 211 | 314,626,068 | 1,396,388 | 190 | 265,362,541 |
| 4 | 5,398,198 | 47 | 254,525,040 | 5,058,843 | 42 | 214,672,013 |
| 5 | 122,865 | 17 | 2,107,127 | 115,141 | 15 | 1,777,197 |
| 6 | 81,038 | 17 | 1,393,859 | 75,944 | 15 | 1,175,611 |
| 7 | 5,270,105 | 2 | 12,121,242 | 4,938,803 | 2 | 10,223,322 |
| 8 | 222,202 | 18 | 3,977,413 | 208,233 | 16 | 3,354,638 |
| 9 | 5,199,523 | 65 | 339,268,908 | 4,872,658 | 59 | 286,146,853 |
| 10 | 1,667,821 | 0 | 0 | 1,562,974 | 0 | 0 |
| 11 | 151,620 | 9 | 1,417,648 | 142,089 | 8 | 1,195,675 |
| 12 | 1,696,577 | 21 | 35,458,450 | 1,589,922 | 19 | 29,906,436 |
| 13 | 1,084,868 | 64 | 69,214,572 | 1,016,668 | 57 | 58,377,091 |
| 14 | 196,060 | 7 | 1,441,044 | 183,735 | 7 | 1,215,409 |
| 15 | 1,239,102 | 1 | 1,239,102 | 1,161,207 | 1 | 1,045,086 |
| 16 | 1,816,827 | 0 | 726,731 | 1,702,613 | 0 | 612,941 |
| 17 | 224,816 | 12 | 2,585,384 | 210,683 | 10 | 2,180,570 |
| 18 | 3,884,611 | 11 | 41,759,572 | 3,640,407 | 10 | 35,220,941 |
| 19 | 182,990 | 11 | 2,003,738 | 171,486 | 10 | 1,689,997 |
| 20 | 138,549 | 10 | 1,364,712 | 129,840 | 9 | 1,151,028 |
| 21 | 3,881,997 | 1 | 4,270,197 | 3,637,957 | 1 | 3,601,578 |
| 22 | 237,887 | 13 | 3,009,267 | 222,932 | 11 | 2,538,082 |
| 23 | 169,919 | 8 | 1,427,320 | 159,237 | 8 | 1,203,833 |
| 24 | 3,759,133 | 96 | 359,561,035 | 3,522,817 | 86 | 303,261,679 |
| 25 | 1,803,756 | 24 | 43,650,902 | 1,690,364 | 22 | 36,816,130 |
| 26 | 1,207,732 | 31 | 37,983,186 | 1,131,809 | 28 | 32,035,854 |
| 27 | 3,087,299 | 33 | 100,954,670 | 2,893,217 | 29 | 85,147,387 |
| 28 | 248,343 | 20 | 5,004,117 | 232,731 | 18 | 4,220,582 |
| 29 | 334,610 | 23 | 7,595,644 | 313,575 | 20 | 6,406,333 |
| 30 | 2,789,287 | 21 | 57,319,845 | 2,613,940 | 18 | 48,344,817 |
| 31 | 324,153 | 12 | 3,825,009 | 303,776 | 11 | 3,226,097 |
| 32 | 250,957 | 11 | 2,798,175 | 235,181 | 10 | 2,360,042 |
| 33 | 2,509,574 | 5 | 13,677,178 | 2,351,811 | 5 | 11,535,632 |
| 34 | 135,935 | 12 | 1,583,646 | 127,390 | 10 | 1,335,682 |
| 35 | 122,865 | 9 | 1,075,065 | 115,141 | 8 | 906,733 |
| 36 | 2,368,410 | 0 | 118,421 | 2,219,522 | 0 | 99,878 |
| 37 | 4,349,928 | 2 | 8,917,353 | 4,076,472 | 2 | 7,521,091 |
| 38 | 2,120,067 | 1 | 2,226,071 | 1,986,790 | 1 | 1,877,517 |
| 39 | 0 | 0 | 0 | 0 | 0 | 0 |
| 40 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Arterial | 2,049,239,781 | | | 1,728,373,869 |

**Link Emissions**

| Link No. | $CO_2$ (grams) |
|---|---|
| 1 | 380,750,986 |
| 2 | 187,515,730 |
| 3 | 529,587,998 |
| 4 | 935,092,738 |
| 5 | 1,719,638 |
| 6 | 11,411,211 |
| 7 | 397,896,283 |
| 8 | 25,119,161 |
| 9 | 216,291,037 |
| 10 | 433,630,889 |
| 11 | 11,863,422 |
| 12 | 127,632,817 |
| 13 | 74,637,104 |
| 14 | 18,017,090 |
| 15 | 284,333,382 |
| 16 | 76,217,345 |
| 17 | 42,875,709 |
| 18 | 161,865,409 |
| 19 | 49,854,210 |
| 20 | 11,862,067 |
| 21 | 157,255,034 |
| 22 | 77,410,176 |
| 23 | 18,007,514 |
| 24 | 170,538,883 |
| 25 | 647,467,508 |
| 26 | 426,177,899 |
| 27 | 218,019,116 |
| 28 | 88,865,054 |
| 29 | 119,878,520 |
| 30 | 302,968,644 |
| 31 | 180,093,131 |
| 32 | 49,511,746 |
| 33 | 220,800,705 |
| 34 | 41,720,163 |
| 35 | 28,072,249 |
| 36 | 13,755,125 |
| 37 | 1,198,309,971 |
| 38 | 434,484,978 |
| 39 | 0 |
| 40 | 0 |
| | 9,227.86 |
| | **Total (tons/year)** |

| | Weekday | Total |
|---|---|---|
| **VMT per year** | **25,738,146.25** | **25,738,146.25** |

| | Weekday Idle (g/s) | Weekday Idle (g/year) | Weekday Idle (tons/year) | Total Idle (g/s) | Total Idle (g/year) | Total Idle (tons/year) |
|---|---|---|---|---|---|---|
| Peak Period | 0.7838 | 1,606,228,289 | **1,770.53** | | | **1,770.53** |
| Off-Peak Period | 0.7838 | 1,354,728,240 | **1,493.31** | | | **1,493.31** |
| Total | | | **3,263.84** | Total (Including Link) | | **12,491.70** |

## L Street Redevelopment

**Existing** — **Weekday**

| Link No. | Description | Roadway Link Length Type | Roadway Link Length (miles) | Emission Factor (g/mi) $CO_2$ | AADT (veh/day) | Seasonally Adjusted ADT (veh/day) | VMT Peak (veh-miles) | VMT Off-Peak (veh-miles) | Annual Weekday Trips (veh/yr) | Peak Period Factor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Summer St (Pumphouse/Drydock) | 30 | 0.1 | 458.0 | 29,066 | 29,066 | 547,662 | 513,234 | 10,608,960 | 0.52 |
| 2 | Drydock Ave (Summer/Harbor) | 25 | 0.11 | 477.0 | 10,544 | 10,544 | 218,542 | 204,804 | 3,848,596 | 0.52 |
| 3 | Pappas Way (Summer/W 1st)) | 25 | 0.54 | 485.7 | 7,006 | 7,006 | 712,876 | 668,061 | 2,557,291 | 0.52 |
| 4 | Summer St (Drydock/Freight Road) | 30 | 0.29 | 439.8 | 25,736 | 25,736 | 1,406,276 | 1,317,872 | 9,393,613 | 0.52 |
| 5 | Fedex Drwy (Summer) | 25 | 0.02 | 515.9 | 277 | 277 | 1,046 | 980 | 101,279 | 0.52 |
| 6 | Freight Road (Summer) | 25 | 0.21 | 494.7 | 416 | 416 | 16,469 | 15,434 | 151,918 | 0.52 |
| 7 | Summer St (Freight/Elkins) | 30 | 0.13 | 427.8 | 25,250 | 25,250 | 618,505 | 579,623 | 9,216,375 | 0.52 |
| 8 | Elkins/K St (Summer/E 1st) | 25 | 0.17 | 490.7 | 1,110 | 1,110 | 35,552 | 33,317 | 405,115 | 0.52 |
| 9 | Summer St(Elkins/E 1st) | 30 | 0.07 | 437.5 | 24,973 | 24,973 | 329,382 | 308,675 | 9,115,097 | 0.52 |
| 10 | E 1st St (M/Farragut) | 30 | 0.43 | 445.1 | 8,116 | 8,116 | 657,587 | 616,248 | 2,962,406 | 0.52 |
| 11 | M St (E 1st/Broadway) | 25 | 0.17 | 341.7 | 763 | 763 | 24,442 | 22,906 | 278,517 | 0.52 |
| 12 | E 1st St (Summer/M) | 30 | 0.11 | 502.7 | 8,255 | 8,255 | 171,095 | 160,340 | 3,013,046 | 0.52 |
| 13 | E 1st St (K/Summer) | 25 | 0.1 | 507.4 | 5,272 | 5,272 | 99,337 | 93,093 | 1,924,298 | 0.52 |
| 14 | K St (E 1st/Broadway) | 25 | 0.17 | 400.2 | 971 | 971 | 31,108 | 29,153 | 354,476 | 0.52 |
| 15 | E 1st St (K/Pappas) | 25 | 0.35 | 483.8 | 6,104 | 6,104 | 402,577 | 377,270 | 2,228,135 | 0.52 |
| 16 | W 1st St (Pappas/Dorchester) | 25 | 0.08 | 388.5 | 8,949 | 8,949 | 134,890 | 126,410 | 3,266,243 | 0.52 |
| 17 | W 1st St (D/Papps) | 25 | 0.29 | 485.3 | 1,110 | 1,110 | 60,648 | 56,835 | 405,115 | 0.52 |
| 18 | L St (E 1st/E 2nd) | 30 | 0.06 | 510.4 | 18,730 | 18,730 | 211,745 | 198,434 | 6,836,322 | 0.52 |
| 19 | E 2nd St (Dorchester/L) | 25 | 0.41 | 490.3 | 902 | 902 | 69,667 | 65,287 | 329,156 | 0.52 |
| 20 | E 2nd St (L/M) | 25 | 0.11 | 572.6 | 694 | 694 | 14,378 | 13,474 | 253,197 | 0.52 |
| 21 | L St (E 2nd/E 3rd) | 30 | 0.06 | 496.4 | 18,730 | 18,730 | 211,745 | 198,434 | 6,836,322 | 0.52 |
| 22 | E 3rd St (Dorchester/L) | 25 | 0.46 | 521.4 | 1,179 | 1,179 | 102,213 | 95,787 | 430,435 | 0.52 |
| 23 | E 3rd St (L/M) | 25 | 0.11 | 707.4 | 832 | 832 | 17,253 | 16,169 | 303,837 | 0.52 |
| 24 | L St (E 3rd/E Broadway) | 30 | 0.06 | 555.2 | 18,105 | 18,105 | 204,687 | 191,820 | 6,608,445 | 0.52 |
| 25 | E Broadway (Dorchester/L) | 25 | 0.51 | 518.8 | 8,879 | 8,879 | 853,255 | 799,616 | 3,240,923 | 0.52 |
| 26 | E Broadway (L/Farragut) | 25 | 0.53 | 491.2 | 5,411 | 5,411 | 540,343 | 506,374 | 1,974,938 | 0.52 |
| 27 | L St (E Broadway/E 5th) | 30 | 0.12 | 433.4 | 14,914 | 14,914 | 337,224 | 316,025 | 5,443,738 | 0.52 |
| 28 | E 5th St (G/L) | 25 | 0.45 | 584.9 | 1,249 | 1,249 | 105,873 | 99,217 | 455,755 | 0.52 |
| 29 | E 5th St (L/Farragut) | 25 | 0.53 | 498.7 | 1,665 | 1,665 | 166,259 | 155,807 | 607,673 | 0.52 |
| 30 | L St (E 5th/E 8th) | 30 | 0.17 | 470.1 | 13,458 | 13,458 | 431,072 | 403,973 | 4,912,024 | 0.52 |
| 31 | E 8th St (Dorchester/L) | 25 | 0.85 | 482.4 | 1,595 | 1,595 | 255,532 | 239,468 | 582,353 | 0.52 |
| 32 | E 8th St (L/Day) | 25 | 0.28 | 519.4 | 1,249 | 1,249 | 65,876 | 61,735 | 455,755 | 0.52 |
| 33 | L St (E 8th/Columbia) | 30 | 0.13 | 497.6 | 12,001 | 12,001 | 293,960 | 275,480 | 4,380,310 | 0.52 |
| 34 | Columbia Rd (G/L) | 25 | 0.47 | 481.9 | 763 | 763 | 67,576 | 63,327 | 278,517 | 0.52 |
| 35 | Columbia Rd (L/O) | 25 | 0.35 | 481.8 | 763 | 763 | 50,322 | 47,159 | 278,517 | 0.52 |
| 36 | L St (Columbia/Day) | 30 | 0.01 | 427.8 | 11,377 | 11,377 | 21,436 | 20,088 | 4,152,433 | 0.52 |
| 37 | Day Blvd (G/L) | 30 | 0.47 | 431.6 | 21,227 | 21,227 | 1,879,828 | 1,761,653 | 7,747,832 | 0.52 |
| 38 | Day Blvd (L/O) | 30 | 0.35 | 431.2 | 10,544 | 10,544 | 695,361 | 651,648 | 3,848,596 | 0.52 |
| 39 | Elkin Drwy (Summer) [BD] | 15 | 0.1 | 625.6 | 0 | 0 | 0 | 0 | 0 | 0.52 |
| 40 | M St Drwy (E 1st) [BD] | 15 | 0.1 | 625.6 | 0 | 0 | 0 | 0 | 0 | 0.52 |
| | | | | | | VMT (per year) | 12,063,600 | 11,305,228 | | |

**Weekday**

| Period Volume (vehicles) | Peak Traffic Data Average Delay (sec) | Peak Traffic Data Adjusted Delay (veh-sec) | Off-Peak Traffic Data Period Volume (vehicles) | Off-Peak Traffic Data Average Delay (sec) | Off-Peak Traffic Data Adjusted Delay (veh-sec) | Link Emissions $CO_2$ (grams) |
|---|---|---|---|---|---|---|
| 5,476,622 | 24 | 131,438,935 | 5,132,337 | 22 | 110,858,486 | 485,940,194 |
| 1,986,746 | 18 | 36,456,790 | 1,861,850 | 17 | 30,748,458 | 201,953,942 |
| 1,320,140 | 119 | 156,964,700 | 1,237,151 | 107 | 132,387,478 | 670,672,555 |
| 4,849,229 | 33 | 159,054,705 | 4,544,385 | 30 | 134,150,234 | 1,197,995,706 |
| 52,283 | 17 | 880,965 | 48,996 | 15 | 743,025 | 1,044,934 |
| 78,424 | 16 | 1,286,157 | 73,494 | 15 | 1,084,773 | 15,781,119 |
| 4,757,734 | 2 | 11,180,675 | 4,458,641 | 2 | 9,430,027 | 512,525,404 |
| 209,131 | 18 | 3,816,644 | 195,984 | 16 | 3,219,041 | 33,790,958 |
| 4,705,451 | 29 | 135,046,447 | 4,409,645 | 26 | 113,901,142 | 279,171,702 |
| 1,529,272 | 0 | 0 | 1,433,135 | 0 | 0 | 566,977,930 |
| 143,778 | 9 | 1,236,488 | 134,739 | 8 | 1,042,881 | 16,180,352 |
| 1,555,413 | 21 | 32,819,215 | 1,457,633 | 19 | 27,680,447 | 166,627,156 |
| 993,373 | 64 | 63,675,210 | 930,925 | 58 | 53,705,072 | 97,631,190 |
| 182,990 | 7 | 1,280,928 | 171,486 | 6 | 1,080,363 | 24,116,136 |
| 1,150,221 | 1 | 1,150,221 | 1,077,913 | 1 | 970,122 | 377,301,213 |
| 1,686,120 | 0 | 590,142 | 1,580,123 | 0 | 497,739 | 101,507,973 |
| 209,131 | 10 | 2,122,681 | 195,984 | 9 | 1,790,316 | 57,013,510 |
| 3,529,088 | 9 | 31,761,795 | 3,307,234 | 8 | 26,788,596 | 209,347,345 |
| 169,919 | 9 | 1,554,759 | 159,237 | 8 | 1,311,318 | 66,166,005 |
| 130,707 | 8 | 1,091,403 | 122,490 | 8 | 920,513 | 15,948,026 |
| 3,529,088 | 1 | 2,823,271 | 3,307,234 | 1 | 2,381,209 | 203,616,451 |
| 222,202 | 10 | 2,277,569 | 208,233 | 9 | 1,920,952 | 103,235,555 |
| 156,848 | 8 | 1,176,363 | 146,988 | 7 | 992,170 | 23,644,074 |
| 3,411,452 | 59 | 201,957,962 | 3,196,993 | 53 | 170,335,784 | 220,146,476 |
| 1,673,049 | 23 | 39,149,353 | 1,567,874 | 21 | 33,019,425 | 857,541,793 |
| 1,019,514 | 30 | 30,228,602 | 955,423 | 27 | 25,495,468 | 514,192,821 |
| 2,810,200 | 28 | 79,388,149 | 2,633,538 | 25 | 66,957,710 | 283,110,320 |
| 235,273 | 20 | 4,670,160 | 220,482 | 18 | 3,938,916 | 119,947,837 |
| 313,697 | 22 | 6,917,013 | 293,976 | 20 | 5,833,961 | 160,601,939 |
| 2,535,715 | 18 | 45,008,947 | 2,376,309 | 16 | 37,961,535 | 392,524,257 |
| 300,626 | 12 | 3,517,325 | 281,727 | 11 | 2,966,589 | 238,774,196 |
| 235,273 | 11 | 2,623,289 | 220,482 | 10 | 2,212,540 | 66,279,510 |
| 2,261,231 | 5 | 11,758,400 | 2,119,080 | 5 | 9,917,293 | 283,362,728 |
| 143,778 | 10 | 1,480,910 | 134,739 | 9 | 1,249,032 | 63,085,178 |
| 143,778 | 8 | 1,150,221 | 134,739 | 7 | 970,122 | 46,964,346 |
| 2,143,594 | 0 | 107,180 | 2,008,838 | 0 | 90,398 | 17,762,945 |
| 3,999,633 | 2 | 7,599,304 | 3,748,199 | 2 | 6,409,420 | 1,571,833,634 |
| 1,986,746 | 1 | 2,086,083 | 1,861,850 | 1 | 1,759,449 | 580,857,115 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | | |
| | Arterial | 1,217,328,962 | | | 1,026,722,000 | 11,954.56 **Total (tons/year)** |

| | Weekday | Total |
|---|---|---|
| **VMT per year** | **23,368,828.82** | **23,368,828.82** |

| | Weekday (g/s) | Weekday (g/year) | Weekday (tons/year) | Total (g/s) | Total (g/year) | Total (tons/year) |
|---|---|---|---|---|---|---|
| Peak Period | 1.1328 | 1,379,020,655 | **1,520.11** | | | **1,520.11** |
| Off-Peak Period | 1.1328 | 1,163,096,328 | **1,282.09** | | | **1,282.09** |
| Total | | | **2,802.20** | Total (Including Link) | | **14,756.76** |

# L Street Redevelopment

## Weekday Traffic

| Link No. | Roadway Description | 2017 Roadway S.A.F. | 2017 Roadway ADT (veh/day) | 2017 Seasonal ADT (veh/day) | 2030 Roadway ADT (veh/day) | 2030 Seasonal ADT (veh/day) | 2030 Traffic Increase (existing) | 2030 Roadway ADT (veh/day) | 2030 Seasonal ADT (veh/day) | 2030 Traffic Increase (existing) | 2030 Traffic Increase (no-build) | 2030 Roadway ADT (veh/day) | 2030 Seasonal ADT (veh/day) | 2030 Traffic Increase (existing) | 2030 Traffic Increase (no-build) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Summer St (Pumphouse/Drydock) | 100% | 29,066 | 29,066 | 32,465 | 32,465 | 12% | 36,044 | 36,044 | 24% | 11% | 36,044 | 36,044 | 24% | 11% |
| 2 | Drydock Ave (Summer/Harbor) | 100% | 10,544 | 10,544 | 13,999 | 13,999 | 33% | 13,999 | 13,999 | 33% | 0% | 13,999 | 13,999 | 33% | 0% |
| 3 | Pappas Way (Summer/W 1st)) | 100% | 7,006 | 7,006 | 7,908 | 7,908 | 13% | 7,908 | 7,908 | 13% | 0% | 7,908 | 7,908 | 13% | 0% |
| 4 | Summer St (Drydock/Freight Road) | 100% | 25,736 | 25,736 | 28,649 | 28,649 | 11% | 32,229 | 32,229 | 25% | 12% | 32,229 | 32,229 | 25% | 12% |
| 5 | Fedex Drwy (Summer) | 100% | 277 | 277 | 652 | 652 | 135% | 652 | 652 | 135% | 0% | 652 | 652 | 135% | 0% |
| 6 | Freight Road (Summer) | 100% | 416 | 416 | 430 | 430 | 3% | 430 | 430 | 3% | 0% | 430 | 430 | 3% | 0% |
| 7 | Summer St (Freight/Elkins) | 100% | 25,250 | 25,250 | 27,970 | 27,970 | 11% | 31,549 | 31,549 | 25% | 13% | 31,549 | 31,549 | 25% | 13% |
| 8 | Elkins/K St (Summer/E 1st) | 100% | 1,110 | 1,110 | 1,179 | 1,179 | 6% | 1,179 | 1,179 | 6% | 0% | 1,179 | 1,179 | 6% | 0% |
| 9 | Summer St(Elkins/E 1st) | 100% | 24,973 | 24,973 | 27,595 | 27,595 | 11% | 29,218 | 29,218 | 17% | 6% | 29,218 | 29,218 | 17% | 6% |
| 10 | E 1st St (M/Farragut) | 100% | 8,116 | 8,116 | 8,851 | 8,851 | 9% | 8,851 | 8,851 | 9% | 0% | 8,851 | 8,851 | 9% | 0% |
| 11 | M St (E 1st/Broadway) | 100% | 763 | 763 | 805 | 805 | 5% | 791 | 791 | 4% | -2% | 791 | 791 | 4% | -2% |
| 12 | E 1st St (Summer/M) | 100% | 8,255 | 8,255 | 9,004 | 9,004 | 9% | 9,767 | 9,767 | 18% | 8% | 9,767 | 9,767 | 18% | 8% |
| 13 | E 1st St (K/Summer) | 100% | 5,272 | 5,272 | 5,758 | 5,758 | 9% | 6,479 | 6,479 | 23% | 13% | 6,479 | 6,479 | 23% | 13% |
| 14 | K St (E 1st/Broadway) | 100% | 971 | 971 | 1,041 | 1,041 | 7% | 1,041 | 1,041 | 7% | 0% | 1,041 | 1,041 | 7% | 0% |
| 15 | E 1st St (K/Pappas) | 100% | 6,104 | 6,104 | 6,576 | 6,576 | 8% | 7,298 | 7,298 | 20% | 11% | 7,298 | 7,298 | 20% | 11% |
| 16 | W 1st St (Pappas/Dorchester) | 100% | 8,949 | 8,949 | 9,642 | 9,642 | 8% | 10,225 | 10,225 | 14% | 6% | 10,225 | 10,225 | 14% | 6% |
| 17 | W 1st St (D/Papps) | 100% | 1,110 | 1,110 | 1,193 | 1,193 | 8% | 1,332 | 1,332 | 20% | 12% | 1,332 | 1,332 | 20% | 12% |
| 18 | L St (E 1st/E 2nd) | 100% | 18,730 | 18,730 | 20,616 | 20,616 | 10% | 22,295 | 22,295 | 19% | 8% | 22,295 | 22,295 | 19% | 8% |
| 19 | E 2nd St (Dorchester/L) | 100% | 902 | 902 | 971 | 971 | 8% | 971 | 971 | 8% | 0% | 971 | 971 | 8% | 0% |
| 20 | E 2nd St (L/M) | 100% | 694 | 694 | 735 | 735 | 6% | 735 | 735 | 6% | 0% | 735 | 735 | 6% | 0% |
| 21 | L St (E 2nd/E 3rd) | 100% | 18,730 | 18,730 | 20,603 | 20,603 | 10% | 22,281 | 22,281 | 19% | 8% | 22,281 | 22,281 | 19% | 8% |
| 22 | E 3rd St (Dorchester/L) | 100% | 1,179 | 1,179 | 1,263 | 1,263 | 7% | 1,263 | 1,263 | 7% | 0% | 1,263 | 1,263 | 7% | 0% |
| 23 | E 3rd St (L/M) | 100% | 832 | 832 | 902 | 902 | 8% | 902 | 902 | 8% | 0% | 902 | 902 | 8% | 0% |
| 24 | L St (E 3rd/E Broadway) | 100% | 18,105 | 18,105 | 19,951 | 19,951 | 10% | 21,629 | 21,629 | 19% | 8% | 21,629 | 21,629 | 19% | 8% |
| 25 | E Broadway (Dorchester/L) | 100% | 8,879 | 8,879 | 9,573 | 9,573 | 8% | 9,573 | 9,573 | 8% | 0% | 9,573 | 9,573 | 8% | 0% |
| 26 | E Broadway (L/Farragut) | 100% | 5,411 | 5,411 | 6,410 | 6,410 | 18% | 6,271 | 6,271 | 16% | -2% | 6,271 | 6,271 | 16% | -2% |
| 27 | L St (E Broadway/E 5th) | 100% | 14,914 | 14,914 | 16,385 | 16,385 | 10% | 18,064 | 18,064 | 21% | 10% | 18,064 | 18,064 | 21% | 10% |
| 28 | E 5th St (G/L) | 100% | 1,249 | 1,249 | 1,318 | 1,318 | 6% | 1,318 | 1,318 | 6% | 0% | 1,318 | 1,318 | 6% | 0% |
| 29 | E 5th St (L/Farragut) | 100% | 1,665 | 1,665 | 1,776 | 1,776 | 7% | 1,776 | 1,776 | 7% | 0% | 1,776 | 1,776 | 7% | 0% |
| 30 | L St (E 5th/E 8th) | 100% | 13,458 | 13,458 | 14,803 | 14,803 | 10% | 16,482 | 16,482 | 22% | 11% | 16,482 | 16,482 | 22% | 11% |
| 31 | E 8th St (Dorchester/L) | 100% | 1,595 | 1,595 | 1,720 | 1,720 | 8% | 1,720 | 1,720 | 8% | 0% | 1,720 | 1,720 | 8% | 0% |
| 32 | E 8th St (L/Day) | 100% | 1,249 | 1,249 | 1,332 | 1,332 | 7% | 1,332 | 1,332 | 7% | 0% | 1,332 | 1,332 | 7% | 0% |
| 33 | L St (E 8th/Columbia) | 100% | 12,001 | 12,001 | 13,319 | 13,319 | 11% | 14,998 | 14,998 | 25% | 13% | 14,998 | 14,998 | 25% | 13% |
| 34 | Columbia Rd (G/L) | 100% | 763 | 763 | 721 | 721 | -5% | 721 | 721 | -5% | 0% | 721 | 721 | -5% | 0% |
| 35 | Columbia Rd (L/O) | 100% | 763 | 763 | 652 | 652 | -15% | 652 | 652 | -15% | 0% | 652 | 652 | -15% | 0% |
| 36 | L St (Columbia/Day) | 100% | 11,377 | 11,377 | 12,570 | 12,570 | 10% | 14,248 | 14,248 | 25% | 13% | 14,248 | 14,248 | 25% | 13% |
| 37 | Day Blvd (G/L) | 100% | 21,227 | 21,227 | 23,086 | 23,086 | 9% | 24,765 | 24,765 | 17% | 7% | 24,765 | 24,765 | 17% | 7% |
| 38 | Day Blvd (L/O) | 100% | 10,544 | 10,544 | 11,252 | 11,252 | 7% | 11,252 | 11,252 | 7% | 0% | 11,252 | 11,252 | 7% | 0% |
| 39 | Elkin Drwy (Summer) [BD] | 100% | 0 | 0 | 0 | 0 | #DIV/0! | 5,314 | 5,314 | #DIV/0! | #DIV/0! | 5,314 | 5,314 | #DIV/0! | #DIV/0! |
| 40 | M St Drwy (E 1st) [BD] | 100% | 0 | 0 | 0 | 0 | #DIV/0! | 777 | 777 | #DIV/0! | #DIV/0! | 777 | 777 | #DIV/0! | #DIV/0! |

## L Street Redevelopment
### Weekday Vehicle Delay

| Link No. | Description | Directions | 2017 Delay By Approach NB or EB (sec) | 2017 Delay By Approach SB or WB (sec) | 2017 Adjusted Delay * NB or EB (sec) | 2017 Adjusted Delay * SB or WB (sec) | 2017 Combined Delay (sec) | 2030 Delay By Approach NB or EB (sec) | 2030 Delay By Approach SB or WB (sec) | 2030 Adjusted Delay * NB or EB (sec) | 2030 Adjusted Delay * SB or WB (sec) | 2030 Combined Delay (sec) | 2030 Delay By Approach NB or EB (sec) | 2030 Delay By Approach SB or WB (sec) | 2030 Adjusted Delay * NB or EB (sec) | 2030 Adjusted Delay * SB or WB (sec) | 2030 Combined Delay (sec) | 2030 Delay By Approach NB or EB (sec) | 2030 Delay By Approach SB or WB (sec) | 2030 Adjusted Delay * NB or EB (sec) | 2030 Adjusted Delay * SB or WB (sec) | 2030 Combined Delay (sec) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Summer St (Pumphouse/Drydock) | 2 | 0 | 48 | 0 | 48 | 24 | 0 | 65.2 | 0 | 65.2 | 32.6 | 0 | 97.4 | 0 | 97.4 | 48.7 | 0 | 97.4 | 0 | 97.4 | 48.7 |
| 2 | Drydock Ave (Summer/Harbor) | 2 | 0 | 36.7 | 0 | 36.7 | 18.35 | 0 | 83.1 | 0 | 83.1 | 41.55 | 0 | 83.1 | 0 | 83.1 | 41.55 | 0 | 83.1 | 0 | 83.1 | 41.55 |
| 3 | Pappas Way (Summer/W 1st)) | 2 | 28.7 | 209.1 | 28.7 | 209.1 | 118.9 | 55 | 367.3 | 55 | 367.3 | 211.15 | 55 | 460.2 | 55 | 460.2 | 257.6 | 55 | 460.2 | 55 | 460.2 | 257.6 |
| 4 | Summer St (Drydock/Freight Road) | 2 | 61.6 | 4 | 61.6 | 4 | 32.8 | 86.9 | 7.4 | 86.9 | 7.4 | 47.15 | 165.3 | 8.3 | 165.3 | 8.3 | 86.8 | 165.3 | 8.3 | 165.3 | 8.3 | 86.8 |
| 5 | Fedex Drwy (Summer) | 2 | 33.7 | 0 | 33.7 | 0 | 16.85 | 34.3 | 0 | 34.3 | 0 | 17.15 | 34.3 | 0 | 34.3 | 0 | 17.15 | 34.3 | 0 | 34.3 | 0 | 17.15 |
| 6 | Freight Road (Summer) | 2 | 0 | 32.8 | 0 | 32.8 | 16.4 | 0 | 34.4 | 0 | 34.4 | 17.2 | 0 | 34.4 | 0 | 34.4 | 17.2 | 0 | 34.4 | 0 | 34.4 | 17.2 |
| 7 | Summer St (Freight/Elkins) | 2 | 4.7 | 0 | 4.7 | 0 | 2.35 | 4.6 | 0 | 4.6 | 0 | 2.3 | 5 | 1.9 | 5 | 1.9 | 3.45 | 5 | 56.3 | 5 | 56.3 | 30.65 |
| 8 | Elkins/K St (Summer/E 1st) | 2 | 26 | 10.5 | 26 | 10.5 | 18.25 | 25 | 10.8 | 25 | 10.8 | 17.9 | 53 | 11.2 | 53 | 11.2 | 32.1 | 60.4 | 11.2 | 60.4 | 11.2 | 35.8 |
| 9 | Summer St(Elkins/E 1st) | 2 | 0 | 57.4 | 0 | 57.4 | 28.7 | 0 | 130.5 | 0 | 130.5 | 65.25 | 0 | 171.6 | 0 | 171.6 | 85.8 | 12 | 24.5 | 12 | 24.5 | 18.25 |
| 10 | E 1st St (M/Farragut) | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | M St (E 1st/Broadway) | 2 | 17.2 | 0 | 17.2 | 0 | 8.6 | 18.7 | 0 | 18.7 | 0 | 9.35 | 25.7 | 0 | 25.7 | 0 | 12.85 | 25.7 | 0 | 25.7 | 0 | 12.85 |
| 12 | E 1st St (Summer/M) | 2 | 0 | 42.2 | 0 | 42.2 | 21.1 | 0 | 41.8 | 0 | 41.8 | 20.9 | 0.5 | 82.8 | 0.5 | 82.8 | 41.65 | 0.5 | 54.6 | 0.5 | 54.6 | 27.55 |
| 13 | E 1st St (K/Summer) | 1 | 64.1 | 0 | 64.1 | 0 | 64.1 | 63.8 | 0 | 63.8 | 0 | 63.8 | 118 | 0 | 118 | 0 | 118 | 103 | 0 | 103 | 0 | 103 |
| 14 | K St (E 1st/Broadway) | 2 | 14 | 0 | 14 | 0 | 7 | 14.7 | 0 | 14.7 | 0 | 7.35 | 15.7 | 0 | 15.7 | 0 | 7.85 | 15.7 | 0 | 15.7 | 0 | 7.85 |
| 15 | E 1st St (K/Pappas) | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0.9 | 0 | 0.9 | 0 | 0.9 | 0.9 | 0 | 0.9 | 0 | 0.9 |
| 16 | W 1st St (Pappas/Dorchester) | 2 | 0.7 | 0 | 0.7 | 0 | 0.35 | 0.8 | 0 | 0.8 | 0 | 0.4 | 0.8 | 0 | 0.8 | 0 | 0.4 | 0.8 | 0 | 0.8 | 0 | 0.4 |
| 17 | W 1st St (D/Papps) | 2 | 20.3 | 0 | 20.3 | 0 | 10.15 | 23 | 0 | 23 | 0 | 11.5 | 24.5 | 0 | 24.5 | 0 | 12.25 | 24.5 | 0 | 24.5 | 0 | 12.25 |
| 18 | L St (E 1st/E 2nd) | 2 | 17.3 | 0.7 | 17.3 | 0.7 | 9 | 20.7 | 0.8 | 20.7 | 0.8 | 10.75 | 22.6 | 0.9 | 22.6 | 0.9 | 11.75 | 22.4 | 0.9 | 22.4 | 0.9 | 11.65 |
| 19 | E 2nd St (Dorchester/L) | 2 | 18.3 | 0 | 18.3 | 0 | 9.15 | 21.9 | 0 | 21.9 | 0 | 10.95 | 25.2 | 0 | 25.2 | 0 | 12.6 | 25.2 | 0 | 25.2 | 0 | 12.6 |
| 20 | E 2nd St (L/M) | 2 | 0 | 16.7 | 0 | 16.7 | 8.35 | 0 | 19.7 | 0 | 19.7 | 9.85 | 0 | 22.2 | 0 | 22.2 | 11.1 | 0 | 22.2 | 0 | 22.2 | 11.1 |
| 21 | L St (E 2nd/E 3rd) | 2 | 1.1 | 0.5 | 1.1 | 0.5 | 0.8 | 1.6 | 0.6 | 1.6 | 0.6 | 1.1 | 2 | 0.7 | 2 | 0.7 | 1.35 | 2 | 0.7 | 2 | 0.7 | 1.35 |
| 22 | E 3rd St (Dorchester/L) | 2 | 20.5 | 0 | 20.5 | 0 | 10.25 | 25.3 | 0 | 25.3 | 0 | 12.65 | 30 | 0 | 30 | 0 | 15 | 30 | 0 | 30 | 0 | 15 |
| 23 | E 3rd St (L/M) | 2 | 0 | 15 | 0 | 15 | 7.5 | 0 | 16.8 | 0 | 16.8 | 8.4 | 0 | 18.5 | 0 | 18.5 | 9.25 | 0 | 18.5 | 0 | 18.5 | 9.25 |
| 24 | L St (E 3rd/E Broadway) | 2 | 0.6 | 117.8 | 0.6 | 117.8 | 59.2 | 0.7 | 190.6 | 0.7 | 190.6 | 95.65 | 0.9 | 249 | 0.9 | 249 | 124.95 | 0.9 | 55.6 | 0.9 | 55.6 | 28.25 |
| 25 | E Broadway (Dorchester/L) | 2 | 46.8 | 0 | 46.8 | 0 | 23.4 | 48.4 | 0 | 48.4 | 0 | 24.2 | 48.4 | 0 | 48.4 | 0 | 24.2 | 76.3 | 0 | 76.3 | 0 | 38.15 |
| 26 | E Broadway (L/Farragut) | 2 | 0 | 59.3 | 0 | 59.3 | 29.65 | 0 | 62.9 | 0 | 62.9 | 31.45 | 0 | 62.9 | 0 | 62.9 | 31.45 | 0 | 132.8 | 0 | 132.8 | 66.4 |
| 27 | L St (E Broadway/E 5th) | 2 | 32 | 24.5 | 32 | 24.5 | 28.25 | 36.2 | 29.2 | 36.2 | 29.2 | 32.7 | 42.2 | 39.4 | 42.2 | 39.4 | 40.8 | 30.4 | 39.4 | 30.4 | 39.4 | 34.9 |
| 28 | E 5th St (G/L) | 2 | 39.7 | 0 | 39.7 | 0 | 19.85 | 40.3 | 0 | 40.3 | 0 | 20.15 | 40.3 | 0 | 40.3 | 0 | 20.15 | 40.3 | 0 | 40.3 | 0 | 20.15 |
| 29 | E 5th St (L/Farragut) | 2 | 0 | 44.1 | 0 | 44.1 | 22.05 | 0 | 45.4 | 0 | 45.4 | 22.7 | 0 | 45.4 | 0 | 45.4 | 22.7 | 0 | 45.4 | 0 | 45.4 | 22.7 |
| 30 | L St (E 5th/E 8th) | 2 | 26.2 | 9.3 | 26.2 | 9.3 | 17.75 | 30.9 | 10.2 | 30.9 | 10.2 | 20.55 | 39.5 | 11.8 | 39.5 | 11.8 | 25.65 | 39.5 | 11.8 | 39.5 | 11.8 | 25.65 |
| 31 | E 8th St (Dorchester/L) | 2 | 23.4 | 0 | 23.4 | 0 | 11.7 | 23.6 | 0 | 23.6 | 0 | 11.8 | 23.6 | 0 | 23.6 | 0 | 11.8 | 23.6 | 0 | 23.6 | 0 | 11.8 |
| 32 | E 8th St (L/Day) | 2 | 0 | 22.3 | 0 | 22.3 | 11.15 | 0 | 22.3 | 0 | 22.3 | 11.15 | 0 | 22.3 | 0 | 22.3 | 11.15 | 0 | 22.3 | 0 | 22.3 | 11.15 |
| 33 | L St (E 8th/Columbia) | 2 | 9.9 | 0.5 | 9.9 | 0.5 | 5.2 | 10.8 | 0.1 | 10.8 | 0.1 | 5.45 | 12 | 0.1 | 12 | 0.1 | 6.05 | 12 | 0.1 | 12 | 0.1 | 6.05 |
| 34 | Columbia Rd (G/L) | 2 | 20.6 | 0 | 20.6 | 0 | 10.3 | 23.3 | 0 | 23.3 | 0 | 11.65 | 29.1 | 0 | 29.1 | 0 | 14.55 | 29.1 | 0 | 29.1 | 0 | 14.55 |
| 35 | Columbia Rd (L/O) | 2 | 0 | 16 | 0 | 16 | 8 | 0 | 17.5 | 0 | 17.5 | 8.75 | 0 | 20.5 | 0 | 20.5 | 10.25 | 0 | 20.5 | 0 | 20.5 | 10.25 |
| 36 | L St (Columbia/Day) | 2 | 0.1 | 0 | 0.1 | 0 | 0.05 | 0.1 | 0 | 0.1 | 0 | 0.05 | 0.1 | 0 | 0.1 | 0 | 0.05 | 0.1 | 0 | 0.1 | 0 | 0.05 |
| 37 | Day Blvd (G/L) | 2 | 3.8 | 0 | 3.8 | 0 | 1.9 | 4.1 | 0 | 4.1 | 0 | 2.05 | 4.5 | 0 | 4.5 | 0 | 2.25 | 4.5 | 0 | 4.5 | 0 | 2.25 |
| 38 | Day Blvd (L/O) | 2 | 0 | 2.1 | 0 | 2.1 | 1.05 | 0 | 2.1 | 0 | 2.1 | 1.05 | 0 | 2.1 | 0 | 2.1 | 1.05 | 0 | 2.1 | 0 | 2.1 | 1.05 |
| 39 | Elkin Drwy (Summer) [BD] | 2 | | | 0 | 0 | 0 | | | 0 | 0 | 0 | 0 | 17.5 | 0 | 17.5 | 8.75 | 0 | 100.7 | 0 | 100.7 | 50.35 |
| 40 | M St Drwy (E 1st) [BD] | 2 | | | 0 | 0 | 0 | | | 0 | 0 | 0 | 0 | 11.3 | 0 | 11.3 | 5.65 | 0 | 11.3 | 0 | 11.3 | 5.65 |

### PM PEAK CONDITION
**DELAY BY APPROACH (seconds)**

| No. | Description | 2017 Existing EB | 2017 Existing WB | 2017 Existing NB | 2017 Existing SB | 2030 No Build EB | 2030 No Build WB | 2030 No Build NB | 2030 No Build SB | 2030 Build EB | 2030 Build WB | 2030 Build NB | 2030 Build SB | 2030 Build-Mit EB | 2030 Build-Mit WB | 2030 Build-Mit NB | 2030 Build-Mit SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Summer Street & Pappas Way/Drydock Avenue | 28.7 | 36.7 | 61.6 | 48 | 55 | 83.1 | 86.9 | 65.2 | 55 | 83.1 | 165.3 | 97.4 | 55 | 83.1 | 165.3 | 97.4 |
| 2 | Summer Street & FedEx/Dedicated Freight Corridor | 33.7 | 32.8 | 4.7 | 4 | 34.3 | 34.4 | 4.6 | 7.4 | 34.3 | 34.4 | 5 | 8.3 | 34.3 | 34.4 | 5 | 8.3 |
| 3 | Summer Street & Elkins Street | 26 | | 0 | 0 | 25 | | 0 | 0 | 53 | 17.5 | 0 | 1.9 | 60.4 | 100.7 | 12 | 56.3 |
| 4 | L Street/Summer Street & East 1st Street | 64.1 | 42.2 | 17.3 | 57.4 | 63.8 | 41.8 | 20.7 | 130.5 | 118 | 82.8 | 22.6 | 171.6 | 103 | 54.6 | 22.4 | 24.5 |
| 5 | L Street & E 2nd Street | 18.3 | 16.7 | 1.1 | 0.7 | 21.9 | 19.7 | 1.6 | 0.8 | 25.2 | 22.2 | 2 | 0.9 | 25.2 | 22.2 | 2 | 0.9 |
| 6 | L Street & E 3rd Street | 20.5 | 15 | 0.6 | 0.5 | 25.3 | 16.8 | 0.7 | 0.6 | 30 | 18.5 | 0.9 | 0.7 | 30 | 18.5 | 0.9 | 0.7 |
| 7 | L Street & E Broadway | 46.8 | 59.3 | 32 | 117.8 | 48.4 | 62.9 | 36.2 | 190.6 | 48.4 | 62.9 | 42.2 | 249 | 76.3 | 132.8 | 30.4 | 55.6 |
| 8 | K Street & East 1st Street | 1 | 0 | 14 | 10.5 | 1 | 0 | 14.7 | 10.8 | 0.9 | 0 | 15.7 | 11.2 | 0.9 | 0 | 15.7 | 11.2 |
| 9 | M Street & East 1st Street | 0 | 0 | 17.2 | | 0 | 0 | 18.7 | | 0.5 | 0 | 25.7 | 11.3 | 0.5 | 0 | 25.7 | 11.3 |
| 10 | West 1st Street & East 1st Street & Pappas Way | 0.7 | 0 | 20.3 | 209.1 | 0.8 | 0 | 23 | 367.3 | 0.8 | 0 | 24.5 | 460.2 | 0.8 | 0 | 24.5 | 460.2 |
| 11 | L Street & E 5th Street | 39.7 | 44.1 | 26.2 | 24.5 | 40.3 | 45.4 | 30.9 | 29.2 | 40.3 | 45.4 | 39.5 | 39.4 | 40.3 | 45.4 | 39.5 | 39.4 |
| 12 | L Street & E 8th Street | 23.4 | 22.3 | 9.9 | 9.3 | 23.6 | 22.3 | 10.8 | 10.2 | 23.6 | 22.3 | 12 | 11.8 | 23.6 | 22.3 | 12 | 11.8 |
| 13 | L Street | 20.6 | 16 | 0.1 | 0.5 | 23.3 | 17.5 | 0.1 | 0.1 | 29.1 | 20.5 | 0.1 | 0.1 | 29.1 | 20.5 | 0.1 | 0.1 |
| 14 | Day Blvd Ped | 3.8 | 2.1 | | 0 | 4.1 | 2.1 | | 0 | 4.5 | 2.1 | | 0 | 4.5 | 2.1 | | 0 |

# L Street Redevelopment

## Weekday Average Daily Traffic (ADT) for Mesoscale Roadway Network

| | Roadway Segments | Speed Limit (mph) | 2017 Existing Volume (ADT) | 2030 No-Build Volume (ADT) | 2030 Build Volume (ADT) | 2030 Build-Mit Volume (ADT) | K Factor | S.A.F. | Unadjusted PM Peak Hour 2017 Existing | 2030 No-Build | 2030 Build | 2030 Build-Mit |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 7.2% | 1.00 | | | | |
| 1 | Summer St (Pumphouse/Drydock) | 30 | 29,066 | 32,465 | 36,044 | 36,044 | | | 2,095 | 2,340 | 2,598 | 2,598 |
| 2 | Drydock Ave (Summer/Harbor) | 25 | 10,544 | 13,999 | 13,999 | 13,999 | | | 760 | 1,009 | 1,009 | 1,009 |
| 3 | Pappas Way (Summer/W 1st)) | 25 | 7,006 | 7,908 | 7,908 | 7,908 | | | 505 | 570 | 570 | 570 |
| 4 | Summer St (Drydock/Freight Road) | 30 | 25,736 | 28,649 | 32,229 | 32,229 | | | 1,855 | 2,065 | 2,323 | 2,323 |
| 5 | Fedex Drwy (Summer) | 25 | 277 | 652 | 652 | 652 | | | 20 | 47 | 47 | 47 |
| 6 | Freight Road (Summer) | 25 | 416 | 430 | 430 | 430 | | | 30 | 31 | 31 | 31 |
| 7 | Summer St (Freight/Elkins) | 30 | 25,250 | 27,970 | 31,549 | 31,549 | | | 1,820 | 2,016 | 2,274 | 2,274 |
| 8 | Elkins/K St (Summer/E 1st) | 25 | 1,110 | 1,179 | 1,179 | 1,179 | | | 80 | 85 | 85 | 85 |
| 9 | Summer St(Elkins/E 1st) | 30 | 24,973 | 27,595 | 29,218 | 29,218 | | | 1,800 | 1,989 | 2,106 | 2,106 |
| 10 | E 1st St (M/Farragut) | 30 | 8,116 | 8,851 | 8,851 | 8,851 | | | 585 | 638 | 638 | 638 |
| 11 | M St (E 1st/Broadway) | 25 | 763 | 805 | 791 | 791 | | | 55 | 58 | 57 | 57 |
| 12 | E 1st St (Summer/M) | 30 | 8,255 | 9,004 | 9,767 | 9,767 | | | 595 | 649 | 704 | 704 |
| 13 | E 1st St (K/Summer) | 25 | 5,272 | 5,758 | 6,479 | 6,479 | | | 380 | 415 | 467 | 467 |
| 14 | K St (E 1st/Broadway) | 25 | 971 | 1,041 | 1,041 | 1,041 | | | 70 | 75 | 75 | 75 |
| 15 | E 1st St (K/Pappas) | 25 | 6,104 | 6,576 | 7,298 | 7,298 | | | 440 | 474 | 526 | 526 |
| 16 | W 1st St (Pappas/Dorchester) | 25 | 8,949 | 9,642 | 10,225 | 10,225 | | | 645 | 695 | 737 | 737 |
| 17 | W 1st St (D/Papps) | 25 | 1,110 | 1,193 | 1,332 | 1,332 | | | 80 | 86 | 96 | 96 |
| 18 | L St (E 1st/E 2nd) | 30 | 18,730 | 20,616 | 22,295 | 22,295 | | | 1,350 | 1,486 | 1,607 | 1,607 |
| 19 | E 2nd St (Dorchester/L) | 25 | 902 | 971 | 971 | 971 | | | 65 | 70 | 70 | 70 |
| 20 | E 2nd St (L/M) | 25 | 694 | 735 | 735 | 735 | | | 50 | 53 | 53 | 53 |
| 21 | L St (E 2nd/E 3rd) | 30 | 18,730 | 20,603 | 22,281 | 22,281 | | | 1,350 | 1,485 | 1,606 | 1,606 |
| 22 | E 3rd St (Dorchester/L) | 25 | 1,179 | 1,263 | 1,263 | 1,263 | | | 85 | 91 | 91 | 91 |
| 23 | E 3rd St (L/M) | 25 | 832 | 902 | 902 | 902 | | | 60 | 65 | 65 | 65 |
| 24 | L St (E 3rd/E Broadway) | 30 | 18,105 | 19,951 | 21,629 | 21,629 | | | 1,305 | 1,438 | 1,559 | 1,559 |
| 25 | E Broadway (Dorchester/L) | 25 | 8,879 | 9,573 | 9,573 | 9,573 | | | 640 | 690 | 690 | 690 |
| 26 | E Broadway (L/Farragut) | 25 | 5,411 | 6,410 | 6,271 | 6,271 | | | 390 | 462 | 452 | 452 |
| 27 | L St (E Broadway/E 5th) | 30 | 14,914 | 16,385 | 18,064 | 18,064 | | | 1,075 | 1,181 | 1,302 | 1,302 |
| 28 | E 5th St (G/L) | 25 | 1,249 | 1,318 | 1,318 | 1,318 | | | 90 | 95 | 95 | 95 |
| 29 | E 5th St (L/Farragut) | 25 | 1,665 | 1,776 | 1,776 | 1,776 | | | 120 | 128 | 128 | 128 |
| 30 | L St (E 5th/E 8th) | 30 | 13,458 | 14,803 | 16,482 | 16,482 | | | 970 | 1,067 | 1,188 | 1,188 |
| 31 | E 8th St (Dorchester/L) | 25 | 1,595 | 1,720 | 1,720 | 1,720 | | | 115 | 124 | 124 | 124 |
| 32 | E 8th St (L/Day) | 25 | 1,249 | 1,332 | 1,332 | 1,332 | | | 90 | 96 | 96 | 96 |
| 33 | L St (E 8th/Columbia) | 30 | 12,001 | 13,319 | 14,998 | 14,998 | | | 865 | 960 | 1,081 | 1,081 |
| 34 | Columbia Rd (G/L) | 25 | 763 | 721 | 721 | 721 | | | 55 | 52 | 52 | 52 |
| 35 | Columbia Rd (L/O) | 25 | 763 | 652 | 652 | 652 | | | 55 | 47 | 47 | 47 |
| 36 | L St (Columbia/Day) | 30 | 11,377 | 12,570 | 14,248 | 14,248 | | | 820 | 906 | 1,027 | 1,027 |
| 37 | Day Blvd (G/L) | 30 | 21,227 | 23,086 | 24,765 | 24,765 | | | 1,530 | 1,664 | 1,785 | 1,785 |
| 38 | Day Blvd (L/O) | 30 | 10,544 | 11,252 | 11,252 | 11,252 | | | 760 | 811 | 811 | 811 |
| 39 | Elkin Drwy (Summer) [BD] | 15 | 0 | 0 | 5,314 | 5,314 | | | 0 | 0 | 383 | 383 |
| 40 | M St Drwy (E 1st) [BD] | 15 | 0 | 0 | 777 | 777 | | | 0 | 0 | 56 | 56 |

# L Street Redevelopment

## Weekday ATR Volumes

| Summer Street (06/07/2017) | | | | | Summer Street (06/08/2017) | | | | | Weekday Average | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Peak Period Data | | | | | Peak Period Data | | | | | Peak Period Data | |
| Begin Time | Volume | V/C Ratio | Hours | Volume | Begin Time | Volume | V/C Ratio | Hours | Volume | Begin Time | Volume | V/C Ratio | Hours | Volume |
| 12:00 AM | 204 | 0.06 | 0 | 0 | 12:00 AM | 333 | 0.11 | 0 | 0 | 12:00 AM | 269 | 0.08 | 0 | 0 |
| 1:00 AM | 72 | 0.02 | 0 | 0 | 1:00 AM | 147 | 0.05 | 0 | 0 | 1:00 AM | 110 | 0.03 | 0 | 0 |
| 2:00 AM | 56 | 0.02 | 0 | 0 | 2:00 AM | 86 | 0.03 | 0 | 0 | 2:00 AM | 71 | 0.02 | 0 | 0 |
| 3:00 AM | 62 | 0.02 | 0 | 0 | 3:00 AM | 91 | 0.03 | 0 | 0 | 3:00 AM | 77 | 0.02 | 0 | 0 |
| 4:00 AM | 179 | 0.06 | 0 | 0 | 4:00 AM | 209 | 0.07 | 0 | 0 | 4:00 AM | 194 | 0.06 | 0 | 0 |
| 5:00 AM | 675 | 0.21 | 0 | 0 | 5:00 AM | 752 | 0.24 | 0 | 0 | 5:00 AM | 714 | 0.23 | 0 | 0 |
| 6:00 AM | 1,213 | 0.38 | 0 | 0 | 6:00 AM | 1,265 | 0.40 | 1 | 1,265 | 6:00 AM | 1,239 | 0.39 | 0 | 0 |
| 7:00 AM | 1,741 | 0.55 | 1 | 1,741 | 7:00 AM | 1,352 | 0.43 | 1 | 1,352 | 7:00 AM | 1,547 | 0.49 | 1 | 1,547 |
| 8:00 AM | 1,601 | 0.51 | 1 | 1,601 | 8:00 AM | 1,445 | 0.46 | 1 | 1,445 | 8:00 AM | 1,523 | 0.48 | 1 | 1,523 |
| 9:00 AM | 1,267 | 0.40 | 1 | 1,267 | 9:00 AM | 1,367 | 0.43 | 1 | 1,367 | 9:00 AM | 1,317 | 0.42 | 1 | 1,317 |
| 10:00 AM | 1,085 | 0.34 | 0 | 0 | 10:00 AM | 1,123 | 0.36 | 0 | 0 | 10:00 AM | 1,104 | 0.35 | 0 | 0 |
| 11:00 AM | 1,003 | 0.32 | 0 | 0 | 11:00 AM | 1,143 | 0.36 | 0 | 0 | 11:00 AM | 1,073 | 0.34 | 0 | 0 |
| 12:00 PM | 1,035 | 0.33 | 0 | 0 | 12:00 PM | 1,146 | 0.36 | 0 | 0 | 12:00 PM | 1,091 | 0.35 | 0 | 0 |
| 1:00 PM | 1,110 | 0.35 | 0 | 0 | 1:00 PM | 1,082 | 0.34 | 0 | 0 | 1:00 PM | 1,096 | 0.35 | 0 | 0 |
| 2:00 PM | 1,410 | 0.45 | 1 | 1,410 | 2:00 PM | 1,364 | 0.43 | 1 | 1,364 | 2:00 PM | 1,387 | 0.44 | 1 | 1,387 |
| 3:00 PM | 1,396 | 0.44 | 1 | 1,396 | 3:00 PM | 1,444 | 0.46 | 1 | 1,444 | 3:00 PM | 1,420 | 0.45 | 1 | 1,420 |
| 4:00 PM | 1,620 | 0.51 | 1 | 1,620 | 4:00 PM | 1,640 | 0.52 | 1 | 1,640 | 4:00 PM | 1,630 | 0.52 | 1 | 1,630 |
| 5:00 PM | 1,737 | 0.55 | 1 | 1,737 | 5:00 PM | 1,639 | 0.52 | 1 | 1,639 | 5:00 PM | 1,688 | 0.53 | 1 | 1,688 |
| 6:00 PM | 1,594 | 0.50 | 1 | 1,594 | 6:00 PM | 1,562 | 0.49 | 1 | 1,562 | 6:00 PM | 1,578 | 0.50 | 1 | 1,578 |
| 7:00 PM | 1,198 | 0.38 | 0 | 0 | 7:00 PM | 1,259 | 0.40 | 0 | 0 | 7:00 PM | 1,229 | 0.39 | 0 | 0 |
| 8:00 PM | 960 | 0.30 | 0 | 0 | 8:00 PM | 929 | 0.29 | 0 | 0 | 8:00 PM | 945 | 0.30 | 0 | 0 |
| 9:00 PM | 786 | 0.25 | 0 | 0 | 9:00 PM | 903 | 0.29 | 0 | 0 | 9:00 PM | 845 | 0.27 | 0 | 0 |
| 10:00 PM | 553 | 0.18 | 0 | 0 | 10:00 PM | 963 | 0.30 | 0 | 0 | 10:00 PM | 758 | 0.24 | 0 | 0 |
| 11:00 PM | 448 | 0.14 | 0 | 0 | 11:00 PM | 589 | 0.19 | 0 | 0 | 11:00 PM | 519 | 0.16 | 0 | 0 |
| | | | | | | | | | | | | | | |
| **Total** | **23,005** | | **8** | **12,366** | **Total** | **23,833** | | **9** | **13,078** | **Total** | **23,419** | | **8** | **12,090** |

| Roadway Capacity | Crit. V/C | Critical Capacity | Roadway Capacity | Crit. V/C | Critical Capacity | Roadway Capacity | Crit. V/C | Critical Capacity |
|---|---|---|---|---|---|---|---|---|
| 3,160 | 40% | 1,264 | 3,160 | 40% | 1,264 | 3160 | 40% | 1,264 |
| **Peak Hour (K) Factor** | **0.076** | | **Peak Hour (K) Factor** | **0.069** | | **Peak Hour (K) Factor** | **0.072** | |
| **Peak Period Volume Factor** | **0.538** | | **Peak Period Volume Factor** | **0.549** | | **Peak Period Volume Factor** | **0.516** | |

# L Street Redevelopment

## Emissions Factors By Link (g/mi)

### Emission Factors From MOVES2014a

| | Roadway Segments | 2017 Existing | | | 2030 No Build | | | 2030 Build | | | 2030 Build-Mit | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $NO_x$ | VOC | $CO_2$ | $NO_x$ | VOC | $CO_2$ | $NO_x$ | VOC | $CO_2$ | $NO_x$ | VOC | $CO_2$ |
| 1 | Summer St (Pumphouse/Drydock) | 0.27 | 0.82 | 458.05 | 0.08 | 0.46 | 321.32 | 0.08 | 0.46 | 321.32 | 0.08 | 0.46 | 321.32 |
| 2 | Drydock Ave (Summer/Harbor) | 0.26 | 0.76 | 477.04 | 0.07 | 0.42 | 333.63 | 0.07 | 0.42 | 333.63 | 0.07 | 0.42 | 333.63 |
| 3 | Pappas Way (Summer/W 1st)) | 0.27 | 0.22 | 485.66 | 0.07 | 0.12 | 339.77 | 0.07 | 0.12 | 339.77 | 0.07 | 0.12 | 339.77 |
| 4 | Summer St (Drydock/Freight Road) | 0.26 | 0.33 | 439.77 | 0.07 | 0.18 | 308.35 | 0.07 | 0.18 | 308.35 | 0.07 | 0.18 | 308.35 |
| 5 | Fedex Drwy (Summer) | 0.30 | 3.82 | 515.87 | 0.09 | 2.14 | 361.26 | 0.09 | 2.14 | 361.26 | 0.09 | 2.14 | 361.26 |
| 6 | Freight Road (Summer) | 0.28 | 0.44 | 494.66 | 0.08 | 0.24 | 346.15 | 0.08 | 0.24 | 346.15 | 0.08 | 0.24 | 346.15 |
| 7 | Summer St (Freight/Elkins) | 0.25 | 0.65 | 427.77 | 0.07 | 0.36 | 299.81 | 0.07 | 0.36 | 299.81 | 0.07 | 0.36 | 299.81 |
| 8 | Elkins/K St (Summer/E 1st) | 0.28 | 0.52 | 490.65 | 0.08 | 0.29 | 343.28 | 0.08 | 0.29 | 343.28 | 0.08 | 0.29 | 343.28 |
| 9 | Summer St(Elkins/E 1st) | 0.26 | 1.14 | 437.53 | 0.07 | 0.63 | 306.77 | 0.07 | 0.63 | 306.77 | 0.07 | 0.63 | 306.77 |
| 10 | E 1st St (M/Farragut) | 0.26 | 0.25 | 445.10 | 0.08 | 0.13 | 312.13 | 0.08 | 0.13 | 312.13 | 0.08 | 0.13 | 312.13 |
| 11 | M St (E 1st/Broadway) | 0.14 | 0.50 | 341.73 | 0.04 | 0.28 | 237.60 | 0.04 | 0.28 | 237.60 | 0.04 | 0.28 | 237.60 |
| 12 | E 1st St (Summer/M) | 0.32 | 0.76 | 502.74 | 0.09 | 0.42 | 353.05 | 0.09 | 0.42 | 353.05 | 0.09 | 0.42 | 353.05 |
| 13 | E 1st St (K/Summer) | 0.29 | 0.83 | 507.36 | 0.08 | 0.46 | 355.15 | 0.08 | 0.46 | 355.15 | 0.08 | 0.46 | 355.15 |
| 14 | K St (E 1st/Broadway) | 0.19 | 0.51 | 400.20 | 0.05 | 0.28 | 279.05 | 0.05 | 0.28 | 279.05 | 0.05 | 0.28 | 279.05 |
| 15 | E 1st St (K/Pappas) | 0.27 | 0.29 | 483.81 | 0.07 | 0.16 | 338.45 | 0.07 | 0.16 | 338.45 | 0.07 | 0.16 | 338.45 |
| 16 | W 1st St (Pappas/Dorchester) | 0.18 | 1.00 | 388.47 | 0.05 | 0.56 | 270.70 | 0.05 | 0.56 | 270.70 | 0.05 | 0.56 | 270.70 |
| 17 | W 1st St (D/Papps) | 0.27 | 0.34 | 485.29 | 0.07 | 0.18 | 339.49 | 0.07 | 0.18 | 339.49 | 0.07 | 0.18 | 339.49 |
| 18 | L St (E 1st/E 2nd) | 0.33 | 1.33 | 510.38 | 0.10 | 0.74 | 358.51 | 0.10 | 0.74 | 358.51 | 0.10 | 0.74 | 358.51 |
| 19 | E 2nd St (Dorchester/L) | 0.28 | 0.26 | 490.29 | 0.08 | 0.14 | 343.03 | 0.08 | 0.14 | 343.03 | 0.08 | 0.14 | 343.03 |
| 20 | E 2nd St (L/M) | 0.37 | 0.77 | 572.61 | 0.11 | 0.43 | 401.79 | 0.11 | 0.43 | 401.79 | 0.11 | 0.43 | 401.79 |
| 21 | L St (E 2nd/E 3rd) | 0.31 | 1.32 | 496.41 | 0.09 | 0.74 | 348.53 | 0.09 | 0.74 | 348.53 | 0.09 | 0.74 | 348.53 |
| 22 | E 3rd St (Dorchester/L) | 0.31 | 0.25 | 521.39 | 0.09 | 0.13 | 365.18 | 0.09 | 0.13 | 365.18 | 0.09 | 0.13 | 365.18 |
| 23 | E 3rd St (L/M) | 0.50 | 0.80 | 707.44 | 0.17 | 0.44 | 497.35 | 0.17 | 0.44 | 497.35 | 0.17 | 0.44 | 497.35 |
| 24 | L St (E 3rd/E Broadway) | 0.37 | 1.33 | 555.22 | 0.11 | 0.74 | 390.32 | 0.11 | 0.74 | 390.32 | 0.11 | 0.74 | 390.32 |
| 25 | E Broadway (Dorchester/L) | 0.31 | 0.23 | 518.82 | 0.09 | 0.12 | 363.34 | 0.09 | 0.12 | 363.34 | 0.09 | 0.12 | 363.34 |
| 26 | E Broadway (L/Farragut) | 0.28 | 0.22 | 491.24 | 0.08 | 0.12 | 343.70 | 0.08 | 0.12 | 343.70 | 0.08 | 0.12 | 343.70 |
| 27 | L St (E Broadway/E 5th) | 0.25 | 0.69 | 433.39 | 0.07 | 0.38 | 303.79 | 0.07 | 0.38 | 303.79 | 0.07 | 0.38 | 303.79 |
| 28 | E 5th St (G/L) | 0.38 | 0.26 | 584.86 | 0.11 | 0.14 | 410.49 | 0.11 | 0.14 | 410.49 | 0.11 | 0.14 | 410.49 |
| 29 | E 5th St (L/Farragut) | 0.28 | 0.22 | 498.66 | 0.08 | 0.12 | 348.95 | 0.08 | 0.12 | 348.95 | 0.08 | 0.12 | 348.95 |
| 30 | L St (E 5th/E 8th) | 0.29 | 0.52 | 470.06 | 0.08 | 0.28 | 329.83 | 0.08 | 0.28 | 329.83 | 0.08 | 0.28 | 329.83 |
| 31 | E 8th St (Dorchester/L) | 0.27 | 0.17 | 482.37 | 0.07 | 0.09 | 337.42 | 0.07 | 0.09 | 337.42 | 0.07 | 0.09 | 337.42 |
| 32 | E 8th St (L/Day) | 0.31 | 0.35 | 519.39 | 0.09 | 0.19 | 363.74 | 0.09 | 0.19 | 363.74 | 0.09 | 0.19 | 363.74 |
| 33 | L St (E 8th/Columbia) | 0.31 | 0.65 | 497.62 | 0.09 | 0.36 | 349.38 | 0.09 | 0.36 | 349.38 | 0.09 | 0.36 | 349.38 |
| 34 | Columbia Rd (G/L) | 0.27 | 0.24 | 481.92 | 0.07 | 0.13 | 337.10 | 0.07 | 0.13 | 337.10 | 0.07 | 0.13 | 337.10 |
| 35 | Columbia Rd (L/O) | 0.27 | 0.29 | 481.78 | 0.07 | 0.16 | 336.99 | 0.07 | 0.16 | 336.99 | 0.07 | 0.16 | 336.99 |
| 36 | L St (Columbia/Day) | 0.25 | 7.53 | 427.77 | 0.07 | 4.23 | 299.81 | 0.07 | 4.23 | 299.81 | 0.07 | 4.23 | 299.81 |
| 37 | Day Blvd (G/L) | 0.25 | 0.23 | 431.65 | 0.07 | 0.12 | 302.57 | 0.07 | 0.12 | 302.57 | 0.07 | 0.12 | 302.57 |
| 38 | Day Blvd (L/O) | 0.25 | 0.28 | 431.22 | 0.07 | 0.15 | 302.27 | 0.07 | 0.15 | 302.27 | 0.07 | 0.15 | 302.27 |
| 39 | Elkin Drwy (Summer) [BD] | 0.32 | 0.86 | 625.58 | 0.08 | 0.48 | 437.42 | 0.08 | 0.48 | 437.42 | 0.08 | 0.48 | 437.42 |
| 40 | M St Drwy (E 1st) [BD] | 0.32 | 0.86 | 625.58 | 0.08 | 0.48 | 437.42 | 0.08 | 0.48 | 437.42 | 0.08 | 0.48 | 437.42 |

# L Street Redevelopment

## Mesoscale Roadway Data

| Link No. | Description | Speed Limit (mph) | Link Length (miles) | Grade (%) |
|---|---|---|---|---|
| 1 | Summer St (Pumphouse/Drydock) | 30 | 0.10 | 0.8 |
| 2 | Drydock Ave (Summer/Harbor) | 25 | 0.11 | 0.0 |
| 3 | Pappas Way (Summer/W 1st)) | 25 | 0.54 | 0.2 |
| 4 | Summer St (Drydock/Freight Road) | 30 | 0.29 | 0.3 |
| 5 | Fedex Drwy (Summer) | 25 | 0.02 | 0.9 |
| 6 | Freight Road (Summer) | 25 | 0.21 | 0.5 |
| 7 | Summer St (Freight/Elkins) | 30 | 0.13 | 0.0 |
| 8 | Elkins/K St (Summer/E 1st) | 25 | 0.17 | 0.3 |
| 9 | Summer St(Elkins/E 1st) | 30 | 0.07 | 0.3 |
| 10 | E 1st St (M/Farragut) | 30 | 0.43 | 0.4 |
| 11 | M St (E 1st/Broadway) | 25 | 0.17 | -4.5 |
| 12 | E 1st St (Summer/M) | 30 | 0.11 | 1.7 |
| 13 | E 1st St (K/Summer) | 25 | 0.10 | 0.8 |
| 14 | K St (E 1st/Broadway) | 25 | 0.17 | -2.3 |
| 15 | E 1st St (K/Pappas) | 25 | 0.35 | 0.2 |
| 16 | W 1st St (Pappas/Dorchester) | 25 | 0.08 | -2.8 |
| 17 | W 1st St (D/Papps) | 25 | 0.29 | 0.2 |
| 18 | L St (E 1st/E 2nd) | 30 | 0.06 | 1.9 |
| 19 | E 2nd St (Dorchester/L) | 25 | 0.41 | 0.3 |
| 20 | E 2nd St (L/M) | 25 | 0.11 | 2.2 |
| 21 | L St (E 2nd/E 3rd) | 30 | 0.06 | 1.6 |
| 22 | E 3rd St (Dorchester/L) | 25 | 0.46 | 1.1 |
| 23 | E 3rd St (L/M) | 25 | 0.11 | 5.0 |
| 24 | L St (E 3rd/E Broadway) | 30 | 0.06 | 2.8 |
| 25 | E Broadway (Dorchester/L) | 25 | 0.51 | 1.0 |
| 26 | E Broadway (L/Farragut) | 25 | 0.53 | 0.4 |
| 27 | L St (E Broadway/E 5th) | 30 | 0.12 | 0.2 |
| 28 | E 5th St (G/L) | 25 | 0.45 | 2.5 |
| 29 | E 5th St (L/Farragut) | 25 | 0.53 | 0.5 |
| 30 | L St (E 5th/E 8th) | 30 | 0.17 | 1.0 |
| 31 | E 8th St (Dorchester/L) | 25 | 0.85 | 0.1 |
| 32 | E 8th St (L/Day) | 25 | 0.28 | 1.0 |
| 33 | L St (E 8th/Columbia) | 30 | 0.13 | 1.6 |
| 34 | Columbia Rd (G/L) | 25 | 0.47 | 0.1 |
| 35 | Columbia Rd (L/O) | 25 | 0.35 | 0.1 |
| 36 | L St (Columbia/Day) | 30 | 0.01 | 0.0 |
| 37 | Day Blvd (G/L) | 30 | 0.47 | 0.1 |
| 38 | Day Blvd (L/O) | 30 | 0.35 | 0.1 |
| 39 | Elkin Drwy (Summer) [BD] | 15 | 0.10 | 0.0 |
| 40 | M St Drwy (E 1st) [BD] | 15 | 0.10 | 0.0 |

# Project Data

**TRAFFIC DATA**

| | |
|---|---|
| **Project Name** | L Street Redevelopment |
| **Existing Year** | 2017 |
| **No-Build Year** | 2030 |
| **Build Year** | 2030 |
| **Build with Mitigation Year** | 2030 |
| **Seasonal Adjustment Factor** | 1.00 |
| **K-Factor** | 7.2% |

**Idle Emission Factors**

| Year | NOx (g/hr) | VOC (g/hr) | CO2 (g/hr) |
|---|---|---|---|
| 2017 | 1.92 | 1.11 | 4078.17 |
| 2030 | 0.35 | 0.61 | 2821.74 |

# Background Concentrations

# Carbon Monoxide (CO) Background Concentrations

Data from MassDEP Air Quality Reports 2014 through 2016

| Year | 1-Hour* (ppm) | 8-Hour** (ppm) |
|---|---|---|
| 2014 | 1.6 | 0.9 |
| 2015 | 1.7 | 0.9 |
| 2016 | 1.3 | 0.9 |

*** 1-Hour values represent 2nd highest**

**** 8-Hour values represent 2nd highest**

## 1- Hour Background Calculation

**Von Hillern, Boston**

| Pollutant | 1-Hour* (ppm) | Molecular weight | Background Concentration (Micrograms/meter3) |
|---|---|---|---|
| Carbon Monoxide | 1.7 | 28.0 | 1957.9 |

* Highest value of : 2014, 2015 and 2016

## 8-Hour Background Calculation

**Von Hillern, Boston**

| Pollutant | 8-Hour* (ppm) | Molecular weight | Background Concentration (Micrograms/meter3) |
|---|---|---|---|
| Carbon Monoxide | 0.9 | 28.0 | 1048.3 |

* Highest value of : 2014, 2015 and 2016

# MOVES Microscale Output

## L Street Microscale Analysis
## MOVES Results

| movesRunId | yearId | monthId | dayId | hourId | linkId | pollutant | GramsPerVehMile | GramsPerVehHour |
|---|---|---|---|---|---|---|---|---|
| 1 | 2030 | 1 | 5 | 9 | 1 | CO | 1.2 | - |
| 1 | 2030 | 1 | 5 | 9 | 2 | CO | 1.1 | - |
| 1 | 2030 | 1 | 5 | 9 | 3 | CO | 1.3 | - |
| 1 | 2030 | 1 | 5 | 9 | 4 | CO | 1.1 | - |
| 1 | 2030 | 1 | 5 | 9 | 5 | CO | 1.4 | - |
| 1 | 2030 | 1 | 5 | 9 | 6 | CO | 1.2 | - |
| 1 | 2030 | 1 | 5 | 9 | 7 | CO | 1.2 | - |
| 1 | 2030 | 1 | 5 | 9 | 8 | CO | 1.1 | - |
| 1 | 2030 | 1 | 5 | 9 | 9 | CO | 1.1 | - |
| 1 | 2030 | 1 | 5 | 9 | 10 | CO | 1.6 | - |
| 1 | 2030 | 1 | 5 | 9 | 11 | CO | 1.2 | - |
| 1 | 2030 | 1 | 5 | 9 | 12 | CO | 1.2 | - |
| 1 | 2030 | 1 | 5 | 9 | 13 | CO | 1.6 | - |
| 1 | 2030 | 1 | 5 | 9 | 14 | CO | 3.2 | - |
| 1 | 2030 | 1 | 5 | 9 | 15 | CO | 1.5 | - |
| 1 | 2030 | 1 | 5 | 9 | 16 | CO | 1.2 | - |
| 1 | 2030 | 1 | 5 | 9 | 17 | CO | - | 3.5 |

# Mobile Source Microscale Analysis

1 CAL3QHC - (DATED 95221)

CAL3QHC PC (32 BIT) VERSION 3.0.0
(C) COPYRIGHT 1993-2000, TRINITY CONSULTANTS

Run Began on 7/05/2018 at 8:07:03

JOB: 2030 L STREET RUN: NO BUILD

DATE : 07/05/ 0
TIME : 08:07:03

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES
---
VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 100. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

LINK VARIABLES
---
LINK DESCRIPTION * LINK COORDINATES (M) * LENGTH BRG TYPE VPH EF H W V/C QUEUE
* X1 Y1 X2 Y2 * (M) (DEG) (G/MI) (M) (M) (VEH)
---*---*---
1. SUMMERSB_E1ST_FF * 332317.4 ******** 332318.4 ******** * 183. 0. AG 1984. 1.1 0.0 22.1
2. E1STWB_SUMMER_FF * 332317.4 ******** 332493.3 ******** * 176. 90. AG 649. 1.6 0.0 18.0
3. LSTNB_E1ST_FF * 332317.4 ******** 332317.4 ******** * 182. 180. AG 1485. 1.2 0.0 22.4
4. E1STEB_SUMMER_FF * 332317.4 ******** 332138.0 ******** * 179. 270. AG 416. 1.2 0.0 18.4
5. LSTSB_BROADWAY_FF * 332316.7 ******** 332317.4 ******** * 96. 0. AG 1426. 1.6 0.0 22.4
6. BROADWAYWB_LST_FF * 332316.7 ******** 332488.7 ******** * 172. 90. AG 452. 3.2 0.0 21.8
7. LSTNB_BROADWAY_FF * 332316.7 ******** 332316.7 ******** * 101. 180. AG 1224. 1.5 0.0 22.4
8. BROADWAYEB_LST_FF * 332316.7 ******** 332151.6 ******** * 165. 270. AG 690. 1.2 0.0 24.5
9. SUMMERSB_E1ST_Q * 332313.3 ******** 332313.5 ******** * 91. 0. AG 4. 100.0 0.0 7.3 0.69 15.1
10. E1STWB_SUMMER_Q * 332333.0 ******** 332364.8 ******** * 32. 90. AG 7. 100.0 0.0 3.7 0.77 5.3
11. LSTNB_E1ST_Q * 332322.0 ******** 332321.1 ******** * 54. 181. AG 5. 100.0 0.0 7.3 0.41 9.0
12. E1STEB_SUMMER_Q * 332300.6 ******** 332271.9 ******** * 29. 272. AG 7. 100.0 0.0 3.7 0.69 4.8
13. LSTSB_BROADWAY_Q * 332313.7 ******** 332314.2 ******** * 123. 0. AG 6. 100.0 0.0 7.3 0.74 20.5
14. BROADWAYWB_LST_Q * 332330.4 ******** 332368.2 ******** * 38. 90. AG 7. 100.0 0.0 3.7 0.62 6.3
15. LSTNB_BROADWAY_Q * 332320.9 ******** 332320.6 ******** * 69. 180. AG 5. 100.0 0.0 7.3 0.39 11.5
16. BROADWAYEB_LST_Q * 332303.7 ******** 332263.3 ******** * 40. 269. AG 6. 100.0 0.0 7.3 0.27 6.7

JOB: 2030 L STREET RUN: NO BUILD

DATE : 07/05/ 0
TIME : 08:07:03

ADDITIONAL QUEUE LINK PARAMETERS

| LINK DESCRIPTION | * CYCLE LENGTH (SEC) | RED TIME (SEC) | CLEARANCE LOST TIME (SEC) | APPROACH VOL (VPH) | SATURATION FLOW RATE (VPH) | IDLE EM FAC (gm/hr) | SIGNAL TYPE | ARRIVAL RATE |
|---|---|---|---|---|---|---|---|---|
| 9. SUMMERSB_E1ST_Q | * 108 | 44 | 2.0 | 1235 | 3200 | 3.46 | 2 | 3 |
| 10. E1STWB_SUMMER_Q | * 108 | 84 | 2.0 | 227 | 1600 | 3.46 | 2 | 3 |
| 11. LSTNB_E1ST_Q | * 108 | 54 | 2.0 | 600 | 3200 | 3.46 | 2 | 3 |
| 12. E1STEB_SUMMER_Q | * 108 | 84 | 2.0 | 205 | 1600 | 3.46 | 2 | 3 |
| 13. LSTSB_BROADWAY_Q | * 142 | 88 | 2.0 | 837 | 3200 | 3.46 | 2 | 3 |
| 14. BROADWAYWB_LST_Q | * 142 | 108 | 2.0 | 210 | 1600 | 3.46 | 2 | 3 |
| 15. LSTNB_BROADWAY_Q | * 142 | 69 | 2.0 | 599 | 3200 | 3.46 | 2 | 3 |
| 16. BROADWAYEB_LST_Q | * 142 | 97 | 2.0 | 250 | 3200 | 3.46 | 2 | 3 |

RECEPTOR LOCATIONS

| RECEPTOR | * COORDINATES (M) X | Y | Z |
|---|---|---|---|
| 1. 4NW | * 332306.4 | ******** | 1.8 * |
| 2. 4NW | * 332306.4 | ******** | 1.8 * |
| 3. 4NW | * 332306.5 | ******** | 1.8 * |
| 4. 4NW | * 332306.5 | ******** | 1.8 * |
| 5. 4NW | * 332306.6 | ******** | 1.8 * |
| 6. 4NW | * 332306.7 | ******** | 1.8 * |
| 7. 4NW | * 332306.7 | ******** | 1.8 * |
| 8. 4NW | * 332306.8 | ******** | 1.8 * |
| 9. 4NE | * 332328.9 | ******** | 1.8 * |
| 10. 4NE | * 332328.8 | ******** | 1.8 * |
| 11. 4NE | * 332328.8 | ******** | 1.8 * |
| 12. 4NE | * 332328.7 | ******** | 1.8 * |
| 13. 4NE | * 332328.7 | ******** | 1.8 * |
| 14. 4NE | * 332328.6 | ******** | 1.8 * |
| 15. 4NE | * 332328.5 | ******** | 1.8 * |
| 16. 4NE | * 332328.5 | ******** | 1.8 * |
| 17. 4NE | * 332337.4 | ******** | 1.8 * |
| 18. 4NE | * 332347.4 | ******** | 1.8 * |
| 19. 4NE | * 332357.4 | ******** | 1.8 * |
| 20. 4NE | * 332367.4 | ******** | 1.8 * |
| 21. 4NE | * 332377.4 | ******** | 1.8 * |
| 22. 4NE | * 332387.4 | ******** | 1.8 * |
| 23. 4NE | * 332397.4 | ******** | 1.8 * |
| 24. 4SE | * 332403.3 | ******** | 1.8 * |
| 25. 4SE | * 332393.3 | ******** | 1.8 * |
| 26. 4SE | * 332383.3 | ******** | 1.8 * |
| 27. 4SE | * 332373.3 | ******** | 1.8 * |

| | | | | | |
|---|---|---|---|---|---|
| 28. 4SE | * | 332363.3 | ******** | 1.8 | * |
| 29. 4SE | * | 332353.3 | ******** | 1.8 | * |
| 30. 4SE | * | 332343.3 | ******** | 1.8 | * |
| 31. 4SE | * | 332333.3 | ******** | 1.8 | * |
| 32. 4SE | * | 332328.6 | ******** | 1.8 | * |
| 33. 4SE | * | 332328.6 | ******** | 1.8 | * |
| 34. 4SE | * | 332328.6 | ******** | 1.8 | * |
| 35. 4SE | * | 332328.6 | ******** | 1.8 | * |
| 36. 4SE | * | 332328.6 | ******** | 1.8 | * |
| 37. 4SE | * | 332328.6 | ******** | 1.8 | * |



JOB: 2030 L STREET RUN: NO BUILD

DATE : 07/05/ 0
TIME : 08:07:03

RECEPTOR LOCATIONS

| RECEPTOR | * | COORDINATES (M) X | Y | Z | * |
|---|---|---|---|---|---|
| 38. 4SE | * | 332328.6 | ******** | 1.8 | * |
| 39. 4SE | * | 332328.6 | ******** | 1.8 | * |
| 40. 4SE | * | 332328.6 | ******** | 1.8 | * |
| 41. 4SE | * | 332328.6 | ******** | 1.8 | * |
| 42. 4SE | * | 332328.6 | ******** | 1.8 | * |
| 43. 4SW | * | 332306.2 | ******** | 1.8 | * |
| 44. 4SW | * | 332306.2 | ******** | 1.8 | * |
| 45. 4SW | * | 332306.2 | ******** | 1.8 | * |
| 46. 4SW | * | 332306.2 | ******** | 1.8 | * |
| 47. 4SW | * | 332306.2 | ******** | 1.8 | * |
| 48. 4SW | * | 332306.2 | ******** | 1.8 | * |
| 49. 4SW | * | 332306.2 | ******** | 1.8 | * |
| 50. 4SW | * | 332306.2 | ******** | 1.8 | * |
| 51. 4SW | * | 332306.2 | ******** | 1.8 | * |
| 52. 4SW | * | 332306.2 | ******** | 1.8 | * |
| 53. 4SW | * | 332306.2 | ******** | 1.8 | * |
| 54. 4SW | * | 332297.3 | ******** | 1.8 | * |
| 55. 4SW | * | 332287.3 | ******** | 1.8 | * |
| 56. 4SW | * | 332277.3 | ******** | 1.8 | * |
| 57. 4SW | * | 332267.3 | ******** | 1.8 | * |
| 58. 4SW | * | 332257.3 | ******** | 1.8 | * |
| 59. 4SW | * | 332247.3 | ******** | 1.8 | * |
| 60. 4SW | * | 332237.3 | ******** | 1.8 | * |
| 61. 4SW | * | 332227.3 | ******** | 1.8 | * |
| 62. 4NW | * | 332228.0 | ******** | 1.8 | * |
| 63. 4NW | * | 332238.0 | ******** | 1.8 | * |
| 64. 4NW | * | 332248.0 | ******** | 1.8 | * |
| 65. 4NW | * | 332258.0 | ******** | 1.8 | * |
| 66. 4NW | * | 332268.0 | ******** | 1.8 | * |
| 67. 4NW | * | 332278.0 | ******** | 1.8 | * |
| 68. 4NW | * | 332288.0 | ******** | 1.8 | * |
| 69. 4NW | * | 332298.0 | ******** | 1.8 | * |

| | | | | |
|---|---|---|---|---|
| 70. 7NW | * | 332305.6 | ******** | 1.8 * |
| 71. 7NW | * | 332305.7 | ******** | 1.8 * |
| 72. 7NW | * | 332305.8 | ******** | 1.8 * |
| 73. 7NW | * | 332305.8 | ******** | 1.8 * |
| 74. 7NW | * | 332305.9 | ******** | 1.8 * |
| 75. 7NE | * | 332328.3 | ******** | 1.8 * |
| 76. 7NE | * | 332328.3 | ******** | 1.8 * |
| 77. 7NE | * | 332328.2 | ******** | 1.8 * |
| 78. 7NE | * | 332328.1 | ******** | 1.8 * |
| 79. 7NE | * | 332328.1 | ******** | 1.8 * |
| 80. 7NE | * | 332328.0 | ******** | 1.8 * |
| 81. 7NE | * | 332336.7 | ******** | 1.8 * |
| 82. 7NE | * | 332346.7 | ******** | 1.8 * |
| 83. 7NE | * | 332356.7 | ******** | 1.8 * |
| 84. 7NE | * | 332366.7 | ******** | 1.8 * |
| 85. 7NE | * | 332376.7 | ******** | 1.8 * |
| 86. 7NE | * | 332386.7 | ******** | 1.8 * |
| 87. 7NE | * | 332396.7 | ******** | 1.8 * |



JOB: 2030 L STREET RUN: NO BUILD

DATE : 07/05/ 0
TIME : 08:07:03

RECEPTOR LOCATIONS

| RECEPTOR | * | COORDINATES (M) X | Y | Z | * |
|---|---|---|---|---|---|
| 88. 7NE | * | 332406.7 | ******** | 1.8 | * |
| 89. 7NE | * | 332416.7 | ******** | 1.8 | * |
| 90. 7SE | * | 332418.6 | ******** | 1.8 | * |
| 91. 7SE | * | 332408.6 | ******** | 1.8 | * |
| 92. 7SE | * | 332398.6 | ******** | 1.8 | * |
| 93. 7SE | * | 332388.6 | ******** | 1.8 | * |
| 94. 7SE | * | 332378.6 | ******** | 1.8 | * |
| 95. 7SE | * | 332368.6 | ******** | 1.8 | * |
| 96. 7SE | * | 332358.6 | ******** | 1.8 | * |
| 97. 7SE | * | 332348.6 | ******** | 1.8 | * |
| 98. 7SE | * | 332338.6 | ******** | 1.8 | * |
| 99. 7SE | * | 332328.6 | ******** | 1.8 | * |
| 100. 7SE | * | 332327.9 | ******** | 1.8 | * |
| 101. 7SE | * | 332327.9 | ******** | 1.8 | * |
| 102. 7SE | * | 332327.9 | ******** | 1.8 | * |
| 103. 7SE | * | 332327.9 | ******** | 1.8 | * |
| 104. 7SE | * | 332327.9 | ******** | 1.8 | * |
| 105. 7SE | * | 332327.9 | ******** | 1.8 | * |
| 106. 7SW | * | 332305.5 | ******** | 1.8 | * |
| 107. 7SW | * | 332305.5 | ******** | 1.8 | * |
| 108. 7SW | * | 332305.5 | ******** | 1.8 | * |
| 109. 7SW | * | 332305.5 | ******** | 1.8 | * |
| 110. 7SW | * | 332305.5 | ******** | 1.8 | * |
| 111. 7SW | * | 332305.5 | ******** | 1.8 | * |

| | | | | | |
|---|---|---|---|---|---|
| 112. 7SW | * | 332296.7 | ******** | 1.8 | * |
| 113. 7SW | * | 332286.7 | ******** | 1.8 | * |
| 114. 7SW | * | 332276.7 | ******** | 1.8 | * |
| 115. 7SW | * | 332266.7 | ******** | 1.8 | * |
| 116. 7SW | * | 332256.7 | ******** | 1.8 | * |
| 117. 7SW | * | 332246.7 | ******** | 1.8 | * |
| 118. 7SW | * | 332236.7 | ******** | 1.8 | * |
| 119. 7SW | * | 332226.7 | ******** | 1.8 | * |
| 120. 7SW | * | 332216.7 | ******** | 1.8 | * |
| 121. 7NW | * | 332221.6 | ******** | 1.8 | * |
| 122. 7NW | * | 332231.6 | ******** | 1.8 | * |
| 123. 7NW | * | 332241.6 | ******** | 1.8 | * |
| 124. 7NW | * | 332251.6 | ******** | 1.8 | * |
| 125. 7NW | * | 332261.6 | ******** | 1.8 | * |
| 126. 7NW | * | 332271.6 | ******** | 1.8 | * |
| 127. 7NW | * | 332281.6 | ******** | 1.8 | * |
| 128. 7NW | * | 332291.6 | ******** | 1.8 | * |
| 129. 7NW | * | 332301.6 | ******** | 1.8 | * |
| 130. 4NE | * | 332328.6 | ******** | 1.8 | * |
| 131. 7NE | * | 332328.1 | ******** | 1.8 | * |
| 132. 7SW | * | 332304.7 | ******** | 1.8 | * |
| 133. 7NW | * | 332304.7 | ******** | 1.8 | * |



JOB: 2030 L STREET RUN: NO BUILD

MODEL RESULTS

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REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-350.

| WIND ANGLE (DEGR) | * | CONCENTRATION (PPM) REC1 | REC2 | REC3 | REC4 | REC5 | REC6 | REC7 | REC8 | REC9 | REC10 | REC11 | REC12 | REC13 | REC14 | REC15 | REC16 | REC17 | REC18 | REC19 | REC20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 20. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 30. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 40. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 50. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 60. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 80. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 90. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 100. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 |
| 110. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 |
| 120. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 130. | * | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 140. * | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 150. * | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 160. * | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 170. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 180. * | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 190. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 200. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 |
| 210. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 220. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 230. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 240. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 250. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 260. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 270. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 280. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 290. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 300. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 |
| 310. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 |
| 320. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 |
| 330. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 |
| 340. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 |
| 350. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 |
| ------*--- | | | | | | | | | | | | | | | | | | | | | |
| MAX * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| DEGR. * | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 100 | 100 | 100 |



JOB: 2030 L STREET RUN: NO BUILD

MODEL RESULTS

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REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-350.

| WIND ANGLE (DEGR)* | * CONCENTRATION (PPM) REC21 | REC22 | REC23 | REC24 | REC25 | REC26 | REC27 | REC28 | REC29 | REC30 | REC31 | REC32 | REC33 | REC34 | REC35 | REC36 | REC37 | REC38 | REC39 | REC40 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ------*--- | | | | | | | | | | | | | | | | | | | | |
| 0. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| 10. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 20. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 30. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 40. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 50. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 60. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 80. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 90. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

```
100. *  0.1  0.1  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0
110. *  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0
120. *  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0
130. *  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0
140. *  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0
150. *  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0
160. *  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0
170. *  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0
180. *  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1
190. *  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1
200. *  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1
210. *  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1
220. *  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1
230. *  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1
240. *  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1
250. *  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0
260. *  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1
270. *  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1
280. *  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1
290. *  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0
300. *  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1
310. *  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1
320. *  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.1  0.0  0.0  0.1  0.1  0.1  0.1  0.1  0.1  0.1
330. *  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.1  0.1  0.0  0.1  0.1  0.1  0.1  0.1  0.1  0.1
340. *  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1
350. *  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1
------*-------------------------------------------------------------------------------------------------------------------
MAX  *  0.1  0.1  0.0  0.0  0.0  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1
DEGR. * 100  100   0    0    0   80   80   70   70   70   70    0    0    0  180  180  180    0    0    0
```



JOB: 2030 L STREET RUN: NO BUILD

MODEL RESULTS

---

REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-350.

```
WIND  * CONCENTRATION
ANGLE *      (PPM)
(DEGR)* REC41 REC42 REC43 REC44 REC45 REC46 REC47 REC48 REC49 REC50 REC51 REC52 REC53
REC54 REC55 REC56 REC57 REC58 REC59 REC60
------*-------------------------------------------------------------------------------------------------------------------
 0. *  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.0  0.0  0.0  0.0  0.1  0.1  0.0  0.0  0.0  0.0  0.0  0.0  0.0
10. *  0.0  0.0  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.0  0.0  0.0  0.0  0.0  0.0
20. *  0.0  0.0  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.0  0.0  0.0  0.0  0.0  0.0
30. *  0.0  0.0  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.0  0.1  0.1  0.0  0.0  0.0  0.0  0.0  0.0
40. *  0.0  0.0  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0
50. *  0.0  0.0  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0
```

```
 60. *  0.0  0.0  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0
 70. *  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.1  0.0  0.0  0.0  0.0  0.0  0.0  0.0
 80. *  0.0  0.0  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.0  0.0  0.0  0.0  0.0  0.0  0.0
 90. *  0.0  0.0  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.0  0.0  0.0  0.0  0.0  0.0  0.0
100. *  0.0  0.0  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.0  0.0  0.0  0.0  0.0  0.0  0.0
110. *  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.1  0.0  0.0  0.0  0.0  0.0  0.0  0.0
120. *  0.0  0.0  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.0  0.0  0.0  0.0  0.0  0.0  0.0
130. *  0.0  0.0  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.0  0.0  0.0  0.0  0.0  0.0  0.0
140. *  0.0  0.0  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.0  0.0  0.0  0.0  0.0  0.0  0.0
150. *  0.0  0.0  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.0  0.0  0.0  0.0  0.0  0.0  0.0
160. *  0.0  0.0  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.0  0.0  0.0  0.0  0.0  0.0
170. *  0.0  0.0  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.0  0.0  0.0  0.0  0.0  0.0  0.0
180. *  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.0  0.0  0.0  0.0  0.0  0.0  0.0
190. *  0.1  0.1  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0
200. *  0.1  0.1  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0
210. *  0.1  0.1  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0
220. *  0.1  0.1  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0
230. *  0.1  0.1  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0
240. *  0.1  0.1  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0
250. *  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0
260. *  0.1  0.1  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0
270. *  0.1  0.1  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0
280. *  0.1  0.1  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0
290. *  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0
300. *  0.1  0.1  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0
310. *  0.1  0.1  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0
320. *  0.1  0.1  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0
330. *  0.1  0.1  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0
340. *  0.1  0.1  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0
350. *  0.1  0.1  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0
------*-------------------------------------------------------------------------------------------------------------------
MAX  *  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.0  0.0  0.0  0.0  0.0  0.0
DEGR. *  0    0    0    0    0    0    0   10   10   10   10    0    0   10    0    0    0    0    0    0
```



JOB: 2030 L STREET RUN: NO BUILD

MODEL RESULTS

---

REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-350.

```
WIND  * CONCENTRATION
ANGLE *      (PPM)
(DEGR)* REC61 REC62 REC63 REC64 REC65 REC66 REC67 REC68 REC69 REC70 REC71 REC72 REC73
REC74 REC75 REC76 REC77 REC78 REC79 REC80
------*-------------------------------------------------------------------------------------------------------------------
 0. *  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.1  0.1  0.1  0.1  0.0  0.0  0.1  0.1  0.1  0.1  0.1
10. *  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.1  0.1  0.1  0.1  0.1  0.1  0.0  0.0  0.0  0.0  0.0  0.0
```

| | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 30. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 40. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 50. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 60. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 80. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 90. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 100. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 110. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 120. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 130. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 140. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 150. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 160. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 170. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 180. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 |
| 190. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 |
| 200. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 210. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 |
| 220. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 230. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 240. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 250. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 260. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 270. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 280. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 290. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 300. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 310. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 320. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 330. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 340. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 350. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| ------* | | | | | | | | | | | | | | | | | | | | | |
| MAX * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| DEGR. * | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 10 | 180 | 0 | 0 | 0 | 0 | 0 |



JOB: 2030 L STREET RUN: NO BUILD

MODEL RESULTS

---

REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-350.

WIND * CONCENTRATION
ANGLE * (PPM)
(DEGR)* REC81 REC82 REC83 REC84 REC85 REC86 REC87 REC88 REC89 REC90 REC91 REC92 REC93

| | REC94 | REC95 | REC96 | REC97 | REC98 | REC99 | RE100 |
|---|---|---|---|---|---|---|---|
| 0. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 20. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 30. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 40. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 50. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 60. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 80. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 90. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 |
| 100. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 110. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 120. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 130. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 140. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 150. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 160. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 170. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 180. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 190. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 200. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 210. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 220. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 230. * | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 240. * | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 250. * | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 |
| 260. * | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 |
| 270. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 280. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 290. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 300. * | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 310. * | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 320. * | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 330. * | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 340. * | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 350. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| MAX * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| DEGR. * | 90 | 90 | 90 | 90 | 90 | 100 | 100 |

| | REC94 | REC95 | REC96 | REC97 | REC98 | REC99 | RE100 |
|---|---|---|---|---|---|---|---|
| 0. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 20. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 30. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 40. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 50. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 60. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 80. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 90. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 |
| 100. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 110. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 120. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 130. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 140. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 150. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 160. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 170. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 180. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 190. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 200. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 210. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 220. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 230. * | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 240. * | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 250. * | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 |
| 260. * | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 |
| 270. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 280. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 290. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 300. * | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 310. * | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 320. * | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 330. * | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 340. * | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 350. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| MAX * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| DEGR. * | 90 | 90 | 90 | 90 | 90 | 100 | 100 |



JOB: 2030 L STREET RUN: NO BUILD

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-350.

| WIND ANGLE (DEGR) | * CONCENTRATION (PPM) * | RE101 | RE102 | RE103 | RE104 | RE105 | RE106 | RE107 | RE108 | RE109 | RE110 | RE111 | RE112 | RE113 | RE114 | RE115 | RE116 | RE117 | RE118 | RE119 | RE120 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 20. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 30. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 40. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 50. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 60. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 80. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 90. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 100. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 110. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 120. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 130. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 140. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 150. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 160. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 170. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 180. | * | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 190. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 200. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 210. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 220. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 230. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 240. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 250. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 260. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 270. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 280. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 290. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 300. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 310. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 320. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 330. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 340. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 350. | * | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| MAX | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| DEGR. | * | 180 | 190 | 190 | 190 | 0 | 0 | 10 | 10 | 10 | 20 | 10 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



JOB: 2030 L STREET RUN: NO BUILD

MODEL RESULTS

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REMARKS : In search of the angle corresponding to
the maximum concentration, only the first

angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-350.

| WIND ANGLE (DEGR) | * CONCENTRATION (PPM) * | RE121 | RE122 | RE123 | RE124 | RE125 | RE126 | RE127 | RE128 | RE129 | RE130 | RE131 | RE132 | RE133 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.1 |
| 10. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.1 | 0.1 |
| 20. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.1 | 0.1 |
| 30. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.1 | 0.1 |
| 40. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 |
| 50. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 |
| 60. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 |
| 70. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 |
| 80. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.2 | 0.1 |
| 90. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 |
| 100. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 |
| 110. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.1 | 0.0 | 0.1 |
| 120. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| 130. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| 140. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 |
| 150. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 |
| 160. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.1 | 0.1 |
| 170. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 |
| 180. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.1 | 0.0 |
| 190. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 |
| 200. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 |
| 210. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 220. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 230. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 240. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 |
| 250. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 |
| 260. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 |
| 270. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 |
| 280. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 |
| 290. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 |
| 300. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 |
| 310. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 |
| 320. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 |
| 330. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 |
| 340. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 |
| 350. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 |
| MAX | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 |
| DEGR. | * | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 80 | 100 |

THE HIGHEST CONCENTRATION OF 0.20 PPM OCCURRED AT RECEPTOR RE132.

1 CAL3QHC - (DATED 95221)

CAL3QHC PC (32 BIT) VERSION 3.0.0
(C) COPYRIGHT 1993-2000, TRINITY CONSULTANTS

Run Began on 7/05/2018 at 8:07:17

JOB: 2030 L STREET RUN: NO BUILD

DATE : 07/05/ 0
TIME : 08:07:17

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES
---
VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 100. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

LINK VARIABLES
---
LINK DESCRIPTION * LINK COORDINATES (M) * LENGTH BRG TYPE VPH EF H W V/C QUEUE
* X1 Y1 X2 Y2 * (M) (DEG) (G/MI) (M) (M) (VEH)
---*---*---*---
1. SUMMERSB_DRYDOCK_FF * 332054.4 ******** 331934.3 ******** * 162. 312. AG 2340. 1.2 0.0 30.0
2. DRYDOCKWB_SUMMER_FF * 332051.2 ******** 332079.8 ******** * 41. 44. AG 1009. 1.1 0.0 23.2
3. DRYDOCKWB_SUMMER_FF * 332079.8 ******** 332148.4 ******** * 70. 78. AG 1009. 1.1 0.0 23.2
4. SUMMERNB_DRYDOCK_FF * 332054.4 ******** 332250.4 ******** * 267. 133. AG 2065. 1.3 0.0 29.3
5. PAPPASEB_SUMMER_FF * 332043.9 ******** 332046.3 ******** * 138. 179. AG 496. 1.1 0.0 16.6
6. SUMMERSB_FREIGHT_FF * 332318.4 ******** 332318.0 ******** * 55. 360. AG 2063. 1.4 0.0 23.0
7. SUMMERSB_FREIGHT_FF * 332318.0 ******** 332298.1 ******** * 70. 344. AG 2063. 1.4 0.0 23.0
8. FREIGHTWB_SUMMER_FF * 332486.2 ******** 332319.3 ******** * 187. 297. AG 31. 1.2 0.0 13.8
9. SUMMERNB_FREIGHT_FF * 332318.4 ******** 332316.4 ******** * 120. 181. AG 2047. 1.2 0.0 22.5
10. FEDEXEB_FREIGHT_FF * 332318.4 ******** 332278.3 ******** * 40. 271. AG 47. 1.1 0.0 15.1
11. SUMMERSB_DRYDOCK_Q * 332038.1 ******** 331954.5 ******** * 112. 312. AG 5. 100.0 0.0 11.0 0.61 18.7
12. DRYDOCKWB_SUMMER_Q * 332060.2 ******** 332279.9 ******** * 297. 48. AG 7. 100.0 0.0 7.3 1.09 49.5
13. SUMMERNB_DRYDOCK_Q * 332069.4 ******** 332133.4 ******** * 88. 134. AG 6. 100.0 0.0 11.0 0.56 14.7
14. PAPPASEB_SUMMER_Q * 332046.7 ******** 332047.1 ******** * 16. 178. AG 7. 100.0 0.0 3.7 0.37 2.6
15. SUMMERSBTRT_FREIGHT_* 332313.7 ******** 332308.1 ******** * 105. 357. AG 4. 100.0 0.0

7.3 0.80 17.5
16. SUMMERSBLT_FREIGHT_Q* 332318.3 ******** 332318.3 ******** * 0. **** AG 3. 100.0 0.0 3.7 0.00 0.0
17. FREIGHTWB_SUMMER_Q * 332417.4 ******** 332414.6 ******** * 3. 297. AG 6. 100.0 0.0 3.7 0.06 0.5
18. SUMMERNBTRT_FREIGHT_* 332322.8 ******** 332320.1 ******** * 65. 182. AG 4. 100.0 0.0 7.3 0.49 10.8
19. SUMMERNBLT_FREIGHT_Q* 332317.7 ******** 332317.7 ******** * 0. 180. AG 3. 100.0 0.0 3.7 0.00 0.0
20. FEDEXEB_FREIGHT_Q * 332305.2 ******** 332302.1 ******** * 3. 264. AG 6. 100.0 0.0 3.7 0.06 0.5



JOB: 2030 L STREET RUN: NO BUILD

DATE : 07/05/ 0
TIME : 08:07:17

ADDITIONAL QUEUE LINK PARAMETERS

| LINK DESCRIPTION | * | CYCLE LENGTH (SEC) | RED TIME (SEC) | CLEARANCE LOST TIME (SEC) | APPROACH VOL (VPH) | SATURATION FLOW RATE (VPH) | IDLE EM FAC (gm/hr) | SIGNAL TYPE | ARRIVAL RATE |
|---|---|---|---|---|---|---|---|---|---|
| 11. SUMMERSB_DRYDOCK_Q | * | 100 | 52 | 2.0 | 1296 | 4800 | 3.46 | 2 | 3 |
| 12. DRYDOCKWB_SUMMER_Q | * | 100 | 75 | 2.0 | 731 | 3200 | 3.46 | 2 | 3 |
| 13. SUMMERNB_DRYDOCK_Q | * | 100 | 66 | 2.0 | 803 | 4800 | 3.46 | 2 | 3 |
| 14. PAPPASEB_SUMMER_Q | * | 100 | 75 | 2.0 | 125 | 1600 | 3.46 | 2 | 3 |
| 15. SUMMERSBTRT_FREIGHT_* | | 106 | 50 | 2.0 | 1262 | 3200 | 3.46 | 2 | 3 |
| 16. SUMMERSBLT_FREIGHT_Q* | | 106 | 35 | 2.0 | 0 | 1600 | 3.46 | 2 | 3 |
| 17. FREIGHTWB_SUMMER_Q | * | 106 | 71 | 2.0 | 26 | 1600 | 3.46 | 2 | 3 |
| 18. SUMMERNBTRT_FREIGHT_* | | 106 | 50 | 2.0 | 775 | 3200 | 3.46 | 2 | 3 |
| 19. SUMMERNBLT_FREIGHT_Q* | | 106 | 35 | 2.0 | 5 | 1600 | 3.46 | 2 | 3 |
| 20. FEDEXEB_FREIGHT_Q | * | 106 | 71 | 2.0 | 26 | 1600 | 3.46 | 2 | 3 |

RECEPTOR LOCATIONS

| RECEPTOR | * | COORDINATES (M) X | Y | Z |
|---|---|---|---|---|
| 1. 1N | * | 332053.0 | ******** | 1.8 * |
| 2. 1N | * | 332056.5 | ******** | 1.8 * |
| 3. 1N | * | 332063.4 | ******** | 1.8 * |
| 4. 1N | * | 332070.2 | ******** | 1.8 * |
| 5. 1N | * | 332077.4 | ******** | 1.8 * |
| 6. 1N | * | 332087.2 | ******** | 1.8 * |
| 7. 1N | * | 332097.0 | ******** | 1.8 * |
| 8. 1E | * | 332101.8 | ******** | 1.8 * |
| 9. 1E | * | 332092.0 | ******** | 1.8 * |
| 10. 1E | * | 332085.7 | ******** | 1.8 * |
| 11. 1E | * | 332078.8 | ******** | 1.8 * |
| 12. 1E | * | 332072.0 | ******** | 1.8 * |
| 13. 1E | * | 332069.7 | ******** | 1.8 * |
| 14. 1E | * | 332071.7 | ******** | 1.8 * |

| | | | | | |
|---|---|---|---|---|---|
| 15. 1E | * | 332079.0 | ******** | 1.8 | * |
| 16. 1E | * | 332086.4 | ******** | 1.8 | * |
| 17. 1E | * | 332093.7 | ******** | 1.8 | * |
| 18. 1E | * | 332101.0 | ******** | 1.8 | * |
| 19. 1E | * | 332108.4 | ******** | 1.8 | * |
| 20. 1E | * | 332115.7 | ******** | 1.8 | * |
| 21. 1S | * | 332093.6 | ******** | 1.8 | * |
| 22. 1S | * | 332086.3 | ******** | 1.8 | * |
| 23. 1S | * | 332079.0 | ******** | 1.8 | * |
| 24. 1S | * | 332071.6 | ******** | 1.8 | * |
| 25. 1S | * | 332064.3 | ******** | 1.8 | * |
| 26. 1S | * | 332056.9 | ******** | 1.8 | * |
| 27. 1S | * | 332052.8 | ******** | 1.8 | * |
| 28. 1S | * | 332052.9 | ******** | 1.8 | * |
| 29. 1S | * | 332053.1 | ******** | 1.8 | * |
| 30. 1S | * | 332053.3 | ******** | 1.8 | * |
| 31. 1S | * | 332053.4 | ******** | 1.8 | * |
| 32. 1S | * | 332053.6 | ******** | 1.8 | * |
| 33. 1S | * | 332053.8 | ******** | 1.8 | * |
| 34. 1W | * | 332037.2 | ******** | 1.8 | * |
| 35. 1W | * | 332037.0 | ******** | 1.8 | * |



JOB: 2030 L STREET RUN: NO BUILD

DATE : 07/05/ 0
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RECEPTOR LOCATIONS

| RECEPTOR | * | COORDINATES (M) X | Y | Z | * |
|---|---|---|---|---|---|
| 36. 1W | * | 332036.8 | ******** | 1.8 | * |
| 37. 1W | * | 332036.6 | ******** | 1.8 | * |
| 38. 1W | * | 332036.5 | ******** | 1.8 | * |
| 39. 1W | * | 332036.3 | ******** | 1.8 | * |
| 40. 1W | * | 332036.1 | ******** | 1.8 | * |
| 41. 1W | * | 332035.9 | ******** | 1.8 | * |
| 42. 1W | * | 332036.9 | ******** | 1.8 | * |
| 43. 1W | * | 332029.5 | ******** | 1.8 | * |
| 44. 1W | * | 332022.1 | ******** | 1.8 | * |
| 45. 1W | * | 332014.6 | ******** | 1.8 | * |
| 46. 1W | * | 332007.2 | ******** | 1.8 | * |
| 47. 1W | * | 331999.8 | ******** | 1.8 | * |
| 48. 1W | * | 331992.3 | ******** | 1.8 | * |
| 49. 1W | * | 331984.9 | ******** | 1.8 | * |
| 50. 1W | * | 331977.5 | ******** | 1.8 | * |
| 51. 1W | * | 331970.1 | ******** | 1.8 | * |
| 52. 1N | * | 331989.0 | ******** | 1.8 | * |
| 53. 1N | * | 331996.4 | ******** | 1.8 | * |
| 54. 1N | * | 332003.8 | ******** | 1.8 | * |
| 55. 1N | * | 332011.2 | ******** | 1.8 | * |
| 56. 1N | * | 332018.7 | ******** | 1.8 | * |

| | | | | | |
|---|---|---|---|---|---|
| 57. 1N | * | 332026.1 | ******** | 1.8 | * |
| 58. 1N | * | 332033.6 | ******** | 1.8 | * |
| 59. 1N | * | 332041.0 | ******** | 1.8 | * |
| 60. 1N | * | 332048.4 | ******** | 1.8 | * |
| 61. 2NW | * | 332306.8 | ******** | 1.8 | * |
| 62. 2NW | * | 332306.8 | ******** | 1.8 | * |
| 63. 2NW | * | 332306.7 | ******** | 1.8 | * |
| 64. 2NW | * | 332306.6 | ******** | 1.8 | * |
| 65. 2NW | * | 332306.6 | ******** | 1.8 | * |
| 66. 2NW | * | 332306.5 | ******** | 1.8 | * |
| 67. 2NW | * | 332303.7 | ******** | 1.8 | * |
| 68. 2NE | * | 332326.1 | ******** | 1.8 | * |
| 69. 2NE | * | 332328.9 | ******** | 1.8 | * |
| 70. 2NE | * | 332329.5 | ******** | 1.8 | * |
| 71. 2NE | * | 332329.6 | ******** | 1.8 | * |
| 72. 2NE | * | 332329.7 | ******** | 1.8 | * |
| 73. 2NE | * | 332329.7 | ******** | 1.8 | * |
| 74. 2SE | * | 332393.9 | ******** | 1.8 | * |
| 75. 2SE | * | 332385.0 | ******** | 1.8 | * |
| 76. 2SE | * | 332376.1 | ******** | 1.8 | * |
| 77. 2SE | * | 332367.2 | ******** | 1.8 | * |
| 78. 2SE | * | 332358.3 | ******** | 1.8 | * |
| 79. 2SE | * | 332349.4 | ******** | 1.8 | * |
| 80. 2SE | * | 332340.5 | ******** | 1.8 | * |
| 81. 2SE | * | 332331.6 | ******** | 1.8 | * |
| 82. 2NE | * | 332331.3 | ******** | 1.8 | * |
| 83. 2NE | * | 332340.2 | ******** | 1.8 | * |
| 84. 2NE | * | 332349.2 | ******** | 1.8 | * |
| 85. 2NE | * | 332358.1 | ******** | 1.8 | * |



JOB: 2030 L STREET RUN: NO BUILD

DATE : 07/05/ 0
TIME : 08:07:17

RECEPTOR LOCATIONS

| RECEPTOR | | COORDINATES (M) X | Y | Z | |
|---|---|---|---|---|---|
| 86. 2NE | * | 332367.0 | ******** | 1.8 | * |
| 87. 2NE | * | 332375.9 | ******** | 1.8 | * |
| 88. 2NE | * | 332384.8 | ******** | 1.8 | * |
| 89. 2NE | * | 332393.8 | ******** | 1.8 | * |
| 90. 2NE | * | 332402.7 | ******** | 1.8 | * |
| 91. 2SE | * | 332329.5 | ******** | 1.8 | * |
| 92. 2SE | * | 332329.3 | ******** | 1.8 | * |
| 93. 2SE | * | 332329.2 | ******** | 1.8 | * |
| 94. 2SE | * | 332329.0 | ******** | 1.8 | * |
| 95. 2SE | * | 332328.8 | ******** | 1.8 | * |
| 96. 2SE | * | 332328.7 | ******** | 1.8 | * |
| 97. 2SW | * | 332306.2 | ******** | 1.8 | * |
| 98. 2SW | * | 332306.3 | ******** | 1.8 | * |

| | | | | |
|---|---|---|---|---|
| 99. 2SW | * | 332306.5 | ******** | 1.8 * |
| 100. 2SW | * | 332306.7 | ******** | 1.8 * |
| 101. 2SW | * | 332306.8 | ******** | 1.8 * |
| 102. 2SW | * | 332307.0 | ******** | 1.8 * |
| 103. 2SW | * | 332298.2 | ******** | 1.8 * |
| 104. 2SW | * | 332288.2 | ******** | 1.8 * |
| 105. 2NW | * | 332288.5 | ******** | 1.8 * |
| 106. 2NW | * | 332298.5 | ******** | 1.8 * |



JOB: 2030 L STREET RUN: NO BUILD

MODEL RESULTS

---

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-350.

| WIND ANGLE (DEGR) | * CONCENTRATION (PPM) REC1 | REC2 | REC3 | REC4 | REC5 | REC6 | REC7 | REC8 | REC9 | REC10 | REC11 | REC12 | REC13 | REC14 | REC15 | REC16 | REC17 | REC18 | REC19 | REC20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 20. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 30. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 40. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 50. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 60. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 80. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 90. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 100. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 110. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 120. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 130. * | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 140. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 150. * | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 160. * | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 170. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 180. * | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 190. * | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 200. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 210. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 220. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 230. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 240. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 250. * | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 260. * | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 270. * | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |

| | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 280. * | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 290. * | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 300. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 |
| 310. * | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 |
| 320. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 330. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 340. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 350. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ------* | | | | | | | | | | | | | | | | | | | | |
| MAX * | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 |
| DEGR. * | 130 | 140 | 150 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 150 | 130 | 130 | 130 | 130 | 300 | 300 | 130 | 130 | 130 |



JOB: 2030 L STREET RUN: NO BUILD

MODEL RESULTS

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REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-350.

WIND * CONCENTRATION
ANGLE * (PPM)
(DEGR)* REC21 REC22 REC23 REC24 REC25 REC26 REC27 REC28 REC29 REC30 REC31 REC32 REC33 REC34 REC35 REC36 REC37 REC38 REC39 REC40

| | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 10. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 20. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 30. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 40. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 50. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 60. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 80. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 90. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 100. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 |
| 110. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 |
| 120. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 130. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 140. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 150. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 160. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 170. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 180. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 190. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 200. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 210. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 220. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 230. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 240. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 250. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 260. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 270. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 280. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 290. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 300. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 310. * | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 320. * | 0.1 | 0.1 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 330. * | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 340. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 |
| 350. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 |
| ------* | | | | | | | | | | | | | | | | | | | | | |
| MAX * | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 |
| DEGR. * | 0 | 0 | 320 | 320 | 330 | 0 | 20 | 30 | 90 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 |



JOB: 2030 L STREET RUN: NO BUILD

MODEL RESULTS

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REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-350.

WIND * CONCENTRATION
ANGLE * (PPM)

| (DEGR)* | REC41 | REC42 | REC43 | REC44 | REC45 | REC46 | REC47 | REC48 | REC49 | REC50 | REC51 | REC52 | REC53 | REC54 | REC55 | REC56 | REC57 | REC58 | REC59 | REC60 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ------* | | | | | | | | | | | | | | | | | | | | |
| 0. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 20. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 30. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 40. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 50. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 60. * | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70. * | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 80. * | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 90. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 100. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 110. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 120. * | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 130. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 |
| 140. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.1 |
| 150. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 |
| 160. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 |
| 170. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 180. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 190. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |

| | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 200. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 210. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 220. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 230. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 240. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 250. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 260. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 270. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 280. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 290. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 300. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 310. * | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 320. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 330. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 340. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 350. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| MAX * | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 |
| DEGR. * | 0 | 0 | 0 | 120 | 120 | 120 | 0 | 0 | 0 | 0 | 0 | 130 | 130 | 130 | 130 | 130 | 140 | 140 | 140 | 160 |



JOB: 2030 L STREET RUN: NO BUILD

MODEL RESULTS

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REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-350.

| WIND ANGLE (DEGR) | * CONCENTRATION (PPM) * REC61 | REC62 | REC63 | REC64 | REC65 | REC66 | REC67 | REC68 | REC69 | REC70 | REC71 | REC72 | REC73 | REC74 | REC75 | REC76 | REC77 | REC78 | REC79 | REC80 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10. * | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 20. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 30. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 40. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 50. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 60. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 80. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 90. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 100. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 110. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 120. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 130. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 140. * | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 150. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 160. * | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 170. * | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 180. * | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 190. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 200. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 210. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 220. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 230. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 240. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 250. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 260. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 270. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 280. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 290. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 300. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 310. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 320. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 330. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 340. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 350. * | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ------* | | | | | | | | | | | | | | | | | | | | | |
| MAX * | 0.1 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| DEGR. * | 0 | 160 | 10 | 0 | 0 | 0 | 0 | 210 | 180 | 180 | 310 | 190 | 190 | 0 | 0 | 0 | 0 | 0 | 0 | 200 |



JOB: 2030 L STREET RUN: NO BUILD

MODEL RESULTS

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REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-350.

| WIND * CONCENTRATION<br>ANGLE * (PPM)<br>(DEGR)* REC81 | REC82 | REC83 | REC84 | REC85 | REC86 | REC87 | REC88 | REC89 | REC90 | REC91 | REC92 | REC93<br>REC94 | REC95 | REC96 | REC97 | REC98 | REC99 | RE100 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ------* | | | | | | | | | | | | | | | | | | |
| 0. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 |
| 10. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 |
| 20. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 |
| 30. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 |
| 40. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 |
| 50. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 |
| 60. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 |
| 70. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 |
| 80. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 |
| 90. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 |
| 100. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 |
| 110. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 |

| | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 120. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 |
| 130. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 |
| 140. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 |
| 150. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 |
| 160. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 |
| 170. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 |
| 180. * | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 190. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 200. * | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 210. * | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 220. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 230. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 240. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 250. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 260. * | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 270. * | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 280. * | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 290. * | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 300. * | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 310. * | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 320. * | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 330. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 340. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 350. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| MAX * | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| DEGR. * | 180 | 190 | 200 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 340 | 180 | 0 | 0 | 0 | 0 | 0 | 10 | 10 |



JOB: 2030 L STREET RUN: NO BUILD

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-350.

| WIND ANGLE (DEGR) | * CONCENTRATION (PPM) RE101 | RE102 | RE103 | RE104 | RE105 | RE106 |
|---|---|---|---|---|---|---|
| 0. * | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 20. * | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 |
| 30. * | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.1 |
| 40. * | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.1 |
| 50. * | 0.1 | 0.0 | 0.1 | 0.0 | 0.0 | 0.1 |
| 60. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 |
| 70. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 |
| 80. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 |

```
 90. *   0.1   0.1   0.0   0.0   0.0   0.1
100. *   0.1   0.1   0.0   0.0   0.0   0.0
110. *   0.1   0.1   0.1   0.0   0.0   0.0
120. *   0.1   0.1   0.1   0.0   0.0   0.0
130. *   0.1   0.1   0.1   0.0   0.0   0.0
140. *   0.1   0.1   0.1   0.0   0.0   0.1
150. *   0.1   0.1   0.1   0.0   0.0   0.1
160. *   0.1   0.1   0.1   0.0   0.0   0.1
170. *   0.1   0.1   0.0   0.0   0.0   0.1
180. *   0.1   0.1   0.0   0.0   0.0   0.0
190. *   0.0   0.0   0.0   0.0   0.0   0.0
200. *   0.0   0.0   0.0   0.0   0.0   0.0
210. *   0.0   0.0   0.0   0.0   0.0   0.0
220. *   0.0   0.0   0.0   0.0   0.0   0.0
230. *   0.0   0.0   0.0   0.0   0.0   0.0
240. *   0.0   0.0   0.0   0.0   0.0   0.0
250. *   0.0   0.0   0.0   0.0   0.0   0.0
260. *   0.0   0.0   0.0   0.0   0.0   0.0
270. *   0.0   0.0   0.0   0.0   0.0   0.0
280. *   0.0   0.0   0.0   0.0   0.0   0.0
290. *   0.0   0.0   0.0   0.0   0.0   0.0
300. *   0.0   0.0   0.0   0.0   0.0   0.0
310. *   0.0   0.0   0.0   0.0   0.0   0.0
320. *   0.0   0.0   0.0   0.0   0.0   0.0
330. *   0.0   0.0   0.0   0.0   0.0   0.0
340. *   0.0   0.0   0.0   0.0   0.0   0.0
350. *   0.0   0.0   0.0   0.0   0.0   0.0
------*-------------------------------------
MAX   *   0.1   0.1   0.1   0.0   0.0   0.1
DEGR. *   10     0    20     0     0    30

THE HIGHEST CONCENTRATION OF    0.20 PPM OCCURRED AT RECEPTOR REC63.
```

1 CAL3QHC - (DATED 95221)

CAL3QHC PC (32 BIT) VERSION 3.0.0
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Run Began on 7/05/2018 at 8:07:30

JOB: 2030 L STREET RUN: BUILD

DATE : 07/05/ 0
TIME : 08:07:30

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES
---
VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 100. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

LINK VARIABLES
---

| LINK DESCRIPTION | * LINK COORDINATES (M) * X1 | Y1 | X2 | Y2 | * LENGTH (M) | BRG (DEG) | TYPE | VPH | EF (G/MI) | H (M) | W (M) | V/C | QUEUE (VEH) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. SUMMERSB_E1ST_FF | * 332317.4 | 332318.4 | * | 183. | 0. | AG | 2101. | 1.1 | 0.0 | 22.1 | | | |
| 2. E1STWB_SUMMER_FF | * 332317.4 | 332493.3 | * | 176. | 90. | AG | 704. | 1.6 | 0.0 | 18.0 | | | |
| 3. LSTNB_E1ST_FF | * 332317.4 | 332317.4 | * | 182. | 180. | AG | 1606. | 1.2 | 0.0 | 22.4 | | | |
| 4. E1STEB_SUMMER_FF | * 332317.4 | 332138.0 | * | 179. | 270. | AG | 467. | 1.2 | 0.0 | 18.4 | | | |
| 5. LSTSB_BROADWAY_FF | * 332316.7 | 332317.4 | * | 96. | 0. | AG | 1547. | 1.6 | 0.0 | 22.4 | | | |
| 6. BROADWAYWB_LST_FF | * 332316.7 | 332488.7 | * | 172. | 90. | AG | 452. | 3.2 | 0.0 | 21.8 | | | |
| 7. LSTNB_BROADWAY_FF | * 332316.7 | 332316.7 | * | 101. | 180. | AG | 1345. | 1.5 | 0.0 | 22.4 | | | |
| 8. BROADWAYEB_LST_FF | * 332316.7 | 332151.6 | * | 165. | 270. | AG | 690. | 1.2 | 0.0 | 24.5 | | | |
| 9. SUMMERSB_E1ST_Q | * 332313.3 | 332313.5 | * | 95. | 0. | AG | 4. | 100.0 | 0.0 | 7.3 | 0.73 | 15.9 | |
| 10. E1STWB_SUMMER_Q | * 332333.0 | 332374.2 | * | 41. | 90. | AG | 7. | 100.0 | 0.0 | 3.7 | 0.88 | 6.9 | |
| 11. LSTNB_E1ST_Q | * 332322.0 | 332321.0 | * | 59. | 181. | AG | 5. | 100.0 | 0.0 | 7.3 | 0.44 | 9.8 | |
| 12. E1STEB_SUMMER_Q | * 332300.6 | 332269.1 | * | 32. | 270. | AG | 7. | 100.0 | 0.0 | 3.7 | 0.76 | 5.2 | |
| 13. LSTSB_BROADWAY_Q | * 332313.7 | 332314.2 | * | 133. | 0. | AG | 6. | 100.0 | 0.0 | 7.3 | 0.80 | 22.1 | |
| 14. BROADWAYWB_LST_Q | * 332330.4 | 332368.2 | * | 38. | 90. | AG | 7. | 100.0 | 0.0 | 3.7 | 0.62 | 6.3 | |
| 15. LSTNB_BROADWAY_Q | * 332320.9 | 332320.6 | * | 75. | 180. | AG | 5. | 100.0 | 0.0 | 7.3 | 0.42 | 12.5 | |
| 16. BROADWAYEB_LST_Q | * 332303.7 | 332263.3 | * | 40. | 269. | AG | 6. | 100.0 | 0.0 | 7.3 | 0.27 | 6.7 | |

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ADDITIONAL QUEUE LINK PARAMETERS

| LINK DESCRIPTION | * CYCLE LENGTH (SEC) | RED TIME (SEC) | CLEARANCE LOST TIME (SEC) | APPROACH VOL (VPH) | SATURATION FLOW RATE (VPH) | IDLE EM FAC (gm/hr) | SIGNAL TYPE | ARRIVAL RATE |
|---|---|---|---|---|---|---|---|---|
| 9. SUMMERSB_E1ST_Q | * 108 | 44 | 2.0 | 1302 | 3200 | 3.46 | 2 | 3 |
| 10. E1STWB_SUMMER_Q | * 108 | 84 | 2.0 | 260 | 1600 | 3.46 | 2 | 3 |
| 11. LSTNB_E1ST_Q | * 108 | 54 | 2.0 | 652 | 3200 | 3.46 | 2 | 3 |
| 12. E1STEB_SUMMER_Q | * 108 | 84 | 2.0 | 225 | 1600 | 3.46 | 2 | 3 |
| 13. LSTSB_BROADWAY_Q | * 142 | 88 | 2.0 | 906 | 3200 | 3.46 | 2 | 3 |
| 14. BROADWAYWB_LST_Q | * 142 | 108 | 2.0 | 210 | 1600 | 3.46 | 2 | 3 |
| 15. LSTNB_BROADWAY_Q | * 142 | 69 | 2.0 | 651 | 3200 | 3.46 | 2 | 3 |
| 16. BROADWAYEB_LST_Q | * 142 | 97 | 2.0 | 250 | 3200 | 3.46 | 2 | 3 |

RECEPTOR LOCATIONS

| RECEPTOR | * COORDINATES (M) X | Y | Z |
|---|---|---|---|
| 1. 4NW | * 332306.4 | ******** | 1.8 |
| 2. 4NW | * 332306.4 | ******** | 1.8 |
| 3. 4NW | * 332306.5 | ******** | 1.8 |
| 4. 4NW | * 332306.5 | ******** | 1.8 |
| 5. 4NW | * 332306.6 | ******** | 1.8 |
| 6. 4NW | * 332306.7 | ******** | 1.8 |
| 7. 4NW | * 332306.7 | ******** | 1.8 |
| 8. 4NW | * 332306.8 | ******** | 1.8 |
| 9. 4NE | * 332328.9 | ******** | 1.8 |
| 10. 4NE | * 332328.8 | ******** | 1.8 |
| 11. 4NE | * 332328.8 | ******** | 1.8 |
| 12. 4NE | * 332328.7 | ******** | 1.8 |
| 13. 4NE | * 332328.7 | ******** | 1.8 |
| 14. 4NE | * 332328.6 | ******** | 1.8 |
| 15. 4NE | * 332328.5 | ******** | 1.8 |
| 16. 4NE | * 332328.5 | ******** | 1.8 |
| 17. 4NE | * 332337.4 | ******** | 1.8 |
| 18. 4NE | * 332347.4 | ******** | 1.8 |
| 19. 4NE | * 332357.4 | ******** | 1.8 |
| 20. 4NE | * 332367.4 | ******** | 1.8 |
| 21. 4NE | * 332377.4 | ******** | 1.8 |
| 22. 4NE | * 332387.4 | ******** | 1.8 |
| 23. 4NE | * 332397.4 | ******** | 1.8 |
| 24. 4SE | * 332403.3 | ******** | 1.8 |
| 25. 4SE | * 332393.3 | ******** | 1.8 |
| 26. 4SE | * 332383.3 | ******** | 1.8 |
| 27. 4SE | * 332373.3 | ******** | 1.8 |

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|---|---|---|---|---|---|
| 28. 4SE | * | 332363.3 | ******** | 1.8 | * |
| 29. 4SE | * | 332353.3 | ******** | 1.8 | * |
| 30. 4SE | * | 332343.3 | ******** | 1.8 | * |
| 31. 4SE | * | 332333.3 | ******** | 1.8 | * |
| 32. 4SE | * | 332328.6 | ******** | 1.8 | * |
| 33. 4SE | * | 332328.6 | ******** | 1.8 | * |
| 34. 4SE | * | 332328.6 | ******** | 1.8 | * |
| 35. 4SE | * | 332328.6 | ******** | 1.8 | * |
| 36. 4SE | * | 332328.6 | ******** | 1.8 | * |
| 37. 4SE | * | 332328.6 | ******** | 1.8 | * |



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RECEPTOR LOCATIONS

| RECEPTOR | * | COORDINATES (M) X | Y | Z | * |
|---|---|---|---|---|---|
| 38. 4SE | * | 332328.6 | ******** | 1.8 | * |
| 39. 4SE | * | 332328.6 | ******** | 1.8 | * |
| 40. 4SE | * | 332328.6 | ******** | 1.8 | * |
| 41. 4SE | * | 332328.6 | ******** | 1.8 | * |
| 42. 4SE | * | 332328.6 | ******** | 1.8 | * |
| 43. 4SW | * | 332306.2 | ******** | 1.8 | * |
| 44. 4SW | * | 332306.2 | ******** | 1.8 | * |
| 45. 4SW | * | 332306.2 | ******** | 1.8 | * |
| 46. 4SW | * | 332306.2 | ******** | 1.8 | * |
| 47. 4SW | * | 332306.2 | ******** | 1.8 | * |
| 48. 4SW | * | 332306.2 | ******** | 1.8 | * |
| 49. 4SW | * | 332306.2 | ******** | 1.8 | * |
| 50. 4SW | * | 332306.2 | ******** | 1.8 | * |
| 51. 4SW | * | 332306.2 | ******** | 1.8 | * |
| 52. 4SW | * | 332306.2 | ******** | 1.8 | * |
| 53. 4SW | * | 332306.2 | ******** | 1.8 | * |
| 54. 4SW | * | 332297.3 | ******** | 1.8 | * |
| 55. 4SW | * | 332287.3 | ******** | 1.8 | * |
| 56. 4SW | * | 332277.3 | ******** | 1.8 | * |
| 57. 4SW | * | 332267.3 | ******** | 1.8 | * |
| 58. 4SW | * | 332257.3 | ******** | 1.8 | * |
| 59. 4SW | * | 332247.3 | ******** | 1.8 | * |
| 60. 4SW | * | 332237.3 | ******** | 1.8 | * |
| 61. 4SW | * | 332227.3 | ******** | 1.8 | * |
| 62. 4NW | * | 332228.0 | ******** | 1.8 | * |
| 63. 4NW | * | 332238.0 | ******** | 1.8 | * |
| 64. 4NW | * | 332248.0 | ******** | 1.8 | * |
| 65. 4NW | * | 332258.0 | ******** | 1.8 | * |
| 66. 4NW | * | 332268.0 | ******** | 1.8 | * |
| 67. 4NW | * | 332278.0 | ******** | 1.8 | * |
| 68. 4NW | * | 332288.0 | ******** | 1.8 | * |
| 69. 4NW | * | 332298.0 | ******** | 1.8 | * |

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|---|---|---|---|---|---|
| 70. 7NW | * | 332305.6 | ******** | 1.8 | * |
| 71. 7NW | * | 332305.7 | ******** | 1.8 | * |
| 72. 7NW | * | 332305.8 | ******** | 1.8 | * |
| 73. 7NW | * | 332305.8 | ******** | 1.8 | * |
| 74. 7NW | * | 332305.9 | ******** | 1.8 | * |
| 75. 7NE | * | 332328.3 | ******** | 1.8 | * |
| 76. 7NE | * | 332328.3 | ******** | 1.8 | * |
| 77. 7NE | * | 332328.2 | ******** | 1.8 | * |
| 78. 7NE | * | 332328.1 | ******** | 1.8 | * |
| 79. 7NE | * | 332328.1 | ******** | 1.8 | * |
| 80. 7NE | * | 332328.0 | ******** | 1.8 | * |
| 81. 7NE | * | 332336.7 | ******** | 1.8 | * |
| 82. 7NE | * | 332346.7 | ******** | 1.8 | * |
| 83. 7NE | * | 332356.7 | ******** | 1.8 | * |
| 84. 7NE | * | 332366.7 | ******** | 1.8 | * |
| 85. 7NE | * | 332376.7 | ******** | 1.8 | * |
| 86. 7NE | * | 332386.7 | ******** | 1.8 | * |
| 87. 7NE | * | 332396.7 | ******** | 1.8 | * |



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RECEPTOR LOCATIONS

| RECEPTOR | * | COORDINATES (M) X | Y | Z | * |
|---|---|---|---|---|---|
| 88. 7NE | * | 332406.7 | ******** | 1.8 | * |
| 89. 7NE | * | 332416.7 | ******** | 1.8 | * |
| 90. 7SE | * | 332418.6 | ******** | 1.8 | * |
| 91. 7SE | * | 332408.6 | ******** | 1.8 | * |
| 92. 7SE | * | 332398.6 | ******** | 1.8 | * |
| 93. 7SE | * | 332388.6 | ******** | 1.8 | * |
| 94. 7SE | * | 332378.6 | ******** | 1.8 | * |
| 95. 7SE | * | 332368.6 | ******** | 1.8 | * |
| 96. 7SE | * | 332358.6 | ******** | 1.8 | * |
| 97. 7SE | * | 332348.6 | ******** | 1.8 | * |
| 98. 7SE | * | 332338.6 | ******** | 1.8 | * |
| 99. 7SE | * | 332328.6 | ******** | 1.8 | * |
| 100. 7SE | * | 332327.9 | ******** | 1.8 | * |
| 101. 7SE | * | 332327.9 | ******** | 1.8 | * |
| 102. 7SE | * | 332327.9 | ******** | 1.8 | * |
| 103. 7SE | * | 332327.9 | ******** | 1.8 | * |
| 104. 7SE | * | 332327.9 | ******** | 1.8 | * |
| 105. 7SE | * | 332327.9 | ******** | 1.8 | * |
| 106. 7SW | * | 332305.5 | ******** | 1.8 | * |
| 107. 7SW | * | 332305.5 | ******** | 1.8 | * |
| 108. 7SW | * | 332305.5 | ******** | 1.8 | * |
| 109. 7SW | * | 332305.5 | ******** | 1.8 | * |
| 110. 7SW | * | 332305.5 | ******** | 1.8 | * |
| 111. 7SW | * | 332305.5 | ******** | 1.8 | * |

| | | | | | |
|---|---|---|---|---|---|
| 112. 7SW | * | 332296.7 | ******** | 1.8 | * |
| 113. 7SW | * | 332286.7 | ******** | 1.8 | * |
| 114. 7SW | * | 332276.7 | ******** | 1.8 | * |
| 115. 7SW | * | 332266.7 | ******** | 1.8 | * |
| 116. 7SW | * | 332256.7 | ******** | 1.8 | * |
| 117. 7SW | * | 332246.7 | ******** | 1.8 | * |
| 118. 7SW | * | 332236.7 | ******** | 1.8 | * |
| 119. 7SW | * | 332226.7 | ******** | 1.8 | * |
| 120. 7SW | * | 332216.7 | ******** | 1.8 | * |
| 121. 7NW | * | 332221.6 | ******** | 1.8 | * |
| 122. 7NW | * | 332231.6 | ******** | 1.8 | * |
| 123. 7NW | * | 332241.6 | ******** | 1.8 | * |
| 124. 7NW | * | 332251.6 | ******** | 1.8 | * |
| 125. 7NW | * | 332261.6 | ******** | 1.8 | * |
| 126. 7NW | * | 332271.6 | ******** | 1.8 | * |
| 127. 7NW | * | 332281.6 | ******** | 1.8 | * |
| 128. 7NW | * | 332291.6 | ******** | 1.8 | * |
| 129. 7NW | * | 332301.6 | ******** | 1.8 | * |
| 130. 4NE | * | 332328.6 | ******** | 1.8 | * |
| 131. 7NE | * | 332328.1 | ******** | 1.8 | * |
| 132. 7SW | * | 332304.7 | ******** | 1.8 | * |
| 133. 7NW | * | 332304.7 | ******** | 1.8 | * |



JOB: 2030 L STREET RUN: BUILD

MODEL RESULTS

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REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-350.

| WIND ANGLE (DEGR) | * | CONCENTRATION (PPM) REC1 | REC2 | REC3 | REC4 | REC5 | REC6 | REC7 | REC8 | REC9 | REC10 | REC11 | REC12 | REC13 | REC14 | REC15 | REC16 | REC17 | REC18 | REC19 | REC20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 20. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 30. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 40. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 50. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 60. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 80. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 90. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 100. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 |
| 110. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 |
| 120. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 130. | * | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 140. * | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 150. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 160. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 170. * | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 180. * | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 190. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 200. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 |
| 210. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 220. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 230. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 240. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 250. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 260. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 270. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 280. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 290. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 |
| 300. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 |
| 310. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 |
| 320. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 |
| 330. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 |
| 340. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 |
| 350. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 |
| ------*---------- | | | | | | | | | | | | | | | | | | | | | |
| MAX * | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | |
| DEGR. * | 0 | 0 | 170 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 100 | 100 | 100 | |



JOB: 2030 L STREET RUN: BUILD

MODEL RESULTS

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REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-350.

WIND * CONCENTRATION
ANGLE * (PPM)
(DEGR)* REC21 REC22 REC23 REC24 REC25 REC26 REC27 REC28 REC29 REC30 REC31 REC32 REC33 REC34 REC35 REC36 REC37 REC38 REC39 REC40

| | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ------*---------- | | | | | | | | | | | | | | | | | | | | | |
| 0. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | |
| 10. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 20. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 30. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 40. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 50. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 60. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 70. * | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 80. * | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 90. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |

| | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 100. * | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 110. * | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 120. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 130. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 140. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 150. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 160. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 170. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 180. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 190. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 200. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 210. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 220. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 230. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 240. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 250. * | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 260. * | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 270. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 280. * | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 290. * | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 300. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 310. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 320. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 330. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 340. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 350. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| ------*---------- | | | | | | | | | | | | | | | | | | | | | |
| MAX * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| DEGR. * | 100 | 100 | 100 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 0 | 0 | 0 | 350 | 180 | 0 | 0 | 0 | 0 |



JOB: 2030 L STREET RUN: BUILD

MODEL RESULTS

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REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-350.

WIND * CONCENTRATION
ANGLE * (PPM)
(DEGR)* REC41 REC42 REC43 REC44 REC45 REC46 REC47 REC48 REC49 REC50 REC51 REC52 REC53 REC54 REC55 REC56 REC57 REC58 REC59 REC60

| | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10. * | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 20. * | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 30. * | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 40. * | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 50. * | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 60. * | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70. * | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 80. * | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 90. * | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 100. * | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 110. * | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 120. * | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 130. * | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 140. * | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 150. * | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 160. * | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 170. * | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 180. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 190. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 200. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 210. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 220. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 230. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 240. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 250. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 260. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 270. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 280. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 290. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 300. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 310. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 320. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 330. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 340. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 350. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| MAX * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| DEGR. * | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 10 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 |



JOB: 2030 L STREET RUN: BUILD

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-350.

| WIND ANGLE (DEGR) | * CONCENTRATION (PPM) * REC61 | REC62 | REC63 | REC64 | REC65 | REC66 | REC67 | REC68 | REC69 | REC70 | REC71 | REC72 | REC73 | REC74 | REC75 | REC76 | REC77 | REC78 | REC79 | REC80 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 10. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 30. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 40. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 50. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 60. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 80. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 90. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 100. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 110. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 120. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 130. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 140. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 150. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 160. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 170. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 180. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 |
| 190. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 200. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 210. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 220. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 230. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 240. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 250. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 260. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 270. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 280. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 290. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 300. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 310. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 320. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 330. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 340. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 350. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| ------* | | | | | | | | | | | | | | | | | | | | | |
| MAX * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| DEGR. * | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 10 | 350 | 0 | 0 | 0 | 0 | 0 |



JOB: 2030 L STREET RUN: BUILD

MODEL RESULTS

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REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-350.

WIND * CONCENTRATION
ANGLE * (PPM)
(DEGR)* REC81 REC82 REC83 REC84 REC85 REC86 REC87 REC88 REC89 REC90 REC91 REC92 REC93

| | REC94 | REC95 | REC96 | REC97 | REC98 | REC99 | RE100 |
|---|---|---|---|---|---|---|---|
| 0. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 20. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 30. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 40. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 50. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 60. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 80. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 90. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 |
| 100. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 110. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 120. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 130. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 140. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 150. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 160. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 170. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 180. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 190. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 200. * | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 210. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 220. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 230. * | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 240. * | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 250. * | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 260. * | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 |
| 270. * | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 280. * | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 290. * | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 300. * | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 310. * | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 320. * | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 330. * | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 340. * | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 350. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| MAX * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| DEGR. * | 90 | 90 | 90 | 90 | 90 | 100 | 100 |

| | REC94 | REC95 | REC96 | REC97 | REC98 | REC99 | RE100 |
|---|---|---|---|---|---|---|---|
| 0. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 20. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 30. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 40. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 50. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 60. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 80. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 90. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 |
| 100. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 110. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 120. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 130. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 140. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 150. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 160. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 170. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 180. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 190. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 200. * | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 210. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 220. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 230. * | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 240. * | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 250. * | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 260. * | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 |
| 270. * | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 280. * | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 290. * | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 300. * | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 310. * | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 320. * | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 330. * | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 340. * | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 350. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| MAX * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| DEGR. * | 100 | 100 | 100 | 100 | 50 | 50 | 50 |

| | REC94 | REC95 | REC96 | REC97 | REC98 | REC99 | RE100 |
|---|---|---|---|---|---|---|---|
| 0. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 20. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 30. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 40. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 50. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 60. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 70. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 80. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 90. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 |
| 100. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 110. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 120. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 130. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 140. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 150. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 160. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 170. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 180. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 190. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 200. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 210. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 220. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 230. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 240. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 250. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 260. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 270. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 280. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 290. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 300. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 310. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 320. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 330. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 340. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 350. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| MAX * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| DEGR. * | 50 | 50 | 50 | 50 | 50 | 0 | 0 |



JOB: 2030 L STREET RUN: BUILD

MODEL RESULTS

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REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-350.

| WIND ANGLE (DEGR) | * CONCENTRATION (PPM) * | RE101 | RE102 | RE103 | RE104 | RE105 | RE106 | RE107 | RE108 | RE109 | RE110 | RE111 | RE112 | RE113 | RE114 | RE115 | RE116 | RE117 | RE118 | RE119 | RE120 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0. | * | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 20. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 30. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 40. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 50. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 60. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 80. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 90. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 100. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 110. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 120. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 130. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 140. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 150. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 160. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 170. | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 180. | * | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 190. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 200. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 210. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 220. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 230. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 240. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 250. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 260. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 270. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 280. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 290. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 300. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 310. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 320. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 330. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 340. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 350. | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| MAX | * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| DEGR. | * | 180 | 180 | 190 | 0 | 0 | 0 | 0 | 10 | 10 | 10 | 10 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



JOB: 2030 L STREET RUN: BUILD

MODEL RESULTS

---

REMARKS : In search of the angle corresponding to
the maximum concentration, only the first

angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-350.

| WIND ANGLE (DEGR) | * CONCENTRATION (PPM) * RE121 | RE122 | RE123 | RE124 | RE125 | RE126 | RE127 | RE128 | RE129 | RE130 | RE131 | RE132 | RE133 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0. | * 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 |
| 10. | * 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.1 | 0.1 |
| 20. | * 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.1 | 0.1 |
| 30. | * 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.1 | 0.1 |
| 40. | * 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 |
| 50. | * 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 |
| 60. | * 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.1 | 0.1 |
| 70. | * 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.1 | 0.1 |
| 80. | * 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.2 | 0.1 |
| 90. | * 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 |
| 100. | * 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 |
| 110. | * 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 120. | * 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| 130. | * 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| 140. | * 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 |
| 150. | * 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 |
| 160. | * 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.1 | 0.1 |
| 170. | * 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.1 | 0.1 |
| 180. | * 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.1 | 0.0 |
| 190. | * 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 |
| 200. | * 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 |
| 210. | * 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 |
| 220. | * 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 230. | * 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 |
| 240. | * 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 |
| 250. | * 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 |
| 260. | * 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 |
| 270. | * 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 |
| 280. | * 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 |
| 290. | * 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 |
| 300. | * 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 |
| 310. | * 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 |
| 320. | * 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 |
| 330. | * 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 |
| 340. | * 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 |
| 350. | * 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 |
| MAX | * 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 |
| DEGR. | * 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | 10 | 0 | 0 | 80 | 100 |

THE HIGHEST CONCENTRATION OF 0.20 PPM OCCURRED AT RECEPTOR REC50.

1 CAL3QHC - (DATED 95221)

CAL3QHC PC (32 BIT) VERSION 3.0.0
(C) COPYRIGHT 1993-2000, TRINITY CONSULTANTS

Run Began on 7/05/2018 at 8:07:43

JOB: 2030 L STREET RUN: BUILD

DATE : 07/05/ 0
TIME : 08:07:43

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES
---
VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 100. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

LINK VARIABLES
---
LINK DESCRIPTION * LINK COORDINATES (M) * LENGTH BRG TYPE VPH EF H W V/C QUEUE
* X1 Y1 X2 Y2 * (M) (DEG) (G/MI) (M) (M) (VEH)
---*---*---

1. SUMMERSB_DRYDOCK_FF * 332054.4 ******** 331934.3 ******** * 162. 312. AG 2598. 1.2 0.0 30.0
2. DRYDOCKWB_SUMMER_FF * 332051.2 ******** 332079.8 ******** * 41. 44. AG 1009. 1.1 0.0 23.2
3. DRYDOCKWB_SUMMER_FF * 332079.8 ******** 332148.4 ******** * 70. 78. AG 1009. 1.1 0.0 23.2
4. SUMMERNB_DRYDOCK_FF * 332054.4 ******** 332250.4 ******** * 267. 133. AG 2323. 1.3 0.0 29.3
5. PAPPASEB_SUMMER_FF * 332043.9 ******** 332046.3 ******** * 138. 179. AG 496. 1.1 0.0 16.6
6. SUMMERSB_FREIGHT_FF * 332318.4 ******** 332318.0 ******** * 55. 360. AG 2321. 1.4 0.0 23.0
7. SUMMERSB_FREIGHT_FF * 332318.0 ******** 332298.1 ******** * 70. 344. AG 2321. 1.4 0.0 23.0
8. FREIGHTWB_SUMMER_FF * 332486.2 ******** 332319.3 ******** * 187. 297. AG 31. 1.2 0.0 13.8
9. SUMMERNB_FREIGHT_FF * 332318.4 ******** 332316.4 ******** * 120. 181. AG 2305. 1.2 0.0 22.5
10. FEDEXEB_FREIGHT_FF * 332318.4 ******** 332278.3 ******** * 40. 271. AG 47. 1.1 0.0 15.1
11. SUMMERSB_DRYDOCK_Q * 332038.1 ******** 331947.4 ******** * 122. 312. AG 5. 100.0 0.0 11.0 0.67 20.3
12. DRYDOCKWB_SUMMER_Q * 332060.2 ******** 332279.9 ******** * 297. 48. AG 7. 100.0 0.0 7.3 1.09 49.5
13. SUMMERNB_DRYDOCK_Q * 332069.4 ******** 332145.2 ******** * 105. 134. AG 6. 100.0 0.0 11.0 0.66 17.4
14. PAPPASEB_SUMMER_Q * 332046.7 ******** 332047.1 ******** * 16. 178. AG 7. 100.0 0.0 3.7 0.37 2.6
15. SUMMERSBTRT_FREIGHT_* 332313.7 ******** 332307.6 ******** * 114. 357. AG 4. 100.0 0.0

7.3 0.87 19.1
16. SUMMERSBLT_FREIGHT_Q* 332318.3 ******** 332318.3 ******** * 0. **** AG 3. 100.0 0.0 3.7 0.00 0.0
17. FREIGHTWB_SUMMER_Q * 332417.4 ******** 332414.6 ******** * 3. 297. AG 6. 100.0 0.0 3.7 0.06 0.5
18. SUMMERNBTRT_FREIGHT_* 332322.8 ******** 332319.6 ******** * 77. 182. AG 4. 100.0 0.0 7.3 0.59 12.8
19. SUMMERNBLT_FREIGHT_Q* 332317.7 ******** 332317.7 ******** * 0. 180. AG 3. 100.0 0.0 3.7 0.00 0.0
20. FEDEXEB_FREIGHT_Q * 332305.2 ******** 332302.1 ******** * 3. 264. AG 6. 100.0 0.0 3.7 0.06 0.5



JOB: 2030 L STREET RUN: BUILD

DATE : 07/05/ 0
TIME : 08:07:43

ADDITIONAL QUEUE LINK PARAMETERS

| LINK DESCRIPTION | * | CYCLE LENGTH (SEC) | RED TIME (SEC) | CLEARANCE LOST TIME (SEC) | APPROACH VOL (VPH) | SATURATION FLOW RATE (VPH) | IDLE EM FAC (gm/hr) | SIGNAL TYPE | ARRIVAL RATE |
|---|---|---|---|---|---|---|---|---|---|
| 11. SUMMERSB_DRYDOCK_Q | * | 100 | 52 | 2.0 | 1406 | 4800 | 3.46 | 2 | 3 |
| 12. DRYDOCKWB_SUMMER_Q | * | 100 | 75 | 2.0 | 731 | 3200 | 3.46 | 2 | 3 |
| 13. SUMMERNB_DRYDOCK_Q | * | 100 | 66 | 2.0 | 951 | 4800 | 3.46 | 2 | 3 |
| 14. PAPPASEB_SUMMER_Q | * | 100 | 75 | 2.0 | 125 | 1600 | 3.46 | 2 | 3 |
| 15. SUMMERSBTRT_FREIGHT_* | | 106 | 50 | 2.0 | 1372 | 3200 | 3.46 | 2 | 3 |
| 16. SUMMERSBLT_FREIGHT_Q* | | 106 | 35 | 2.0 | 0 | 1600 | 3.46 | 2 | 3 |
| 17. FREIGHTWB_SUMMER_Q | * | 106 | 71 | 2.0 | 26 | 1600 | 3.46 | 2 | 3 |
| 18. SUMMERNBTRT_FREIGHT_* | | 106 | 50 | 2.0 | 923 | 3200 | 3.46 | 2 | 3 |
| 19. SUMMERNBLT_FREIGHT_Q* | | 106 | 35 | 2.0 | 5 | 1600 | 3.46 | 2 | 3 |
| 20. FEDEXEB_FREIGHT_Q | * | 106 | 71 | 2.0 | 26 | 1600 | 3.46 | 2 | 3 |

RECEPTOR LOCATIONS

| RECEPTOR | * | COORDINATES (M) X | Y | Z |
|---|---|---|---|---|
| 1. 1N | * | 332053.0 | ******** | 1.8 |
| 2. 1N | * | 332056.5 | ******** | 1.8 |
| 3. 1N | * | 332063.4 | ******** | 1.8 |
| 4. 1N | * | 332070.2 | ******** | 1.8 |
| 5. 1N | * | 332077.4 | ******** | 1.8 |
| 6. 1N | * | 332087.2 | ******** | 1.8 |
| 7. 1N | * | 332097.0 | ******** | 1.8 |
| 8. 1E | * | 332101.8 | ******** | 1.8 |
| 9. 1E | * | 332092.0 | ******** | 1.8 |
| 10. 1E | * | 332085.7 | ******** | 1.8 |
| 11. 1E | * | 332078.8 | ******** | 1.8 |
| 12. 1E | * | 332072.0 | ******** | 1.8 |
| 13. 1E | * | 332069.7 | ******** | 1.8 |
| 14. 1E | * | 332071.7 | ******** | 1.8 |

| | | | | | |
|---|---|---|---|---|---|
| 15. 1E | * | 332079.0 | ******** | 1.8 | * |
| 16. 1E | * | 332086.4 | ******** | 1.8 | * |
| 17. 1E | * | 332093.7 | ******** | 1.8 | * |
| 18. 1E | * | 332101.0 | ******** | 1.8 | * |
| 19. 1E | * | 332108.4 | ******** | 1.8 | * |
| 20. 1E | * | 332115.7 | ******** | 1.8 | * |
| 21. 1S | * | 332093.6 | ******** | 1.8 | * |
| 22. 1S | * | 332086.3 | ******** | 1.8 | * |
| 23. 1S | * | 332079.0 | ******** | 1.8 | * |
| 24. 1S | * | 332071.6 | ******** | 1.8 | * |
| 25. 1S | * | 332064.3 | ******** | 1.8 | * |
| 26. 1S | * | 332056.9 | ******** | 1.8 | * |
| 27. 1S | * | 332052.8 | ******** | 1.8 | * |
| 28. 1S | * | 332052.9 | ******** | 1.8 | * |
| 29. 1S | * | 332053.1 | ******** | 1.8 | * |
| 30. 1S | * | 332053.3 | ******** | 1.8 | * |
| 31. 1S | * | 332053.4 | ******** | 1.8 | * |
| 32. 1S | * | 332053.6 | ******** | 1.8 | * |
| 33. 1S | * | 332053.8 | ******** | 1.8 | * |
| 34. 1W | * | 332037.2 | ******** | 1.8 | * |
| 35. 1W | * | 332037.0 | ******** | 1.8 | * |



JOB: 2030 L STREET RUN: BUILD

DATE : 07/05/ 0
TIME : 08:07:43

RECEPTOR LOCATIONS

| RECEPTOR | * | COORDINATES (M) X | Y | Z | * |
|---|---|---|---|---|---|
| 36. 1W | * | 332036.8 | ******** | 1.8 | * |
| 37. 1W | * | 332036.6 | ******** | 1.8 | * |
| 38. 1W | * | 332036.5 | ******** | 1.8 | * |
| 39. 1W | * | 332036.3 | ******** | 1.8 | * |
| 40. 1W | * | 332036.1 | ******** | 1.8 | * |
| 41. 1W | * | 332035.9 | ******** | 1.8 | * |
| 42. 1W | * | 332036.9 | ******** | 1.8 | * |
| 43. 1W | * | 332029.5 | ******** | 1.8 | * |
| 44. 1W | * | 332022.1 | ******** | 1.8 | * |
| 45. 1W | * | 332014.6 | ******** | 1.8 | * |
| 46. 1W | * | 332007.2 | ******** | 1.8 | * |
| 47. 1W | * | 331999.8 | ******** | 1.8 | * |
| 48. 1W | * | 331992.3 | ******** | 1.8 | * |
| 49. 1W | * | 331984.9 | ******** | 1.8 | * |
| 50. 1W | * | 331977.5 | ******** | 1.8 | * |
| 51. 1W | * | 331970.1 | ******** | 1.8 | * |
| 52. 1N | * | 331989.0 | ******** | 1.8 | * |
| 53. 1N | * | 331996.4 | ******** | 1.8 | * |
| 54. 1N | * | 332003.8 | ******** | 1.8 | * |
| 55. 1N | * | 332011.2 | ******** | 1.8 | * |
| 56. 1N | * | 332018.7 | ******** | 1.8 | * |

| | | | | |
|---|---|---|---|---|
| 57. 1N | * | 332026.1 | ******** | 1.8 * |
| 58. 1N | * | 332033.6 | ******** | 1.8 * |
| 59. 1N | * | 332041.0 | ******** | 1.8 * |
| 60. 1N | * | 332048.4 | ******** | 1.8 * |
| 61. 2NW | * | 332306.8 | ******** | 1.8 * |
| 62. 2NW | * | 332306.8 | ******** | 1.8 * |
| 63. 2NW | * | 332306.7 | ******** | 1.8 * |
| 64. 2NW | * | 332306.6 | ******** | 1.8 * |
| 65. 2NW | * | 332306.6 | ******** | 1.8 * |
| 66. 2NW | * | 332306.5 | ******** | 1.8 * |
| 67. 2NW | * | 332303.7 | ******** | 1.8 * |
| 68. 2NE | * | 332326.1 | ******** | 1.8 * |
| 69. 2NE | * | 332328.9 | ******** | 1.8 * |
| 70. 2NE | * | 332329.5 | ******** | 1.8 * |
| 71. 2NE | * | 332329.6 | ******** | 1.8 * |
| 72. 2NE | * | 332329.7 | ******** | 1.8 * |
| 73. 2NE | * | 332329.7 | ******** | 1.8 * |
| 74. 2SE | * | 332393.9 | ******** | 1.8 * |
| 75. 2SE | * | 332385.0 | ******** | 1.8 * |
| 76. 2SE | * | 332376.1 | ******** | 1.8 * |
| 77. 2SE | * | 332367.2 | ******** | 1.8 * |
| 78. 2SE | * | 332358.3 | ******** | 1.8 * |
| 79. 2SE | * | 332349.4 | ******** | 1.8 * |
| 80. 2SE | * | 332340.5 | ******** | 1.8 * |
| 81. 2SE | * | 332331.6 | ******** | 1.8 * |
| 82. 2NE | * | 332331.3 | ******** | 1.8 * |
| 83. 2NE | * | 332340.2 | ******** | 1.8 * |
| 84. 2NE | * | 332349.2 | ******** | 1.8 * |
| 85. 2NE | * | 332358.1 | ******** | 1.8 * |



JOB: 2030 L STREET RUN: BUILD

DATE : 07/05/ 0
TIME : 08:07:43

RECEPTOR LOCATIONS

| RECEPTOR | * | COORDINATES (M) X | Y | Z * |
|---|---|---|---|---|
| 86. 2NE | * | 332367.0 | ******** | 1.8 * |
| 87. 2NE | * | 332375.9 | ******** | 1.8 * |
| 88. 2NE | * | 332384.8 | ******** | 1.8 * |
| 89. 2NE | * | 332393.8 | ******** | 1.8 * |
| 90. 2NE | * | 332402.7 | ******** | 1.8 * |
| 91. 2SE | * | 332329.5 | ******** | 1.8 * |
| 92. 2SE | * | 332329.3 | ******** | 1.8 * |
| 93. 2SE | * | 332329.2 | ******** | 1.8 * |
| 94. 2SE | * | 332329.0 | ******** | 1.8 * |
| 95. 2SE | * | 332328.8 | ******** | 1.8 * |
| 96. 2SE | * | 332328.7 | ******** | 1.8 * |
| 97. 2SW | * | 332306.2 | ******** | 1.8 * |
| 98. 2SW | * | 332306.3 | ******** | 1.8 * |

| | | | | |
|---|---|---|---|---|
| 99. 2SW | * | 332306.5 | ******** | 1.8 * |
| 100. 2SW | * | 332306.7 | ******** | 1.8 * |
| 101. 2SW | * | 332306.8 | ******** | 1.8 * |
| 102. 2SW | * | 332307.0 | ******** | 1.8 * |
| 103. 2SW | * | 332298.2 | ******** | 1.8 * |
| 104. 2SW | * | 332288.2 | ******** | 1.8 * |
| 105. 2NW | * | 332288.5 | ******** | 1.8 * |
| 106. 2NW | * | 332298.5 | ******** | 1.8 * |



JOB: 2030 L STREET RUN: BUILD

MODEL RESULTS

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REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-350.

| WIND ANGLE (DEGR) | * CONCENTRATION (PPM) REC1 | REC2 | REC3 | REC4 | REC5 | REC6 | REC7 | REC8 | REC9 | REC10 | REC11 | REC12 | REC13 | REC14 | REC15 | REC16 | REC17 | REC18 | REC19 | REC20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 20. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 30. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 40. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 50. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 60. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 80. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 90. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 100. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 110. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 120. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 130. * | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 140. * | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 150. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 160. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 170. * | 0.2 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 180. * | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 190. * | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 200. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 210. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 220. * | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 230. * | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 240. * | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 250. * | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 260. * | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 270. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |

| | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 280. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 290. * | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 |
| 300. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 |
| 310. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.1 | 0.1 |
| 320. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 330. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 340. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 350. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ------*--- | | | | | | | | | | | | | | | | | | | | | |
| MAX * | 0.2 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 |
| DEGR. * | 170 | 140 | 140 | 150 | 0 | 50 | 0 | 0 | 0 | 150 | 140 | 130 | 130 | 130 | 280 | 290 | 300 | 300 | 130 | 130 |



JOB: 2030 L STREET RUN: BUILD

MODEL RESULTS

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REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-350.

| WIND * CONCENTRATION<br>ANGLE * (PPM)<br>(DEGR)* REC21 REC22 REC23 REC24 REC25 REC26 REC27 REC28 REC29 REC30 REC31 REC32 REC33<br>REC34 REC35 REC36 REC37 REC38 REC39 REC40 | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ------*--- | | | | | | | | | | | | | | | | | | | | | |
| 0. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | | |
| 10. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | |
| 20. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | |
| 30. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 40. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 50. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 60. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 70. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | |
| 80. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | |
| 90. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | |
| 100. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | |
| 110. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | |
| 120. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | |
| 130. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 140. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 150. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 160. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 170. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 180. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 190. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 200. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 210. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 220. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 230. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |

| | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 240. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 250. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 260. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 270. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 280. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 290. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 300. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 310. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 320. * | 0.1 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 330. * | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 |
| 340. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| 350. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 |
| ------*---------- | | | | | | | | | | | | | | | | | | | | | |
| MAX * | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| DEGR. * | 0 | 320 | 320 | 320 | 330 | 350 | 10 | 20 | 40 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 110 | 0 | 0 |



JOB: 2030 L STREET RUN: BUILD

MODEL RESULTS

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REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-350.

| WIND * CONCENTRATION<br>ANGLE * (PPM)<br>(DEGR)* | REC41 | REC42 | REC43 | REC44 | REC45 | REC46 | REC47 | REC48 | REC49 | REC50 | REC51 | REC52 | REC53 | REC54 | REC55 | REC56 | REC57 | REC58 | REC59 | REC60 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ------*---------- | | | | | | | | | | | | | | | | | | | | |
| 0. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 20. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 30. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 40. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 50. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 60. * | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70. * | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 80. * | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 90. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 100. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 110. * | 0.1 | 0.1 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 120. * | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 130. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 140. * | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 |
| 150. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 |
| 160. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 |
| 170. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 180. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 190. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |

| | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 200. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 210. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 220. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 230. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 240. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 250. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 260. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 270. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 280. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 290. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 300. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 310. * | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 320. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| 330. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 340. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 350. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MAX * | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| DEGR. * | 0 | 0 | 110 | 110 | 120 | 120 | 120 | 0 | 0 | 0 | 0 | 130 | 130 | 130 | 130 | 140 | 140 | 140 | 140 | 150 |



JOB: 2030 L STREET RUN: BUILD

MODEL RESULTS

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REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-350.

| WIND ANGLE (DEGR) | * CONCENTRATION (PPM) * REC61 | REC62 | REC63 | REC64 | REC65 | REC66 | REC67 | REC68 | REC69 | REC70 | REC71 | REC72 | REC73 | REC74 | REC75 | REC76 | REC77 | REC78 | REC79 | REC80 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0. * | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10. * | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 20. * | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 30. * | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 40. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 50. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 60. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 80. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 90. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 100. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 110. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 120. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 130. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 140. * | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 150. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 160. * | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 170. * | 0.1 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 180. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 190. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 200. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 210. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 220. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 230. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 240. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 250. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 260. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 270. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 280. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 290. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 300. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 310. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 320. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 330. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 340. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 350. * | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ------*---------- | | | | | | | | | | | | | | | | | | | | | |
| MAX * | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.2 | 0.2 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| DEGR. * | 140 | 0 | 10 | 20 | 0 | 0 | 130 | 200 | 180 | 180 | 310 | 190 | 190 | 0 | 0 | 0 | 0 | 0 | 0 | 200 |



JOB: 2030 L STREET RUN: BUILD

MODEL RESULTS

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REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-350.

| WIND * CONCENTRATION<br>ANGLE * (PPM)<br>(DEGR)* REC81 REC82 REC83 REC84 REC85 REC86 REC87 REC88 REC89 REC90 REC91 REC92 REC93<br>REC94 REC95 REC96 REC97 REC98 REC99 RE100 | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ------*---------- | | | | | | | | | | | | | | | | | | | | | |
| 0. * | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 |
| 10. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.2 |
| 20. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 |
| 30. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 |
| 40. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 |
| 50. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 |
| 60. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 |
| 70. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 |
| 80. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 |
| 90. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 |
| 100. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 |
| 110. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 |

| | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 120. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 |
| 130. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 |
| 140. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 |
| 150. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 |
| 160. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 |
| 170. * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 |
| 180. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 190. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 200. * | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 210. * | 0.1 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 220. * | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 230. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 240. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 250. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 260. * | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 270. * | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 280. * | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 290. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 300. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 310. * | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 320. * | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 330. * | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 340. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 350. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| MAX * | 0.1 | 0.2 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 |
| DEGR. * | 0 | 210 | 200 | 290 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 340 | 350 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |



JOB: 2030 L STREET RUN: BUILD

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-350.

| WIND ANGLE (DEGR) * | CONCENTRATION (PPM) RE101 | RE102 | RE103 | RE104 | RE105 | RE106 |
|---|---|---|---|---|---|---|
| 0. * | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 20. * | 0.2 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 |
| 30. * | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.1 |
| 40. * | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.1 |
| 50. * | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 |
| 60. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.1 | 0.1 |
| 70. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.1 | 0.1 |
| 80. * | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 |

```
 90. *   0.1   0.1   0.1   0.0   0.0   0.1
100. *   0.1   0.1   0.1   0.0   0.0   0.1
110. *   0.1   0.1   0.1   0.0   0.0   0.0
120. *   0.1   0.1   0.1   0.0   0.0   0.0
130. *   0.1   0.1   0.1   0.0   0.0   0.0
140. *   0.1   0.1   0.1   0.0   0.0   0.1
150. *   0.1   0.1   0.1   0.0   0.0   0.1
160. *   0.1   0.1   0.1   0.0   0.0   0.1
170. *   0.1   0.1   0.1   0.0   0.0   0.1
180. *   0.1   0.1   0.0   0.0   0.0   0.0
190. *   0.0   0.0   0.0   0.0   0.0   0.0
200. *   0.0   0.0   0.0   0.0   0.0   0.0
210. *   0.0   0.0   0.0   0.0   0.0   0.0
220. *   0.0   0.0   0.0   0.0   0.0   0.0
230. *   0.0   0.0   0.0   0.0   0.0   0.0
240. *   0.0   0.0   0.0   0.0   0.0   0.0
250. *   0.0   0.0   0.0   0.0   0.0   0.0
260. *   0.0   0.0   0.0   0.0   0.0   0.0
270. *   0.0   0.0   0.0   0.0   0.0   0.0
280. *   0.0   0.0   0.0   0.0   0.0   0.0
290. *   0.0   0.0   0.0   0.0   0.0   0.0
300. *   0.0   0.0   0.0   0.0   0.0   0.0
310. *   0.0   0.0   0.0   0.0   0.0   0.0
320. *   0.0   0.0   0.0   0.0   0.0   0.0
330. *   0.0   0.0   0.0   0.0   0.0   0.0
340. *   0.0   0.0   0.0   0.0   0.0   0.0
350. *   0.0   0.0   0.0   0.0   0.0   0.0
------*-------------------------------------
MAX   *   0.2   0.1   0.1   0.0   0.1   0.1
DEGR. *   20     0    20     0    50    30
```

THE HIGHEST CONCENTRATION OF 0.20 PPM OCCURRED AT RECEPTOR REC62.

# Energy Modeling

# ENERGY MODELING ANALYSIS

**TO:** Redgate

**FROM:** WSP

**SUBJECT:** **776 Summer Street – Energy Modeling Analysis**

**DATE:** **June 27, 2018**

## EXECUTIVE SUMMARY:

The purpose of this memo is to present the modeled energy performance 776 Summer Street with respect to the Massachusetts Stretch Energy Code. Energy modeling has been performed using eQUEST v3.65 energy simulation software.

The project includes the redevelopment of a 15 acre site along the Reserve Channel in Boston, MA. The total project gross floor area will be 1.9 million SF (not including parking) with residential, hotel, office, and retail uses.

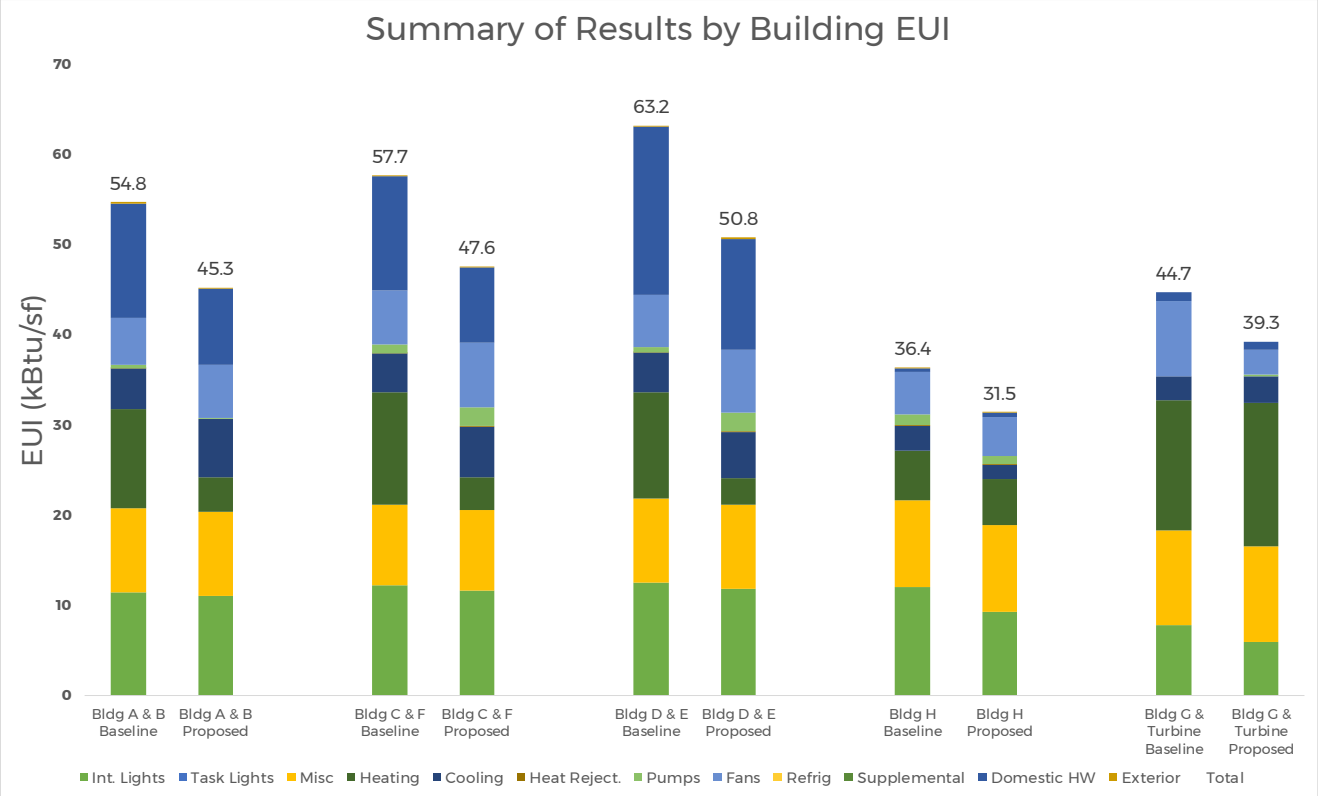
To comply with the minimum energy requirements of the Massachusetts Stretch Energy code, the design must achieve at least 10% energy savings relative to the ASHRAE 90.1-2013 Appendix G baseline in addition to Section C406.1 compliance. Section C406.1 of the MA Energy Code requires two additional Efficiency Package Options to be implemented into the design and included in the baseline energy model. The selected Efficiency Package Options are:

- More efficient HVAC performance in accordance with section C406.2, which requires the project to install HVAC equipment which exceeds the minimum efficiency requirements by 10%.
- Reduced Lighting Power Density in accordance with section C406.3, which requires a minimum 10% lighting power density reduction compared to IECC 2015.

**The results indicate the proposed site will consume 17.5% less energy than an ASHRAE 90.1-2013 baseline building.** Each building meets the requirements of the MA Stretch Code. The results are summarized in the table below.

**Table 1: Annual Energy and Cost Savings**

| Building Name | Building Type | Baseline | | | Proposed | | | Savings |
|---|---|---|---|---|---|---|---|---|
| | | Electricity (kWh) | Natural Gas (Therms) | EUI (kBtu/SF) | Electricity (kWh) | Natural Gas (Therms) | EUI (kBtu/SF) | EUI (%) |
| Building A | Mid-rise Residential | 1,519,919 | 39,554 | 54.8 | 1,617,675 | 20,410 | 45.3 | 17.3% |
| Building B | Mid-rise Residential | 1,437,492 | 37,409 | 54.8 | 1,529,946 | 19,303 | 45.3 | 17.3% |
| Building C | High-rise Residential | 3,556,617 | 93,426 | 57.7 | 3,969,309 | 41,768 | 47.6 | 17.5% |
| Building D | High-rise Hotel & Residential | 2,728,856 | 86,357 | 63.2 | 2,976,701 | 42,636 | 50.8 | 19.7% |
| Building E | High-rise Hotel & Residential | 2,738,949 | 86,677 | 63.2 | 2,987,711 | 42,793 | 50.8 | 19.7% |
| Building G (1898 Hall) | Mixed (Office, Civic, or Retail) | 492,713 | 8,005 | 44.7 | 380,052 | 8,835 | 39.3 | 12.1% |
| Turbine Hall 1 | Mixed (Office, Civic, or Retail) | 218,254 | 3,546 | 44.7 | 168,349 | 3,914 | 39.3 | 12.1% |
| Building F | High-rise Residential | 2,578,294 | 67,727 | 57.7 | 2,877,466 | 30,279 | 47.6 | 17.5% |
| Building H | High-rise Office | 2,393,430 | 14,722 | 36.4 | 2,049,059 | 13,342 | 31.5 | 13.6% |
| Turbine Hall 2 | Mixed (Office, Civic, or Retail) | 205,201 | 3,334 | 44.7 | 158,281 | 3,679 | 39.3 | 12.1% |
| Turbine Hall 3 | Mixed (Office, Civic, or Retail) | 576,268 | 9,363 | 44.7 | 444,501 | 10,333 | 39.3 | 12.1% |
| Admin | Mixed (Office, Civic, or Retail) | 23,619 | 384 | 44.7 | 18,218 | 424 | 39.3 | 12.1% |
| **TOTAL** | Mixed Use Residential, Hotel, Office | 18,469,612 | 450,505 | 54.8 | 19,177,268 | 237,715 | **45.3** | **17.5%** |




## MODELING METHODOLOGY

The annual energy savings presented in this report was analyzed by generating an hourly simulation of building energy consumption using eQUEST software (v.3.65). eQUEST uses the latest DOE 2.2 building energy analysis software as its calculation engine. The program permits the modeling of complex building geometry, HVAC systems, electrical systems, and central plant equipment. The program relies on a well-tested and validated DOE 2.2 simulation engine, which incorporates a state-of-the-art graphic user interface and features. It allows for the creation of detailed thermal energy definitions of key building characteristics, along with customized operating strategies and schedules. The interactions between the different building loads, systems, and HVAC plants are then simulated in hourly time intervals using typical or long-term average weather data for the location. This results in a detailed account of energy consumption and demand.

The purpose of the model is to estimate the energy use that accounts for weather, solar impact, building geometry, orientation, material properties, and electrical/mechanical systems. It also considers variables including fresh air ventilation, schedules of operations, and interactive effects. For each of the 8,760 hours during the course of a year, the program will account for these factors to calculate the building energy consumption.

## MODELING LIMITATIONS

There are limitations inherent to the modeling program and the models it generates. The main purpose of the model is to compare a code compliant building and a proposed design case under the same conditions. ASHRAE 90.1-2013 states:

*"Neither the proposed building performance nor the baseline building performance models are predictions of actual energy consumption or costs for the proposed design after construction." (ASHRAE 90.1-2013, Appendix G, p. 255)*

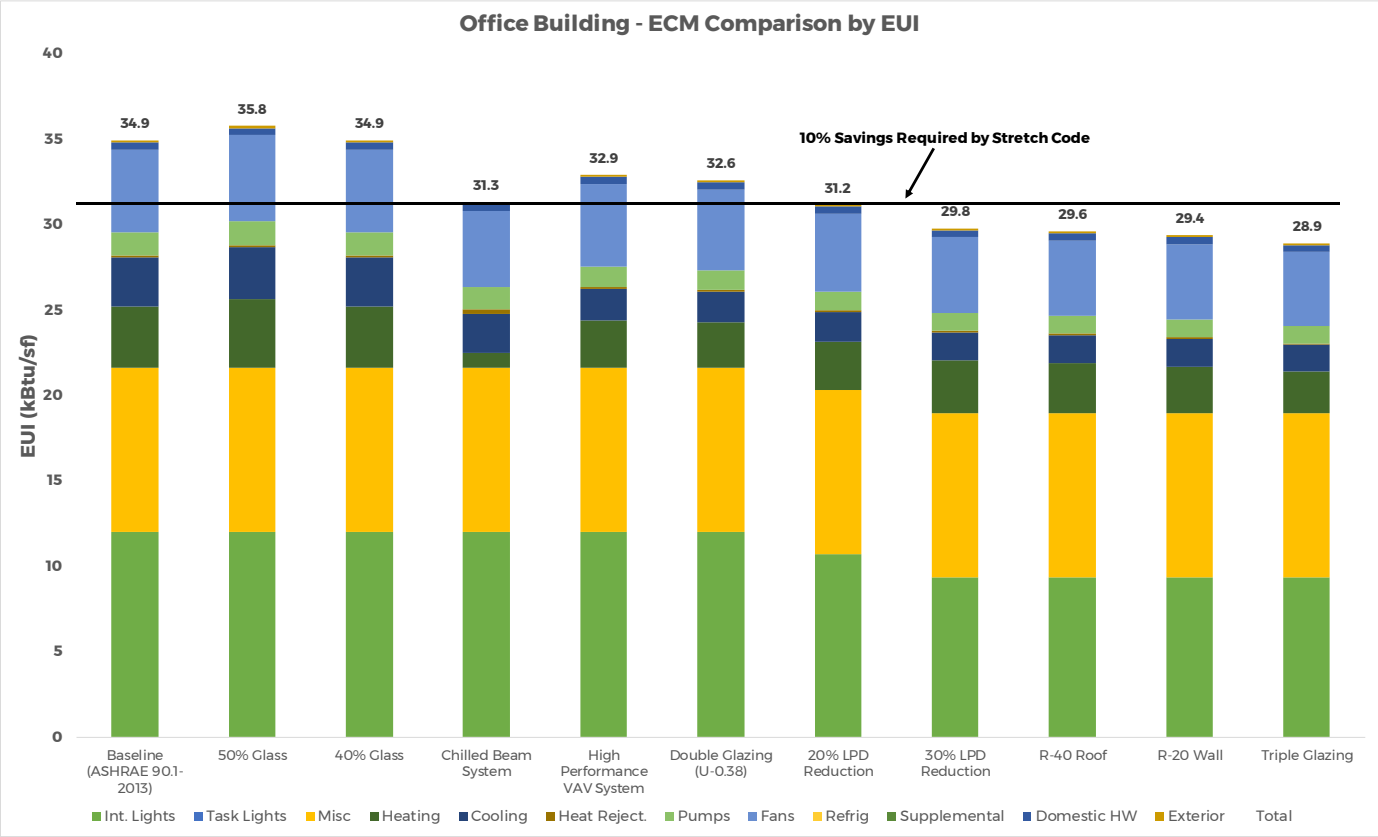
The assumptions made about several factors affecting energy usage such as the occupancy; building operation and maintenance; weather; changes in energy rates; etc., will result in differences from the model to actual experience. Although models are meant to approximate the actual operation of the systems, it is difficult to predict unusual events. The program assumes that the conditioning equipment works under ideal conditions for the entire year. Also, when certain systems are beyond the capabilities of the modeling software, assumptions must be made in order to approximate the effect of that system.

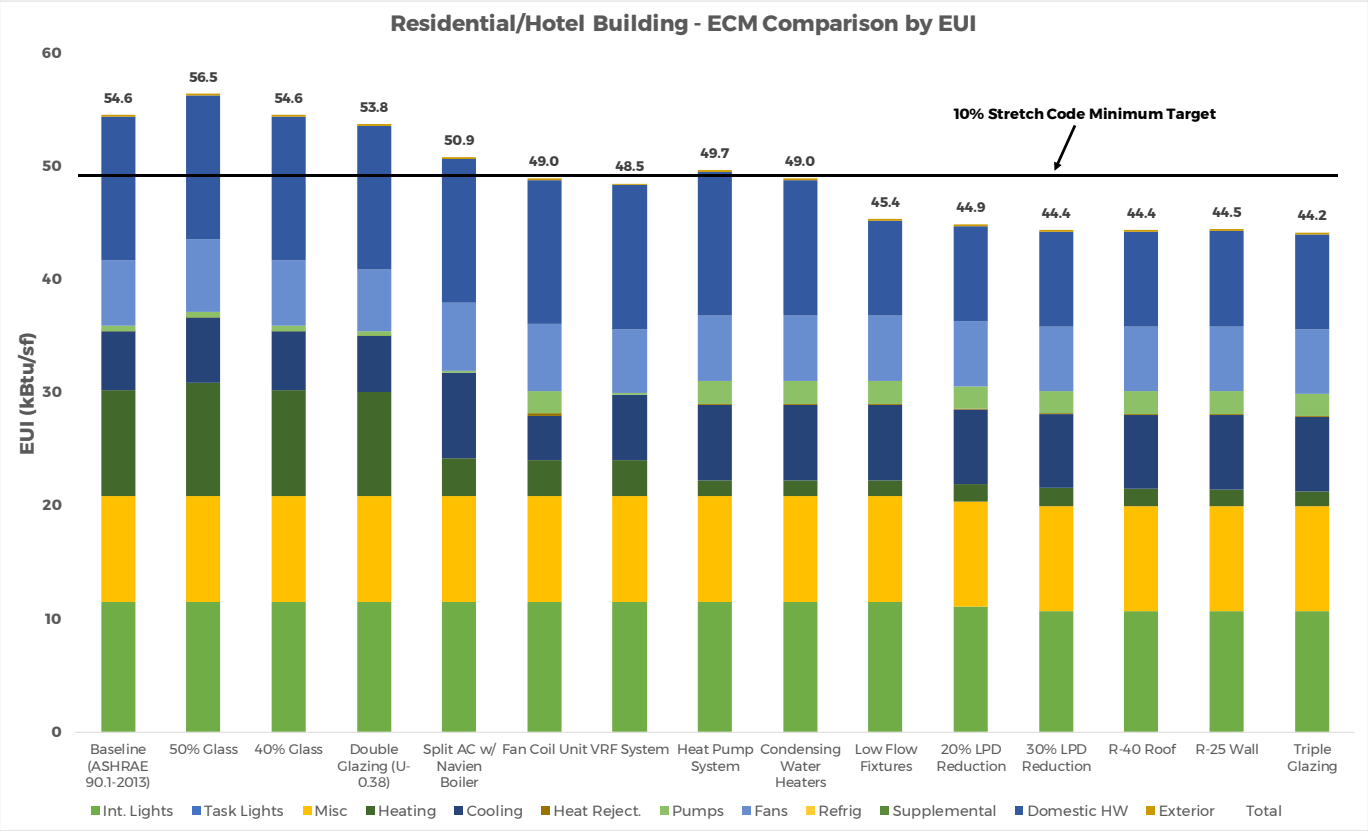
## DESIGN ALTERNATIVES

Several design alternatives were identified and analyzed for each building type to better understand which energy conservation measures (ECMs) to include in the Proposed Design. For this analysis, two energy models were created. One model represents the residential/hotel buildings and a second model represents the office buildings.

The measures were modeled such that each ECM is built upon the previous measures. Thus, the final run reflects the combined analysis and shows the net interactive energy savings for the project. The two charts below identify the net interactive savings for each measure.

The energy use is expressed in terms of Energy Use Intensity (EUI), which represents the building's annual energy use per unit area. It is measured in thousands of BTU per square foot per year (kBtu/sf/yr).






**Energy Conservation Measures Included in Proposed Design:**

The project team reviewed the results of the analysis to determine a path towards meeting the Stretch Code requirements and optimizing building performance. Based on the results of the ECM Analysis, the following measures were selected to be included in the Proposed Design Model.

1. Reduce window-to-wall ratio to 30% (residential and hotel) and 40% (office).
    - Code allows up to 40% glass for residential/office and up to 34% glass for hotel.
2. High Performance Double Glazing (U-0.38, SHGC-0.35)
    - Triple glazing was investigated, but due to the low glass percentage and the use of high performance HVAC systems, the impact was minimal.
3. Better than code R-40 Roof Insulation
    - Code minimum is R-30
4. LED lighting systems:
    - Residential & Hotel – 20% lighting power reduction
    - Office – 30% lighting power reduction
5. High Performance HVAC including:
    - Mid-rise Residential: Air-cooled split AC Units, dedicated outside air system with energy recovery, and HW condensing boilers in each unit.
    - High-rise Residential & Hotel: Water-source heats pumps, dedicated outside air system with energy recovery, and central HW condensing boiler.
    - Office: Variable Air Volume reheat system, high-performance variable speed chiller, gas-fired HW condensing boiler, energy recovery system, and VFDs on all pump systems.

6. High Performance Domestic Hot Water System including:
    - Gas-fired condensing hot water heaters
    - Low flow domestic water fixtures (30% reduced flow)

Measures not selected will be investigated further during the design phase of each building.

## SUMMARY OF ASSUMPTIONS

The proposed development is located in Boston, MA. As per ASHRAE 90.1-2007, Appendix B, this is located in Climate Zone 5A. The weather file used for the energy analysis is Boston, MA in Typical Meteorological Year (TMY2) format. The weather data was obtained from the website: www.doe2.com.

The location of the building also determines the utility rate, which is presented in Table 6. A blended utility rate is utilized to determine the energy costs for the project. The rates presented below are provided Eversource (electric utility) and National Grid (gas utility).

**Table 6: Utility Rate Structure**

| | Unit | Rate Per Unit |
|---|---|---|
| Electricity | kWh | $0.16 |
| Natural Gas | Therm | $1.15 |

The tables below identify the assumptions for the Selected Proposed Design and the ASHRAE 90.1-2013 Baseline Design.

Modeling Assumptions – Residential Mid-rise

| Summary of Assumptions for Energy Model | ASHRAE 90.1-2013 Baseline | Proposed Design |
|---|---|---|
| **General Building Information** | | |
| Space use type | Multi-family Residential Mid-rise | Multi-family Residential Mid-rise |
| Operating Schedule (HVAC Fans) | 24 / 7 / 365 | 24 / 7 / 365 |
| Temperature Setpoints | Cooling - Occupied : 75°F | Cooling - Occupied : 75°F |
| | Heating - Occupied : 70°F | Heating - Occupied : 70°F |
| **Building Envelope (Construction Assemblies)** | | |
| Roofs | R30ci Insulation Entirely Above Deck (U-0.032) | R-40 |
| Walls | Steel Framed R-18 (U-0.055) | R-18 |
| **Fenestration and Shading** | | |
| Vertical fenestration area ( of Wall area) | Residential = 40% Maximum (modeled with 30%) | 30% |
| Vertical Glazing U-factor | U-0.42 | U-0.38 |
| Vertical Glazing SHGC | 0.4 | 0.35 |
| **HVAC (Air-side)** | | |
| HVAC System Type | System #7: VAV Rooftop Unit With HW Reheat - System per Floor - for residential support spaces<br><br>System #1: Packaged Terminal A/C Units with HW - for residential units<br><br>System #3 - Packaged Single Zone AC (exception 2) for Retail Areas | 100% Outside Air Packaged Rooftop Energy Recovery Unit with water-cooled DX cooling and gas furnace heating<br><br>Water Source Heat Pumps serving residential units<br><br>System #3 - Packaged Single Zone AC (exception 2) for Retail Areas |
| Unitary Efficiency | System #1 PTAC: 12.2 EER<br>System #3 PSZ: 11.7 - 12.1 EER | ERU DX cooling: 11.0 EER<br>ERU Furnace Heating: 80% Efficiency<br>Split AC Cooling = 12.2 EER |
| Fan System Operation | On continuously during occupied hours. Cycled to meet load during unoccupied hours. | RTUs - On continuously during occupied hours. Cycled to meet load during unoccupied hours.<br>Split ACs - Cycle to meet load during all hours |
| Outdoor Air Design Min. Ventilation | ASHRAE 62.1-2013 Compliant | ASHRAE 62.1-2013 Compliant<br>Outside air ducted to all units (no natural ventilation) |
| Economizer High-Limit Shutoff | System #7 and #5: Outdoor Air Temperature with 70°F shutoff limit<br>System #1 PTAC: Not required | Fixed - 100% outside air unit<br>Split ACs - Recirculation units only |
| Design Airflow Rates (Conditioned Spaces) | Auto sized based on 20F supply air to room air delta-T | Auto sized based on 20F supply air to room air delta-T |
| Minimum Supply Flow | Per ASHRAE 90.1-2013 Section G3.1.3.13<br>VAV - 30% Turndown Ratio | Constant with EC Motors |
| Total System Fan Power (Conditioned) | Per ASHRAE 90.1-2013 G3.1.2.9<br>System #1 PTAC: - 0.0003 kW/cfm<br>System #3 PSZ - 0.0008 kW/cfm<br>System #7 VAV - 0.0015 kW/cfm | Residential Split AC: - 0.00015 kW/cfm<br>System #3 PSZ - 0.0008 kW/cfm<br>RTU/ERU - 0.0015 kW/cfm |
| Pressure Drop Adjustments | -Particulate filtration Credit MERV 13<br>-Sound Attenuation<br>-Ducted Return<br>-ERV in applicable systems | -Particulate filtration Credit MERV 13<br>-Sound Attenuation<br>-Ducted Return<br>-ERV in applicable systems |
| Exhaust Air Energy Recovery | 50% effective enthalpy wheel on all VAV Systems as required by ASHRAE 90.1-2013 Table 6.5.6.1 | 70% effective enthalpy wheel on RTU/ERU |
| Supply Air Temperature Reset Parameters | Load Reset on VAV systems from 55F-60F | N/A |
| **HVAC (Water-side)** | | |
| Number of Chillers | 1 | N/A |
| Chiller Part-Load Controls | No VSD | N/A |
| Chiller Capacity (Per Chiller) | ≥75 and <150 Tons | N/A |
| Chiller Efficiency | 4.9 COP | N/A |
| Chilled Water Loop Supply Temperature | 44 | N/A |
| Chilled Water (CHW) Loop Delta-T | 12 | N/A |
| CHW Loop Temp Reset Parameters | 54F @ 60F OA, 44F @ 80F OA | N/A |
| CHW Loop Configuration3 | Primary/Secondary | N/A |
| Number of Primary CHW Pumps | 1 | N/A |
| Primary CHW Pump Power | 11 W/GPM | N/A |
| Primary CHW Pump Speed Control | One Speed | N/A |
| Secondary CHW Pump Power | 11 W/GPM | N/A |
| Secondary CHW Pump Speed Control | One Speed | N/A |
| Number of Cooling Towers / Fluid Coolers | 1 | N/A |
| Cooling Tower Fan Control | Variable Speed | N/A |
| Condenser Water Leaving Temperature | 81 | N/A |
| Condenser Water (CW) Loop Delta-T | 10 | N/A |
| CW Loop Temp Reset Parameters | Maintain 70°F when weather permits, floating up to leaving water temperature at design conditions | N/A |
| CW Loop Configuration | Primary Only | N/A |
| Number of CW Pumps | 1 | N/A |
| CW Pump Power | 19 W/GPM | N/A |
| CW Pump Speed Control | One Speed | N/A |
| Water-side Economizer for Free Cooling | No | N/A |
| Number of Boilers | 2 | 1 per unit - combo heating and domestic HW unti |
| Boiler Part-Load Controls | Staged | Condensing |
| Boiler Capacity (Per Boiler) | N/A | N/A |
| Boiler Efficiency | 90% Natural Draft (Per Stretch Code 2-of-6 Enhancements) | 95% Condensing |
| Boiler Water Loop Supply Temperature | 180F | 140 |
| Hot Water or Steam (HW) Loop Delta-T | 50F | 20 |
| HW Loop Reset Parameters | 150F @ 50F OA, 180F @ 20F OA | N/A |
| Number of Primary HW Pumps | 2 | N/A |
| Primary HW Pump Power | 19W/GPM | N/A |
| Primary HW Pump Speed Control | Variable Speed | N/A |
| **Domestic Water Heating** | | |
| DHW Equipment Type | Natural Gas | Natural Gas - combo heating and domestic HW unti |
| Equipment Efficiency | 90% | 95% |
| Temperature Controls | 120F Constant | 120F Constant |
| DHW Flow | Standard Flow Fixtures | Low Flow Fixtures / 30% Reduction in Flow Fixtures |
| **Lighting** | | |
| Automatic Lighting Shutoff Method | Scheduled off during unoccupied hours | Scheduled off during unoccupied hours |
| Interior Lighting Power Calc Method | Building Area with 10% reductions (Per Stretch Code 2-of-6 Enhancements) | Building Area |
| Interior LPD by Building Area (W/SF) | Residential Common Areas = 0.46 W/sf | Residential Common Areas = 0.41 W/sf (20% reduction) |
| | Parking Garage = 0.19 W/sf | Parking Garage = 0.17 W/sf (20% reduction) |
| | Apartment Units = 1.0 W/sf (no credit taken) | Apartment Units = 1.0 W/sf (no credit taken) |
| **Miscellaneous** | | |
| Receptacle Equipment | 1.00 W/sf | 1.00 W/sf |
| Escalators and Elevators | Average load = 25 HP per building | Average load = 25 HP per building |
| Garage Fans | Assumes airflow= 0.75 CFM/SF of garage area and and fan motor size = 0.3 Watts/CFM. Average operating setpoint = 50% speed. | Assumes airflow= 0.75 CFM/SF of garage area and and fan motor size = 0.3 Watts/CFM. Average operating setpoint = 50% speed. |

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Modeling Assumptions – Residential High Rise

| Summary of Assumptions for Energy Model | ASHRAE 90.1-2013 Baseline | Proposed Design |
|---|---|---|
| **General Building Information** | | |
| Space use type | Multi-family Residential High Rise | Multi-family Residential High Rise |
| Operating Schedule (HVAC Fans) | 24 / 7 / 365 | 24 / 7 / 365 |
| Temperature Setpoints | Cooling - Occupied : 75°F | Cooling - Occupied : 75°F |
| | Heating - Occupied : 70°F | Heating - Occupied : 70°F |
| **Building Envelope (Construction Assemblies)** | | |
| Roofs | R30ci Insulation Entirely Above Deck (U-0.032) | R-40 |
| Walls | Steel Framed R-18 (U-0.055) | R-18 |
| **Fenestration and Shading** | | |
| Vertical fenestration area ( of Wall area) | Residential = 40% Maximum (modeled with 30%) | 30% |
| Vertical Glazing U-factor | U-0.42 | U-0.38 |
| Vertical Glazing SHGC | 0.4 | 0.35 |
| **HVAC (Air-side)** | | |
| HVAC System Type | System #7: VAV Rooftop Unit With HW Reheat - System per Floor - for residential support spaces<br><br>System #1: Packaged Terminal A/C Units with HW - for residential units<br><br>System #3 - Packaged Single Zone AC (exception 2) for Retail Areas | 100% Outside Air Packaged Rooftop Energy Recovery Unit with water-cooled DX cooling and gas furnace heating<br><br>Water Source Heat Pumps serving residential units<br><br>System #3 - Packaged Single Zone AC (exception 2) for Retail Areas |
| Unitary Efficiency | System #1 PTAC: 12.2 EER<br>System #3 PSZ: 11.7 - 12.1 EER | ERU DX cooling: 14.0 EER<br>ERU Heat Pump Heating: 4.5 COP<br>WSHP Cooling: 15.0 EER<br>WSHP Heating: 4.5 COP |
| Fan System Operation | On continuously during occupied hours. Cycled to meet load during unoccupied hours. | RTUs - On continuously during occupied hours. Cycled to meet load during unoccupied hours.<br>Heat Pumps - Cycle to meet load during all hours |
| Outdoor Air Design Min. Ventilation | ASHRAE 62.1-2013 Compliant | ASHRAE 62.1-2013 Compliant<br>Outside air ducted to all units (no natural ventilation) |
| Economizer High-Limit Shutoff | System #7 and #5: Outdoor Air Temperature with 70°F shutoff limit<br>System #1 PTAC: Not required | Fixed - 100% outside air unit<br>WSHP: Recirculation units only |
| Design Airflow Rates (Conditioned Spaces) | Auto sized based on 20F supply air to room air delta-T | Auto sized based on 20F supply air to room air delta-T |
| Minimum Supply Flow | Per ASHRAE 90.1-2013 Section G3.1.3.13<br>VAV - 30% Turndown Ratio | Constant with EC Motors |
| Total System Fan Power (Conditioned) | Per ASHRAE 90.1-2013 G3.1.2.9<br>System #1 PTAC: - 0.0003 kW/cfm<br>System #3 PSZ - 0.0008 kW/cfm<br>System #7 VAV - 0.0015 kW/cfm | Residential WSHP: - 0.00025 kW/cfm<br>System #3 PSZ - 0.0008 kW/cfm<br>RTU/ERU - 0.0015 kW/cfm |
| Pressure Drop Adjustments | -Particulate filtration Credit MERV 13<br>-Sound Attenuation<br>-Ducted Return<br>-ERV in applicable systems | -Particulate filtration Credit MERV 13<br>-Sound Attenuation<br>-Ducted Return<br>-ERV in applicable systems |
| Exhaust Air Energy Recovery | 50% effective enthalpy wheel on all VAV Systems as required by ASHRAE 90.1-2013 Table 6.5.6.1 | 70% effective enthalpy wheel on RTU/ERU |
| Supply Air Temperature Reset Parameters | Load Reset on VAV systems from 55F-60F | N/A |
| **HVAC (Water-side)** | | |
| Number of Chillers | 1 | N/A |
| Chiller Part-Load Controls | No VSD | N/A |
| Chiller Capacity (Per Chiller) | ≥75 and <150 Tons | N/A |
| Chiller Efficiency | 4.9 COP | N/A |
| Chilled Water Loop Supply Temperature | 44 | N/A |
| Chilled Water (CHW) Loop Delta-T | 12 | N/A |
| CHW Loop Temp Reset Parameters | 54F @ 60F OA, 44F @ 80F OA | N/A |
| CHW Loop Configuration3 | Primary/Secondary | N/A |
| Number of Primary CHW Pumps | 1 | N/A |
| Primary CHW Pump Power | 11 W/GPM | N/A |
| Primary CHW Pump Speed Control | One Speed | N/A |
| Secondary CHW Pump Power | 11 W/GPM | N/A |
| Secondary CHW Pump Speed Control | One Speed | N/A |
| Number of Cooling Towers / Fluid Coolers | 1 | 1 |
| Cooling Tower Fan Control | Variable Speed | Variable Speed |
| Condenser Water Leaving Temperature | 81 | 85 |
| Condenser Water (CW) Loop Delta-T | 10 | 10 |
| CW Loop Temp Reset Parameters | Maintain 70°F when weather permits, floating up to leaving water temperature at design conditions | Fixed |
| CW Loop Configuration | Primary Only | Primary Only |
| Number of CW Pumps | 1 | 1 |
| CW Pump Power | 19 W/GPM | 19 W/GPM |
| CW Pump Speed Control | One Speed | Variable Speed |
| Water-side Economizer for Free Cooling | No | N/A |
| Number of Boilers | 2 | 2 |
| Boiler Part-Load Controls | Staged | Staged |
| Boiler Capacity (Per Boiler) | N/A | N/A |
| Boiler Efficiency | 90% Natural Draft (Per Stretch Code 2-of-6 Enhancements) | 95% Condensing |
| Boiler Water Loop Supply Temperature | 180F | N/A |
| Hot Water or Steam (HW) Loop Delta-T | 50F | N/A |
| HW Loop Reset Parameters | 150F @ 50F OA, 180F @ 20F OA | N/A |
| Number of Primary HW Pumps | 2 | N/A |
| Primary HW Pump Power | 19W/GPM | N/A |
| Primary HW Pump Speed Control | Variable Speed | N/A |
| **Domestic Water Heating** | | |
| DHW Equipment Type | Natural Gas | Natural Gas |
| Equipment Efficiency | 90% | 95% |
| Temperature Controls | 120F Constant | 120F Constant |
| DHW Flow | Standard Flow Fixtures | Low Flow Fixtures / 30% Reduction in Flow Fixtures |
| **Lighting** | | |
| Automatic Lighting Shutoff Method | Scheduled off during unoccupied hours | Scheduled off during unoccupied hours |
| Interior Lighting Power Calc Method | Building Area with 10% reductions (Per Stretch Code 2-of-6 Enhancements) | Building Area |
| Interior LPD by Building Area (W/SF) | Residential Common Areas = 0.46 W/sf | Residential Common Areas = 0.41 W/sf (20% reduction) |
| | Parking Garage = 0.19 W/sf | Parking Garage = 0.17 W/sf (20% reduction) |
| | Apartment Units = 1.0 W/sf (no credit taken) | Apartment Units = 1.0 W/sf (no credit taken) |
| **Miscellaneous** | | |
| Receptacle Equipment | 1.00 W/sf | 1.00 W/sf |
| Escalators and Elevators | Average load = 25 HP per building | Average load = 25 HP per building |
| Garage Fans | Assumes airflow= 0.75 CFM/SF of garage area and and fan motor size = 0.3 Watts/CFM. Average operating setpoint = 50% speed. | Assumes airflow= 0.75 CFM/SF of garage area and and fan motor size = 0.3 Watts/CFM. Average operating setpoint = 50% speed. |

Modeling Assumptions – Hotel

| Summary of Assumptions for Energy Model | ASHRAE 90.1-2013 Baseline | Proposed Design |
|---|---|---|
| **General Building Information** | | |
| Space use type | Multi-family Residential High Rise | Multi-family Residential High Rise |
| Operating Schedule (HVAC Fans) | 24 / 7 / 365 | 24 / 7 / 365 |
| Temperature Setpoints | Cooling - Occupied : 75°F | Cooling - Occupied : 75°F |
| | Heating - Occupied : 70°F | Heating - Occupied : 70°F |
| **Building Envelope (Construction Assemblies)** | | |
| Roofs | R30ci Insulation Entirely Above Deck (U-0.032) | R-40 |
| Walls | Steel Framed R-18 (U-0.055) | R-18 |
| **Fenestration and Shading** | | |
| Vertical fenestration area ( of Wall area) | Residential = 40% maximum (modeled with 30%)<br>Hotel = 34% maximum | Residential 30%, Hotel 30% |
| Vertical Glazing U-factor | U-0.42 | U-0.38 |
| Vertical Glazing SHGC | 0.4 | 0.35 |
| **HVAC (Air-side)** | | |
| HVAC System Type | System #7: VAV Rooftop Unit With HW Reheat - System per Floor - for residential support spaces<br><br>System #1: Packaged Terminal A/C Units with HW - for residential and hotel units<br><br>System #3 - Packaged Single Zone AC (exception 2) for Retail Areas | 100% Outside Air Packaged Rooftop Energy Recovery Unit with water-cooled DX cooling and gas furnace heating<br><br>Water Source Heat Pumps serving residential and hotel units<br><br>System #3 - Packaged Single Zone AC (exception 2) for Retail Areas |
| Unitary Efficiency | System #1 PTAC: 12.2 EER<br>System #3 PSZ: 11.7 - 12.1 EER | ERU DX cooling: 14.0 EER<br>ERU Heat Pump Heating: 4.5 COP<br>WSHP Cooling: 15.0 EER<br>WSHP Heating: 4.5 COP |
| Fan System Operation | On continuously during occupied hours. Cycled to meet load during unoccupied hours. | RTUs - On continuously during occupied hours. Cycled to meet load during unoccupied hours.<br>Heat Pumps - Cycle to meet load during all hours |
| Outdoor Air Design Min. Ventilation | ASHRAE 62.1-2013 Compliant | ASHRAE 62.1-2013 Compliant<br>Outside air ducted to all units (no natural ventilation) |
| Economizer High-Limit Shutoff | System #7 and #5: Outdoor Air Temperature with 70°F shutoff limit<br>System #1 PTAC: Not required | Fixed - 100% outside air unit<br>WSHP: Recirculation units only |
| Design Airflow Rates (Conditioned Spaces) | Auto sized based on 20F supply air to room air delta-T | Auto sized based on 20F supply air to room air delta-T |
| Minimum Supply Flow | Per ASHRAE 90.1-2013 Section G3.1.3.13<br>VAV - 30% Turndown Ratio | Constant with EC Motors |
| Total System Fan Power (Conditioned) | Per ASHRAE 90.1-2013 G3.1.2.9<br>System #1 PTAC: - 0.0003 kW/cfm<br>System #3 PSZ - 0.0008 kW/cfm<br>System #7 VAV - 0.0015 kW/cfm | Residential WSHP: - 0.00025 kW/cfm<br>System #3 PSZ - 0.0008 kW/cfm<br>RTU/ERU - 0.0015 kW/cfm |
| Pressure Drop Adjustments | -Particulate filtration Credit MERV 13<br>-Sound Attenuation<br>-Ducted Return<br>-ERV in applicable systems | -Particulate filtration Credit MERV 13<br>-Sound Attenuation<br>-Ducted Return<br>-ERV in applicable systems |
| Exhaust Air Energy Recovery | 50% effective enthalpy wheel on all VAV Systems as required by ASHRAE 90.1-2013 Table 6.5.6.1 | 70% effective enthalpy wheel on RTU/ERU |
| Supply Air Temperature Reset Parameters | Load Reset on VAV systems from 55F-60F | N/A |
| **HVAC (Water-side)** | | |
| Number of Chillers | 1 | N/A |
| Chiller Part-Load Controls | No VSD | N/A |
| Chiller Capacity (Per Chiller) | ≥75 and <150 Tons | N/A |
| Chiller Efficiency | 4.9 COP | N/A |
| Chilled Water Loop Supply Temperature | 44 | N/A |
| Chilled Water (CHW) Loop Delta-T | 12 | N/A |
| CHW Loop Temp Reset Parameters | 54F @ 60F OA, 44F @ 80F OA | N/A |
| CHW Loop Configuration3 | Primary/Secondary | N/A |
| Number of Primary CHW Pumps | 1 | N/A |
| Primary CHW Pump Power | 11 W/GPM | N/A |
| Primary CHW Pump Speed Control | One Speed | N/A |
| Secondary CHW Pump Power | 11 W/GPM | N/A |
| Secondary CHW Pump Speed Control | One Speed | N/A |
| Number of Cooling Towers / Fluid Coolers | 1 | 1 |
| Cooling Tower Fan Control | Variable Speed | Variable Speed |
| Condenser Water Leaving Temperature | 81 | 85 |
| Condenser Water (CW) Loop Delta-T | 10 | 10 |
| CW Loop Temp Reset Parameters | Maintain 70°F when weather permits, floating up to leaving water temperature at design conditions | Fixed |
| CW Loop Configuration | Primary Only | Primary Only |
| Number of CW Pumps | 1 | 1 |
| CW Pump Power | 19 W/GPM | 19 W/GPM |
| CW Pump Speed Control | One Speed | Variable Speed |
| Water-side Economizer for Free Cooling | No | N/A |
| Number of Boilers | 2 | 2 |
| Boiler Part-Load Controls | Staged | Staged |
| Boiler Capacity (Per Boiler) | N/A | N/A |
| Boiler Efficiency | 90% Natural Draft (Per Stretch Code 2-of-6 Enhancements) | 95% Condensing |
| Boiler Water Loop Supply Temperature | 180F | N/A |
| Hot Water or Steam (HW) Loop Delta-T | 50F | N/A |
| HW Loop Reset Parameters | 150F @ 50F OA, 180F @ 20F OA | N/A |
| Number of Primary HW Pumps | 2 | N/A |
| Primary HW Pump Power | 19W/GPM | N/A |
| Primary HW Pump Speed Control | Variable Speed | N/A |
| **Domestic Water Heating** | | |
| DHW Equipment Type | Natural Gas | Natural Gas |
| Equipment Efficiency | 90% | 95% |
| Temperature Controls | 120F Constant | 120F Constant |
| DHW Flow | Standard Flow Fixtures | Low Flow Fixtures / 30% Reduction in Flow Fixtures |
| **Lighting** | | |
| Automatic Lighting Shutoff Method | Scheduled off during unoccupied hours | Scheduled off during unoccupied hours |
| Interior Lighting Power Calc Method | Building Area with 10% reductions (Per Stretch Code 2-of-6 Enhancements) | Building Area |
| Interior LPD by Building Area (W/SF) | Residential Common Areas = 0.46 W/sf | Residential Common Areas = 0.41 W/sf (20% reduction) |
| | Hotel Common Areas = 0.78 W/sf | Hotel Common Areas = 0.70 W/sf (20% reduction) |
| | Hotel Guest Units = 0.78 W/sf | Hotel Guest Units = 0.70 W/sf (20% reduction) |
| | Parking Garage = 0.19 W/sf | Parking Garage = 0.17 W/sf (20% reduction) |
| | Apartment Units = 1.0 W/sf (no credit taken) | Apartment Units = 1.0 W/sf (no credit taken) |
| **Miscellaneous** | | |
| Receptacle Equipment | 1.00 W/sf | 1.00 W/sf |
| Escalators and Elevators | Average load = 25 HP per building | Average load = 25 HP per building |
| Garage Fans | Assumes airflow= 0.75 CFM/SF of garage area and and fan motor size = 0.3 Watts/CFM. Average operating setpoint = 50% speed. | Assumes airflow= 0.75 CFM/SF of garage area and and fan motor size = 0.3 Watts/CFM. Average operating setpoint = 50% speed. |

Modeling Assumptions – Office

| Summary of Assumptions for Energy Model | ASHRAE 90.1-2013 Baseline | Design |
|---|---|---|
| **General Building Information** | | |
| Space use type | Office | Office |
| Operating Schedule (HVAC Fans) | M-F: 7am-6pm | M-F: 7am-6pm |
| Temperature Setpoints | Cooling - Occupied : 75°F, Unoccupied : 80°F<br>Heating - Occupied : 70°F, Unoccupied : 65°F | Cooling - Occupied : 75°F, Unoccupied : 80°F<br>Heating - Occupied : 70°F, Unoccupied : 65°F |
| **Building Envelope (Construction Assemblies)** | | |
| Roofs | R30ci Insulation Entirely Above Deck (U-0.032) | R-40 |
| Walls | Steel Framed R-18 (U-0.055) | R-18 |
| **Fenestration and Shading** | | |
| Vertical fenestration area ( of Wall area) | Office = 40% maximum | 40% |
| Vertical Glazing U-factor | Fixed = U-0.42 | 0.38 |
| Vertical Glazing SHGC | 0.4 | 0.35 |
| **HVAC (Air-side)** | | |
| HVAC System Type | System #7: VAV Rooftop Unit With HW Reheat - System per Floor | VAV Rooftop Unit With HW Reheat |
| Fan System Operation | On continuously during occupied hours. Cycled to meet load during unoccupied hours. | On continuously during occupied hours. Cycled to meet load during unoccupied hours. |
| Outdoor Air Design Min. Ventilation | ASHRAE 62.1-2013 Compliant | ASHRAE 62.1-2013 Compliant |
| Economizer High-Limit Shutoff | System #7: Outdoor Air Temperature with 70°F shutoff limit | ERU is 100% outside air - no economizer control |
| Design Airflow Rates (Conditioned Spaces) | Auto sized based on 20F supply air to room air delta-T | Auto sized based on 20F supply air to room air delta-T |
| Minimum Supply Flow | Per ASHRAE 90.1-2013 Section G3.1.3.13<br>VAV - 30% Turndown Ratio | Per ASHRAE 90.1-2013 Section G3.1.3.13<br>VAV - 30% Turndown Ratio |
| Total System Fan Power (Conditioned) | Per ASHRAE 90.1-2013 G3.1.2.9<br>System #7 VAV - 0.0014 kW/cfm | AHUs - 0.0014 kW/cfm |
| Pressure Drop Adjustments | -Particulate filtration Credit MERV 13<br>-Sound Attenuation<br>-ERV in applicable systems | -Particulate filtration Credit MERV 13<br>-Sound Attenuation<br>-ERV in applicable systems |
| Exhaust Air Energy Recovery | 50% effective enthalpy wheel on all VAV Systems as required by ASHRAE 90.1-2013 Table 6.5.6.1 | 65% effective enthalpy wheel on RTU |
| Supply Air Temperature Reset Parameters | Load Reset on VAV systems from 55F-60F | Load Reset on VAV systems from 55F-60F |
| **HVAC (Water-side)** | | |
| Number of Chillers | 2 | 2 |
| Chiller Part-Load Controls | No VSD | Variable Speed |
| Chiller Capacity (Per Chiller) | ≥300 and <600 Tons | ≥300 and <600 Tons |
| Chiller Efficiency | 0.56 kW/ton (full load)<br>0.52 IPLV | .55 kW/ton |
| Chilled Water Loop Supply Temperature | 44 | 44 |
| Chilled Water (CHW) Loop Delta-T | 12 | 12 |
| CHW Loop Temp Reset Parameters | 54F @ 60F OA, 44F @ 80F OA | 54F @ 60F OA, 44F @ 80F OA |
| CHW Loop Configuration3 | Primary/Secondary | Primary/Secondary |
| Number of Primary CHW Pumps | 1 per chiller | 1 per chiller |
| Primary CHW Pump Power | 11 W/GPM | 11 W/GPM |
| Primary CHW Pump Speed Control | One Speed | One Speed |
| Secondary CHW Pump Power | 11 W/GPM | 11 W/GPM |
| Secondary CHW Pump Speed Control | Variable Speed | Variable Speed |
| Number of Cooling Towers / Fluid Coolers | 1 | 1 |
| Cooling Tower Fan Control | Variable Speed | Variable Speed |
| Condenser Water Leaving Temperature | 85 | 85 |
| Condenser Water (CW) Loop Delta-T | 10 | 10 |
| CW Loop Temp Reset Parameters | Maintain 70°F when weather permits, floating up to leaving water temperature at design conditions | Maintain 70°F when weather permits, floating up to leaving water temperature at design conditions |
| CW Loop Configuration | Primary Only | Primary Only |
| Number of CW Pumps | 1 per chiller | 1 |
| CW Pump Power | 19 W/GPM | 19 W/GPM |
| CW Pump Speed Control | One Speed | Variable Speed |
| Water-side Economizer for Free Cooling | No | No |
| Number of Boilers | 2 | 2 |
| Boiler Part-Load Controls | Staged | Staged |
| Boiler Capacity (Per Boiler) | N/A | N/A |
| Boiler Efficiency | 90% Natural Draft (Per Stretch Code 2-of-6 Enhancements) | 95% Condensing |
| Boiler Water Loop Supply Temperature | 180°F | 140°F |
| Hot Water or Steam (HW) Loop Delta-T | 50°F | 20°F |
| HW Loop Reset Parameters | 150°F @ 50°F OA, 180°F @ 20°F OA | 100°F @ 60°F OA, 140 @ 20°F OA |
| Number of Primary HW Pumps | 2 | 2 |
| Primary HW Pump Power | 19W/GPM | 19W/GPM |
| Primary HW Pump Speed Control | Variable Speed | Variable Speed |
| **Domestic Water Heating** | | |
| DHW Equipment Type | Electric Resistance Storage Water Heater | Electric Resistance Storage Water Heater |
| Equipment Efficiency | Energy Factor = 0.963 per ASHRAE 90.1-2013 Table 7.8 | Energy Factor = 0.963 per ASHRAE 90.1-2013 Table 7.8 |
| Temperature Controls | 120°F Constant | 120°F Constant |
| DHW Flow | Standard Flow Fixtures | Low Flow Fixtures |
| **Lighting** | | |
| Automatic Lighting Shutoff Method | Scheduled off during unoccupied hours | Scheduled off during unoccupied hours |
| Gross Lighted Floor Area | Varies per building | Varies per building |
| Interior Lighting Power Calc Method | Building Area with 10% reductions (Per Stretch Code 2-of-6 Enhancements) | Building Area with 30% reduction |
| Interior LPD by Building Area (W/SF) | Office Common Areas = 0.82 W/sf | Office Common Areas = 0.57 W/sf (30% reduction) |
| | Office Tenant Areas = 0.82 W/sf | Office Tenant Areas = 0.57 W/sf (30% reduction) |
| | Retail Area = 1.26 W/sf | Retail Area = 1.26 W/sf |
| | Parking Garage = 0.21 W/sf | Parking Garage = 0.15 W/sf (30% reduction) |
| **Miscellaneous** | | |
| Receptacle Equipment | 1.00 W/sf | 1.00 W/sf |
| Escalators and Elevators | Average load = 20 HP per building | Average load = 20 HP per building |
| Garage Fans | Assumes airflow= 0.75 CFM/SF of garage area and and fan motor size = 0.3 Watts/CFM. Average operating setpoint = 50% speed. | Assumes airflow= 0.75 CFM/SF of garage area and and fan motor size = 0.3 Watts/CFM. Average operating setpoint = 50% speed. |

-END-

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# Stationary Source Analysis

## Stationary Source Greenhouse Gas Emissions Estimate

**Job number: 13656.00**
**Project: 776 Summer Street**

**Building A (Mid-Rise Residential)**

**ENERGY CONSUMPTION**

| Scenario | Total Electricity (kWh) | Total Gas (Therms) | Total Electricity (MWh) | Total Gas (MMBtu) | Total Energy (MMBtu) | EUI (kBtu/sf-yr) |
|---|---|---|---|---|---|---|
| BASELINE | 1,519,919 | 39,554 | 1,520 | 3,955 | 9,142 | 54.8 |
| DESIGN | 1,617,675 | 20,410 | 1,618 | 2,041 | 7,561 | 45.3 |
| END-USE SAVINGS | -97,756 | 19,144 | -98 | 1,914 | 1,581 | |
| PERCENT SAVINGS | | | | | 17.3% | |

**GREENHOUSE GAS EMISSIONS**

| Scenario | Total Electricity (tons/yr) | Total Gas (tons/yr) | Total Energy (tons/yr) |
|---|---|---|---|
| BASELINE | 539.6 | 231.6 | 771.2 |
| DESIGN | 574.3 | 119.5 | 693.8 |
| END-USE SAVINGS | -34.7 | 112.1 | 77.4 |
| PERCENT SAVINGS | | | 10.0% |

**Building B (Mid-Rise Residential)**

**ENERGY CONSUMPTION**

| Scenario | Total Electricity (kWh) | Total Gas (Therms) | Total Electricity (MWh) | Total Gas (MMBtu) | Total Energy (MMBtu) | EUI (kBtu/sf-yr) |
|---|---|---|---|---|---|---|
| BASELINE | 1,437,492 | 37,409 | 1,437 | 3,741 | 8,646 | 54.8 |
| DESIGN | 1,529,946 | 19,303 | 1,530 | 1,930 | 7,151 | 45.3 |
| END-USE SAVINGS | -92,454 | 18,106 | -93 | 1,811 | 1,495 | |
| PERCENT SAVINGS | | | | | 17.3% | |

**GREENHOUSE GAS EMISSIONS**

| Scenario | Total Electricity (tons/yr) | Total Gas (tons/yr) | Total Energy (tons/yr) |
|---|---|---|---|
| BASELINE | 510.3 | 219.0 | 729.3 |
| DESIGN | 543.1 | 113.0 | 656.1 |
| END-USE SAVINGS | -32.8 | 106.0 | 73.2 |
| PERCENT SAVINGS | | | 10.0% |

**Building C (High-Rise Residential)**

**ENERGY CONSUMPTION**

| Scenario | Total Electricity (kWh) | Total Gas (Therms) | Total Electricity (MWh) | Total Gas (MMBtu) | Total Energy (MMBtu) | EUI (kBtu/sf-yr) |
|---|---|---|---|---|---|---|
| BASELINE | 3,556,617 | 93,426 | 3,557 | 9,343 | 21,478 | 57.7 |
| DESIGN | 3,969,309 | 41,768 | 3,969 | 4,177 | 17,721 | 47.6 |
| END-USE SAVINGS | -412,692 | 51,658 | -412 | 5,166 | 3,757 | |
| PERCENT SAVINGS | | | | | 17.5% | |

**GREENHOUSE GAS EMISSIONS**

| Scenario | Total Electricity (tons/yr) | Total Gas (tons/yr) | Total Energy (tons/yr) |
|---|---|---|---|
| BASELINE | 1,262.6 | 547.0 | 1,809.6 |
| DESIGN | 1,409.1 | 244.6 | 1,653.7 |
| END-USE SAVINGS | -146.5 | 302.4 | 155.9 |
| PERCENT SAVINGS | | | 8.6% |

**Building D (High-Rise Res/Hotel)**

**ENERGY CONSUMPTION**

| Scenario | Total Electricity (kWh) | Total Gas (Therms) | Total Electricity (MWh) | Total Gas (MMBtu) | Total Energy (MMBtu) | EUI (kBtu/sf-yr) |
|---|---|---|---|---|---|---|
| BASELINE | 2,728,856 | 86,357 | 2,729 | 8,636 | 17,947 | 63.2 |
| DESIGN | 2,976,701 | 42,636 | 2,977 | 4,264 | 14,421 | 50.8 |
| END-USE SAVINGS | -247,845 | 43,721 | -248 | 4,372 | 3,526 | |
| PERCENT SAVINGS | | | | | 19.6% | |

**GREENHOUSE GAS EMISSIONS**

| Scenario | Total Electricity (tons/yr) | Total Gas (tons/yr) | Total Energy (tons/yr) |
|---|---|---|---|
| BASELINE | 968.7 | 505.6 | 1,474.4 |
| DESIGN | 1,056.7 | 249.6 | 1,306.4 |
| END-USE SAVINGS | -88.0 | 256.0 | 168.0 |
| PERCENT SAVINGS | | | 11.4% |

**Building E (High-Rise Res/Hotel)**

**ENERGY CONSUMPTION**

| Scenario | Total Electricity (kWh) | Total Gas (Therms) | Total Electricity (MWh) | Total Gas (MMBtu) | Total Energy (MMBtu) | EUI (kBtu/sf-yr) |
|---|---|---|---|---|---|---|
| BASELINE | 2,738,949 | 86,677 | 2,739 | 8,668 | 18,013 | 63.2 |
| DESIGN | 2,987,711 | 42,793 | 2,988 | 4,279 | 14,474 | 50.8 |
| END-USE SAVINGS | -248,762 | 43,884 | -249 | 4,388 | 3,540 | |
| PERCENT SAVINGS | | | | | 19.6% | |

**GREENHOUSE GAS EMISSIONS**

| Scenario | Total Electricity (tons/yr) | Total Gas (tons/yr) | Total Energy (tons/yr) |
|---|---|---|---|
| BASELINE | 972.3 | 507.5 | 1,479.8 |
| DESIGN | 1,060.6 | 250.6 | 1,311.2 |
| END-USE SAVINGS | -88.3 | 256.9 | 168.6 |
| PERCENT SAVINGS | | | 11.4% |

**Building G [1898 Hall] (Mixed)**

**ENERGY CONSUMPTION**

| Scenario | Total Electricity (kWh) | Total Gas (Therms) | Total Electricity (MWh) | Total Gas (MMBtu) | Total Energy (MMBtu) | EUI (kBtu/sf-yr) |
|---|---|---|---|---|---|---|
| BASELINE | 492,713 | 8,005 | 493 | 801 | 2,482 | 44.7 |
| DESIGN | 380,052 | 8,835 | 380 | 884 | 2,180 | 39.3 |
| END-USE SAVINGS | 112,661 | -830 | 113 | -83 | 301 | |
| PERCENT SAVINGS | | | | | 12.1% | |

**GREENHOUSE GAS EMISSIONS**

| Scenario | Total Electricity (tons/yr) | Total Gas (tons/yr) | Total Energy (tons/yr) |
|---|---|---|---|
| BASELINE | 174.9 | 46.9 | 221.8 |
| DESIGN | 134.9 | 51.7 | 186.6 |
| END-USE SAVINGS | 40.0 | -4.8 | 35.2 |
| PERCENT SAVINGS | | | 15.9% |

**Turbine Hall 1 (Mixed)**

**ENERGY CONSUMPTION**

| Scenario | Total Electricity (kWh) | Total Gas (Therms) | Total Electricity (MWh) | Total Gas (MMBtu) | Total Energy (MMBtu) | EUI (kBtu/sf-yr) |
|---|---|---|---|---|---|---|
| BASELINE | 218,254 | 3,546 | 218 | 355 | 1,099 | 44.7 |
| DESIGN | 168,349 | 3,914 | 168 | 391 | 966 | 39.3 |
| END-USE SAVINGS | 49,905 | -368 | 50 | -37 | 133 | |
| PERCENT SAVINGS | | | | | 12.1% | |

**GREENHOUSE GAS EMISSIONS**

| Scenario | Total Electricity (tons/yr) | Total Gas (tons/yr) | Total Energy (tons/yr) |
|---|---|---|---|
| BASELINE | 77.5 | 20.8 | 98.2 |
| DESIGN | 59.8 | 22.9 | 82.7 |
| END-USE SAVINGS | 17.7 | -2.1 | 15.5 |
| PERCENT SAVINGS | | | 15.8% |

**Building F (High-Rise Residential)**

**ENERGY CONSUMPTION**

| Scenario | Total Electricity (kWh) | Total Gas (Therms) | Total Electricity (MWh) | Total Gas (MMBtu) | Total Energy (MMBtu) | EUI (kBtu/sf-yr) |
|---|---|---|---|---|---|---|
| BASELINE | 2,578,294 | 67,727 | 2,578 | 6,773 | 15,570 | 57.7 |
| DESIGN | 2,877,466 | 30,279 | 2,877 | 3,028 | 12,846 | 47.6 |
| END-USE SAVINGS | -299,172 | 37,448 | -299 | 3,745 | 2,724 | |
| PERCENT SAVINGS | | | | | 17.5% | |

**GREENHOUSE GAS EMISSIONS**

| Scenario | Total Electricity (tons/yr) | Total Gas (tons/yr) | Total Energy (tons/yr) |
|---|---|---|---|
| BASELINE | 915.3 | 396.5 | 1,311.8 |
| DESIGN | 1,021.5 | 177.3 | 1,198.8 |
| END-USE SAVINGS | -106.2 | 219.2 | 113.0 |
| PERCENT SAVINGS | | | 8.6% |

**Building H (High-Rise Office)**

**ENERGY CONSUMPTION**

| Scenario | Total Electricity (kWh) | Total Gas (Therms) | Total Electricity (MWh) | Total Gas (MMBtu) | Total Energy (MMBtu) | EUI (kBtu/sf-yr) |
|---|---|---|---|---|---|---|
| BASELINE | 2,393,430 | 14,722 | 2,393 | 1,472 | 9,639 | 36.4 |
| DESIGN | 2,049,059 | 13,342 | 2,049 | 1,334 | 8,326 | 31.5 |
| END-USE SAVINGS | 344,371 | 1,380 | 344 | 138 | 1,313 | |
| PERCENT SAVINGS | | | | | 13.6% | |

**GREENHOUSE GAS EMISSIONS**

| Scenario | Total Electricity (tons/yr) | Total Gas (tons/yr) | Total Energy (tons/yr) |
|---|---|---|---|
| BASELINE | 849.7 | 86.2 | 935.9 |
| DESIGN | 727.4 | 78.1 | 805.5 |
| END-USE SAVINGS | 122.3 | 8.1 | 130.4 |
| PERCENT SAVINGS | | | 13.9% |

**Turbine Hall 2 (Mixed)**

**ENERGY CONSUMPTION**

| Scenario | Total Electricity (kWh) | Total Gas (Therms) | Total Electricity (MWh) | Total Gas (MMBtu) | Total Energy (MMBtu) | EUI (kBtu/sf-yr) |
|---|---|---|---|---|---|---|
| BASELINE | 205,201 | 3,334 | 205 | 333 | 1,034 | 44.7 |
| DESIGN | 158,281 | 3,679 | 158 | 368 | 908 | 39.3 |
| END-USE SAVINGS | 46,920 | -345 | 47 | -35 | 126 | |
| PERCENT SAVINGS | | | | | 12.2% | |

**GREENHOUSE GAS EMISSIONS**

| Scenario | Total Electricity (tons/yr) | Total Gas (tons/yr) | Total Energy (tons/yr) |
|---|---|---|---|
| BASELINE | 72.8 | 19.5 | 92.4 |
| DESIGN | 56.2 | 21.5 | 77.7 |
| END-USE SAVINGS | 16.6 | -2.0 | 14.7 |
| PERCENT SAVINGS | | | 15.9% |

**Turbine Hall 3 (Mixed)**

**ENERGY CONSUMPTION**

| Scenario | Total Electricity (kWh) | Total Gas (Therms) | Total Electricity (MWh) | Total Gas (MMBtu) | Total Energy (MMBtu) | EUI (kBtu/sf-yr) |
|---|---|---|---|---|---|---|
| BASELINE | 576,268 | 9,363 | 576 | 936 | 2,903 | 44.7 |
| DESIGN | 444,501 | 10,333 | 445 | 1,033 | 2,550 | 39.3 |
| END-USE SAVINGS | 131,767 | -970 | 132 | -97 | 353 | |
| PERCENT SAVINGS | | | | | 12.1% | |

**GREENHOUSE GAS EMISSIONS**

| Scenario | Total Electricity (tons/yr) | Total Gas (tons/yr) | Total Energy (tons/yr) |
|---|---|---|---|
| BASELINE | 204.6 | 54.8 | 259.4 |
| DESIGN | 157.8 | 60.5 | 218.3 |
| END-USE SAVINGS | 46.8 | -5.7 | 41.1 |
| PERCENT SAVINGS | | | 15.8% |

**Admin (Mixed)**

**ENERGY CONSUMPTION**

| Scenario | Total Electricity (kWh) | Total Gas (Therms) | Total Electricity (MWh) | Total Gas (MMBtu) | Total Energy (MMBtu) | EUI (kBtu/sf-yr) |
|---|---|---|---|---|---|---|
| BASELINE | 23,619 | 384 | 24 | 38 | 119 | 44.7 |
| DESIGN | 18,218 | 424 | 18 | 42 | 105 | 39.3 |
| END-USE SAVINGS | 5,401 | -40 | 5 | -4 | 14 | |
| PERCENT SAVINGS | | | | | 12.1% | |

**GREENHOUSE GAS EMISSIONS**

| Scenario | Total Electricity (tons/yr) | Total Gas (tons/yr) | Total Energy (tons/yr) |
|---|---|---|---|
| BASELINE | 8.4 | 2.2 | 10.6 |
| DESIGN | 6.5 | 2.5 | 8.9 |
| END-USE SAVINGS | 1.9 | -0.3 | 1.7 |
| PERCENT SAVINGS | | | 16.0% |

**PROJECT TOTAL**

**ENERGY CONSUMPTION**

| Scenario | Total Electricity (kWh) | Total Gas (Therms) | Total Electricity (MWh) | Total Gas (MMBtu) | Total Energy (MMBtu) |
|---|---|---|---|---|---|
| BASELINE | 18,469,612 | 450,504 | 18,470 | 45,050 | 108,072 |
| DESIGN | 19,177,268 | 237,716 | 19,177 | 23,772 | 89,207 |
| END-USE SAVINGS | -707,656 | 212,788 | -707 | 21,278 | 18,865 |
| PERCENT SAVINGS | | | | | 17.5% |

**GREENHOUSE GAS EMISSIONS**

| Scenario | Total Electricity (tons/yr) | Total Gas (tons/yr) | Total Energy (tons/yr) |
|---|---|---|---|
| BASELINE | 6,556.7 | 2,637.7 | 9,194.4 |
| DESIGN | 6,807.9 | 1,391.8 | 8,199.8 |
| END-USE SAVINGS | -251.2 | 1,245.9 | 994.6 |
| PERCENT SAVINGS | | | 10.8% |

**CONVERSION TABLE**

| CONVERT | MULTIPLY BY |
|---|---|
| KWH TO MWH | 0.001 |
| MWH TO LBS[2] | 710.0 |
| THERMS TO MBTU | 0.1 |
| LBS TO SHORT TONS | 0.0005 |
| kBTU to KWH | 0.293 |
| MMBTU to LBS[3] | 117.1 |

2 mwh to lbs of CO2 conversion factor from 2016 ISO New England Electric Generator Air Emissions Report

3 https://www.eia.gov/environment/emissions/co2_vol_mass.cfm

# Renewable Analysis

# 776 SUMMER STREET – PHOTOVOLTAIC ARRAY STUDY

**TO:** Redgate

**FROM:** WSP

**SUBJECT:** **776 Summer Street – PV Array Study**

**DATE:** **July 10, 2018**

## SUMMARY

The intent of this analysis is to investigate the energy savings associated with installing Photovoltaic (PV) arrays at the 776 Summer Street development in Boston, MA.

The project includes the redevelopment of a 15-acre site with a total gross floor area of 1.9 million SF. The mid-rise buildings (A, B, and a portion of C) are located along the south side of the site and will receive direct sunlight year-round from the east, west, and south. The high-rise buildings (D, E, F, and F) are located along the north side of the site, and are not shaded by adjacent buildings. The location of each building is shown in Figure 1 on Page 2.

Based on the orientation and location of each building, Blocks A, B, C, D, E, F and H have available roof and/or canopy area for a PV array system to be installed. It is assumed 20% of the roof area will be available, with the remaining area reserved for mechanical equipment and amenity space. Block G and the turbine halls are not considered feasible due to their location and shading from adjacent buildings. A detailed shading analysis will need to be completed during the design phase to determine optimal location for each system.

Preliminary analysis indicates approximately 377.7 kW of PV array could be installed. The system would generate an estimated 494,696 kWh per year of electricity, which results in an annual energy cost savings of $79,151. The installed cost of the system would be approximately $1,510,960 with a simple payback of 19.1 years, before any incentives or tax credits are considered.

*Table 1 - Summary of Results*

| Building | Total Roof Area (SF) | Available Roof Area (20% of total roof) (SF) | PV Size (kW) DC | Annual Electricity Generation (kWh) | Annual Energy Cost Savings ($) | Installed Cost ($) | Simple Payback (years) | Percent of total building energy offset (%) |
|---|---|---|---|---|---|---|---|---|
| Block A | 28,600 | 5,720 | 62.9 | 82,401 | $13,184 | $251,680 | 19.1 | 3.7% |
| Block B | 22,000 | 4,400 | 48.4 | 63,386 | $10,142 | $193,600 | 19.1 | 2.9% |
| Block C | 30,300 | 6,060 | 66.7 | 87,299 | $13,968 | $266,640 | 19.1 | 1.8% |
| Block D | 22,100 | 4,420 | 48.6 | 63,674 | $10,188 | $194,480 | 19.1 | 1.6% |
| Block E | 13,900 | 2,780 | 30.6 | 40,048 | $6,408 | $122,320 | 19.1 | 0.9% |
| Block F | 27,500 | 5,500 | 60.5 | 79,232 | $12,677 | $242,000 | 19.1 | 2.1% |
| Block H | 27,300 | 5,460 | 60.1 | 78,656 | $12,585 | $240,240 | 19.1 | 3.6% |
| **TOTAL** | **171,700** | **34,340** | **377.7** | **494,696** | **$79,151** | **$1,510,960** | **19.1** | **2.1%** |

The PV array would offset 2.1% of the total energy consumed by these (7) buildings.

The location and orientation of each building is identified in Figure 1 below.

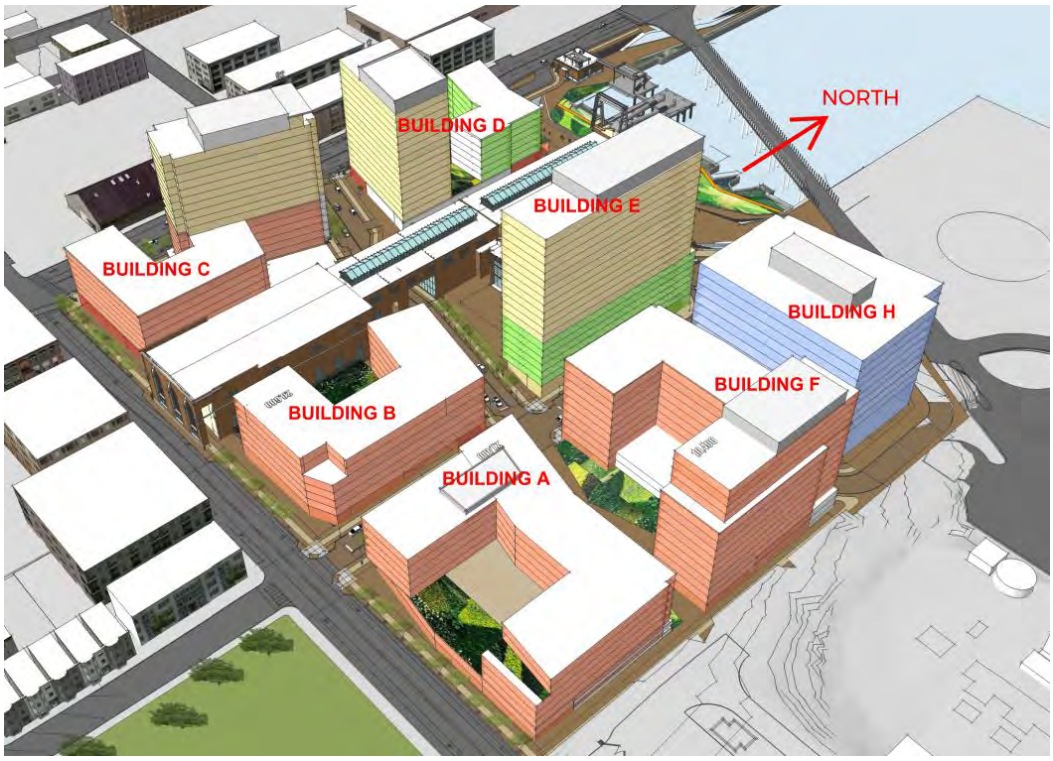



*Figure 1 – View of Overall Site*

The assumptions used in the analysis are as follows:

- Simulation Software: PV Watts
- PV Performance: 11 Watts (DC) per SF of available roof area
- Mounting Angle: Fixed 20˚ above horizontal with azimuth of 180˚F
- Estimated roof coverage = 20%
- Electricity Rate = $0.16/kWh
- Estimated installation cost = $4 per Watt

The following incentive programs are available, per to the MA Clean Energy Center:

- Federal Investment Tax Credit - A credit of up to 30 percent of qualifying project costs.
- Modified Accelerated Cost Recovery System (MACRS): Business owners can depreciate solar electric systems over a five-year schedule.
- Solar Renewable Energy Certificates (SRECs) - Tradeable certificates that can be sold to retail electricity suppliers who are required to meet state renewable energy targets.

The results from the PV Watts Calculator are attached.

NREL

Caution: Photovoltaic system performance predictions calculated by PVWatts® include many inherent assumptions and uncertainties and do not reflect variations between PV technologies nor site-specific characteristics except as represented by PVWatts® inputs. For example, PV modules with better performance are not differentiated within PVWatts® from lesser performing modules. Both NREL and private companies provide more sophisticated PV modeling tools (such as the System Advisor Model at http://sam.nrel.gov) that allow for more precise and complex modeling of PV systems.

The expected range is based on 30 years of actual weather data at the given location and is intended to provide an indication of the variation you might see. For more information, please refer to this NREL report: The Error Report.

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The energy output range is based on analysis of 30 years of historical weather data for nearby , and is intended to provide an indication of the possible interannual variability in generation for a Fixed (open rack) PV system at this location.

# RESULTS

## 494,696 kWh/Year*

*System output may range from 474,809 to 512,703kWh per year near this location.*

| Month | Solar Radiation ( kWh / m$^2$ / day ) | AC Energy ( kWh ) | Energy Value ( $ ) |
|---|---|---|---|
| January | 2.71 | 27,639 | 4,422 |
| February | 3.67 | 33,604 | 5,377 |
| March | 4.49 | 44,226 | 7,076 |
| April | 5.01 | 46,842 | 7,495 |
| May | 5.75 | 53,147 | 8,504 |
| June | 6.03 | 52,165 | 8,346 |
| July | 6.13 | 54,493 | 8,719 |
| August | 5.83 | 52,035 | 8,326 |
| September | 4.93 | 43,446 | 6,951 |
| October | 4.09 | 38,584 | 6,173 |
| November | 2.61 | 24,943 | 3,991 |
| December | 2.35 | 23,572 | 3,772 |
| Annual | 4.47 | 494,696 | $ 79,152 |

### Location and Station Identification

| | |
|---|---|
| Requested Location | 776 summer street boston ma |
| Weather Data Source | (TMY2) BOSTON, MA 2.1 mi |
| Latitude | 42.37° N |
| Longitude | 71.03° W |

### PV System Specifications *(Residential)*

| | |
|---|---|
| DC System Size | 377.74 kW |
| Module Type | Standard |
| Array Type | Fixed (roof mount) |
| Array Tilt | 20° |
| Array Azimuth | 180° |
| System Losses | 14% |
| Inverter Efficiency | 96% |
| DC to AC Size Ratio | 1.1 |

### Economics

| | |
|---|---|
| Average Cost of Electricity Purchased from Utility | 0.16 $/kWh |

### Performance Metrics

| | |
|---|---|
| Capacity Factor | 15.0% |

## 776 Summer St
### PV System Feasibility Study

| Building | Roof Area (sf) | Usuable Area (sf) | PV Size (kW) | Electricity Generation (kWh) | GHG Avoided (tpy) |
|---|---|---|---|---|---|
| Building A | 28,600 | 5,720 | 62.9 | 82,401 | 29 |
| Building B | 22,000 | 4,400 | 48.4 | 63,386 | 23 |
| Building C | 30,300 | 6,060 | 66.7 | 87,299 | 31 |
| Building D | 22,100 | 4,420 | 48.6 | 63,674 | 23 |
| Building E | 13,900 | 2,780 | 30.6 | 40,048 | 14 |
| Building F | 27,500 | 5,500 | 60.5 | 79,232 | 28 |
| Building H | 27,300 | 5,460 | 60.1 | 78,656 | 28 |
| **Total** | **171,700** | **34,340** | **378** | **494,696** | **176** |

# COGENERATION STUDY

**TO:** Redgate

**FROM:** WSP USA

**SUBJECT:** **776 Summer Street Cogeneration Study**

**DATE:** **July 10, 2018**

## OVERVIEW

The intent of this analysis is to investigate the feasibility of including cogeneration and / or trigeneration systems at the 776 Summer Street development in Boston, MA.

Cogeneration is the simultaneous production of electricity with the recovery and utilization of heat (commonly referred to as CHP – Combined Heat and Power). Fuel (natural gas) is used to generate electricity at a facility and a portion of the waste heat from the power generation is then used to provide useful thermal energy.

A trigeneration system operates much like a cogeneration system except with an additional energy output, where the heat produced by the plant is also used for air conditioning or refrigeration. An absorption chiller is linked to the CHP system to provide this functionality. Absorption chillers are thermally driven chillers that use a refrigerant and heat source (i.e. waste heat from cogeneration) to provide cooling. For this analysis, trigeneration was ruled out due to a lack of year-round chilled water load. It is expected that chilled water would primarily be required during the summer months (June through August) and that free-cooling (waterside or airside economizer) would be utilized in the shoulder seasons.

Since the project will be constructed in phases, Modular Cogeneration Systems for each residential and hotel building will provide the most flexibility while optimizing energy efficiency and cost savings. The office, retail and garage structures, which do not have year-round hot water demand, are not ideal for cogeneration.

The total project gross floor area will be 1.9 million SF (not including parking) with residential, hotel, office, and retail uses. A list of each building is identified in the table below.

*Table 1 - Summary of Program*

| Building Name | Building Type | Gross Floor Area (SF) |
|---|---|---|
| Building A | Mid-rise Residential | 166,933 |
| Building B | Mid-rise Residential | 157,880 |
| Building C | High-rise Residential | 372,340 |
| Building D | High-rise Hotel & Residential | 283,870 |
| Building E | High-rise Hotel & Residential | 284,920 |
| Building G (1898 Hall) | Mixed (Office, Civic, or Retail) | 55,490 |
| Turbine Hall 1 | Mixed (Office, Civic, or Retail) | 24,580 |
| Building F | High-rise Residential | 269,920 |
| Building H | High-rise Office | 264,450 |
| Turbine Hall 2 | Mixed (Office, Civic, or Retail) | 23,110 |
| Turbine Hall 3 | Mixed (Office, Civic, or Retail) | 64,900 |
| Admin | Mixed (Office, Civic, or Retail) | 2,660 |

The following utility rates were assumed in the study:

*Electric: $0.16 / kWh*
*Natural Gas: $1.15 / therm*

The following aspects should be considered when investigating cogeneration and trigeneration as a means to supply energy for a project:

1. The technology should only be considered once other priority energy efficiency measures are implemented to reduce the projected energy demand for the site.
2. Volatility in energy prices can cause discrepancies in long term savings versus short term savings.
3. Connection requirements with the utility providers should be determined.
4. Variations in a building's operation and energy demand will impact system efficiency (i.e. if demand for waste heat reduces, using natural gas to generate electricity for power only is far less efficient than importing from the grid.)

## HOURLY THERMAL LOADS

To maximize return on investment a cogeneration system should be sized such that:

1. The cogeneration system operates 24/7/365 with some downtime due to planned maintenance.
    a. When the system is operating, the heat output from the generator(s) will always be displaced to other end use(s) such as space heat, domestic hot water, and/or process loads.

Hourly energy modeling output data was used to develop this analysis along with assumptions on utility costs and equipment performance. To conduct preliminary sizing of the cogeneration system, monthly average thermal load (per energy modeling output data) was populated. See *Figure 1* and *Table 2* below.

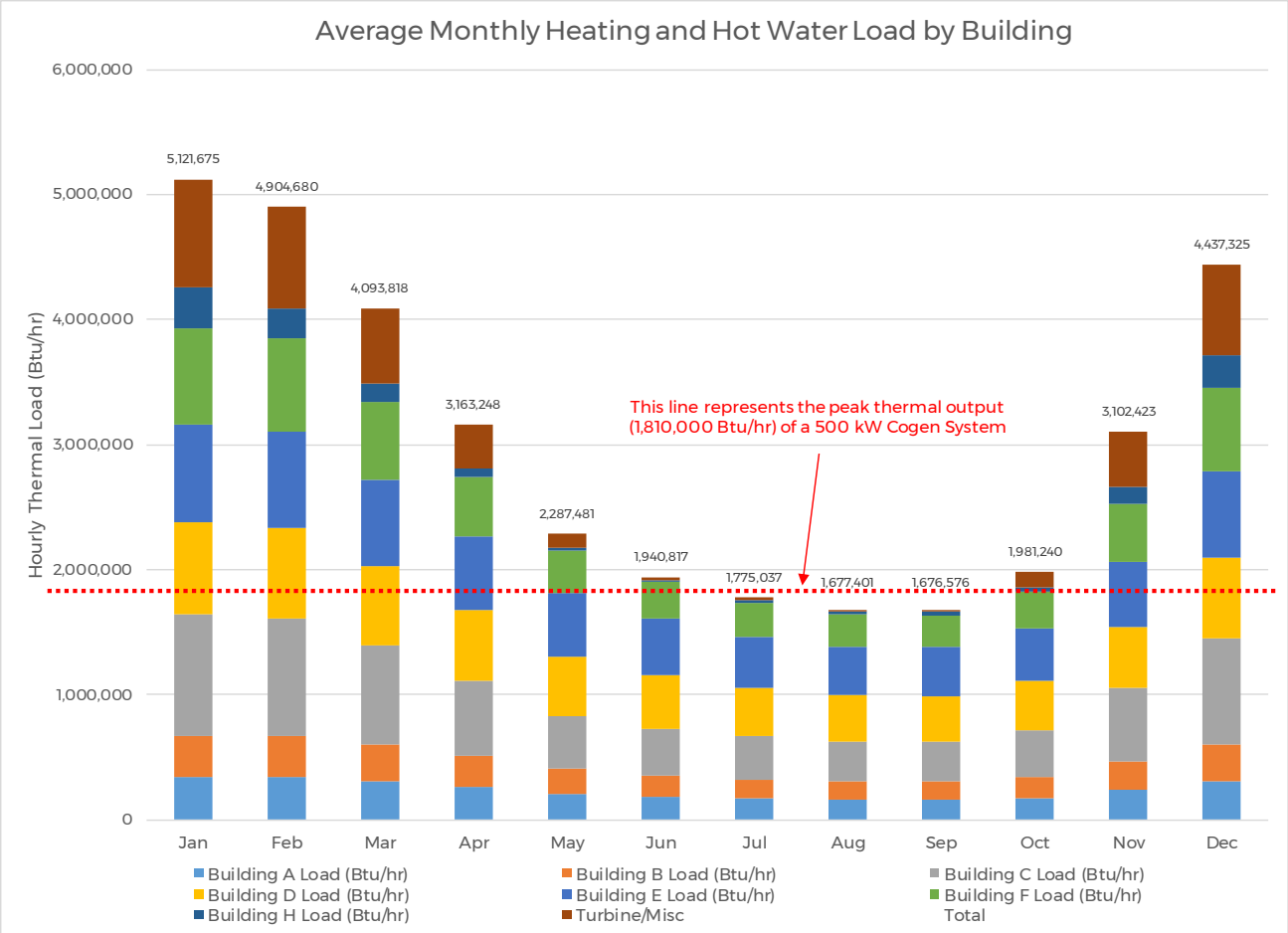



*Figure 1 - Average Monthly Heating and HW Load by Building*

*Table 2 - Average Thermal Load per Building*

| Month | Building A | Building B | Building C | Building D | Building E | Building F | Building H | Turbine/Misc | Total |
|---|---|---|---|---|---|---|---|---|---|
| Jan | 343,474 | 330,168 | 974,366 | 730,738 | 781,832 | 769,593 | 328,492 | 863,012 | 5,121,675 |
| Feb | 342,875 | 329,593 | 937,493 | 724,085 | 774,714 | 740,469 | 244,438 | 811,011 | 4,904,680 |
| Mar | 305,259 | 293,434 | 792,504 | 642,110 | 687,007 | 625,951 | 144,864 | 602,689 | 4,093,818 |
| Apr | 262,385 | 252,221 | 598,831 | 559,306 | 598,413 | 472,981 | 66,842 | 352,270 | 3,163,248 |
| May | 206,379 | 198,385 | 426,508 | 475,513 | 508,761 | 336,873 | 20,808 | 114,255 | 2,287,481 |
| Jun | 180,979 | 173,969 | 374,198 | 423,650 | 453,272 | 295,556 | 16,174 | 23,019 | 1,940,817 |
| Jul | 164,532 | 158,158 | 343,218 | 387,091 | 414,157 | 271,087 | 20,943 | 15,851 | 1,775,037 |
| Aug | 154,663 | 148,671 | 323,509 | 366,624 | 392,259 | 255,520 | 20,059 | 16,096 | 1,677,401 |
| Sep | 154,111 | 148,141 | 321,866 | 364,523 | 390,011 | 254,223 | 28,051 | 15,650 | 1,676,576 |
| Oct | 175,230 | 168,442 | 373,719 | 391,457 | 418,828 | 295,178 | 37,949 | 120,438 | 1,981,240 |
| Nov | 237,904 | 228,688 | 591,929 | 483,277 | 517,068 | 467,529 | 140,124 | 435,905 | 3,102,423 |
| Dec | 308,969 | 297,001 | 843,782 | 647,169 | 692,420 | 666,452 | 265,002 | 716,530 | 4,437,325 |
| All units in Btu/hr | | | | | | | | | |

June through August (see highlighted rows above) represents the month with the minimum average thermal load. Thermal load during this month serves as the limiting factor for sizing the cogeneration plant(s).

# MODULAR COGEN SYSTEM

Install local modular cogeneration systems for each residential and hotel building:

## SYSTEM SIZING

Based on energy modeling load data from the previous charts, the optimal Cogen size is identified by building below:

*Table 3 - Option 2 Cogen Data*

| | Electric Output (kW) | Peak Thermal Output (Btu/hr) | Natural Gas Input (Btu/hr) |
|---|---|---|---|
| Building A | 35 | 204,040 | 407,000 |
| Building B | 35 | 204,040 | 407,000 |
| Building C | 75 | 486,000 | 919,800 |
| Building D | 75 | 486,000 | 919,800 |
| Building E | 75 | 486,000 | 919,800 |
| Building F | 60 | 407,000 | 780,150 |

It is estimated the Cogen would provide approximately 60% of the thermal load, with the remaining load provided hot water boilers.

## ENERGY SAVINGS

Assuming each Cogen runs for 95% of the year (8,322 hours), the annual production is outline below:

*Table 4 - Option 2 Energy Savings*

| | Annual Electric Generation | | Annual Hot Water Generation | | Annual Gas Consumed | | Annual Energy Cost |
|---|---|---|---|---|---|---|---|
| | kWh | Value ($) | Therms | Value ($) | Therms | Cost | Savings |
| Building A | 268,586 | $42,974 | 16,836 | $19,362 | 31,233 | -$35,918 | $26,418 |
| Building B | 264,091 | $42,255 | 16,555 | $19,038 | 30,710 | -$35,316 | $25,976 |
| Building C | 543,565 | $86,970 | 37,874 | $43,555 | 66,663 | -$76,662 | $53,863 |
| Building D | 569,583 | $91,133 | 39,687 | $45,640 | 69,854 | -$80,332 | $56,442 |
| Building E | 585,465 | $93,674 | 40,794 | $46,913 | 71,801 | -$82,572 | $58,015 |
| Building F | 461,487 | $73,838 | 33,660 | $38,710 | 60,005 | -$69,006 | $43,542 |

This results in an annual energy cost savings of **$264,256**

## CONSTRUCTION AND MAINTENANCE COSTS

Construction Cost = $1,420,000

Construction costs for a typical cogeneration system are $4.00 per installed Watt based on previous projects.

Utility Incentives = $282,742

Utility Incentives are estimated at $0.105 per kWh saved.

Annual Maintenance Cost = $53,856

Maintenance Costs are assumed to be $0.02 per kWh generated based on previous projects.

## ECONOMIC SUMMARY

The table below summarizes energy consumption, energy savings, energy cost savings, and maintenance costs associated with central cogeneration system. The overall simple payback is 5.4 years.

*Table 5 – Option 2 Economic Summary*

| | System Installation Cost ($) | Utility Incentive ($) | Annual Maintenance Cost ($) | Annual Energy Savings ($) | Simple Payback (years) |
|---|---|---|---|---|---|
| Building A | $140,000 | $28,202 | $5,372 | $26,418 | 5.3 |
| Building B | $140,000 | $27,730 | $5,282 | $25,976 | 5.4 |
| Building C | $300,000 | $57,074 | $10,871 | $53,863 | 5.7 |
| Building D | $300,000 | $59,806 | $11,392 | $56,442 | 5.3 |
| Building E | $300,000 | $61,474 | $11,709 | $58,015 | 5.2 |
| Building F | $240,000 | $48,456 | $9,230 | $43,542 | 5.6 |

--END--

## 776 Summer St
### Cogen System Feasibility Study

| | Electricity Generated | | Thermal Heat Generated | | Natural Gas Consumed | | GHG Avoided |
|---|---|---|---|---|---|---|---|
| Building | Energy (kWh) | GHG (Tons) | Energy (therm) | GHG (Tons) | Energy (therm) | GHG (Tons) | GHG (Tons) |
| Building A | 268,586 | 95 | 16,836 | 98 | -31,233 | -183 | 11 |
| Building B | 264,091 | 94 | 16,555 | 97 | -30,710 | -180 | 11 |
| Building C | 543,565 | 193 | 37,874 | 222 | -66,663 | -390 | 25 |
| Building D | 569,583 | 202 | 39,687 | 232 | -69,854 | -409 | 26 |
| Building E | 585,465 | 208 | 40,794 | 239 | -71,801 | -420 | 26 |
| Building F | 461,487 | 164 | 33,660 | 197 | -60,005 | -351 | 10 |
| **Total** | **2,692,777** | **956** | **185,406** | **1,085** | **-330,266** | **-1,932** | **109** |

# Passive House Analysis

# MEMO

**TO:** Redgate, VHB

**FROM:** WSP

**SUBJECT:** **776 Summer Street – Passive House [Block B]**

**DATE:** **August 10, 2018**

---

**Project: 776 Summer Street**

The 776 Summer Street development includes the redevelopment of a 15-acre site along the Reserve Channel in Boston, MA. The total project gross floor area will be 1.9 million square feet (not including parking) with residential, hotel, office, and retail uses. The project team is interested in the feasibility of adapting the design to meet the energy consumption limits for heating, cooling, and total building primary energy demand outlined in the Passive House standard and certification program compared to a conventional building envelope.

The following analysis looks at the ASHRAE 90.1 2013 baseline compared to a conventional construction approach as well as a Passive House design. The analysis shows the energy reduction of the two (2) proposed schemes compared to the baseline.

## I. Passive House Principles and Requirements

The passive design principles focus on achieving very low energy use for heating and cooling buildings by implementing design solutions such as optimized orientation and shading, superinsulation, passive solar gains, air-tight envelope, elimination of thermal bridges and efficient HVAC.

There are no prescriptive insulation requirements for Passive House certification, however, in order to meet the strict energy use requirements, a highly insulated envelope is essential. The insulation has to be continuous and connection details free of thermal bridges. Achieving Passive House certification requires the design to meet stringent airtightness standards (n50: 0.6 ACH @ 50Pa). Performance must be verified through blower door testing of the entire building after construction.

The effect of internal loads in a building pursuing the passive house is magnified in a passive house due to the airtight, heavily insulated envelope. To meet energy targets, a passive house design requires reduced internal loads through high efficiency lighting (e.g. LED's) and Energy Star equipment.

Further, the annual energy load needs to be below the climate-specific heating, cooling and primary (source) energy performance metrics provided in the PHIUS+2015 Passive Building Standard. These requirements for climate zone 5A-Boston are summarized below in Table-1.

WSP USA
Suite 210
88 Black Falcon Avenue
Boston, MA 02210

Tel.: +1 617 210-1600
Fax: +1 617 210-1800
wsp.com

**Table 1 – PHIUS+ 2015 Climate Specific Performance Target for Climate Zone 5A**

| | |
|---|---|
| City | Boston |
| State | Massachusetts |
| ASHRAE Climate Zone | 5A |
| Annual Heating Demand (kBtu/sf-iCFA.yr) | 5.3 |
| Annual Cooling Demand (kBtu/sf-iCFA.yr) | 2.9 |
| Peak Heating Load (Btu/sf-iCFA.hr) | 4.4 |
| Peak Cooling Load (Btu/sf-iCFA.hr) | 4.2 |

*iCFA = Interior Conditioned Floor Area*

## II. Energy Modeling Comparison

| Input Summary | Baseline Case (ASHRAE 90.1-2013, Appendix G) | Proposed Design | Proposed Design with Passive House |
|---|---|---|---|
| Roof Insulation | R-30 c.i. | R-40 c.i. | R-60 c.i. |
| Wall Insulation | Steel Framed R-18 | R-18 | R-40 c.i. |
| Windows/Glazing | U-0.42, SHGC-0.4 | U-0.38, SHGC-0.35 | U-0.25, SHGC-0.2 |
| Window-to-Wall Ratio | 30% | 30% | 30% |
| Temperature Setpoints | Cooling Occupied – 75°F<br>Heating Occupied – 70°F | Cooling Occupied – 75°F<br>Heating Occupied – 70°F | Cooling Occupied – 77°F<br>Heating Occupied – 68°F |
| Corridor HVAC System | System 7 - VAV RTU w/HW Reheat and Energy Recovery (50% Eff.) | Packaged DX DOAS unit, hot gas furnace, and Energy Recovery (70% Eff.) | Packaged DX DOAS unit, hot gas furnace, and Energy Recovery (75% Eff.) |
| Corridor Cooling Efficiency | N/A (CHW) | 11.0 EER | 12.0 EER |
| Corridor Heating Efficiency | N/A (HW) | 80% Et Gas Fired Furnace | 80% Et Gas Fired Furnace |
| Residential HVAC System | System 1 - PTAC | Water Source Heat Pumps | VRF |
| Residential Cooling Efficiency | 12.2 EER | 16.2 EER | 12.2 EER |
| Residential Heating Efficiency | N/A (HW) | 5.5 COP | 3.8 COP |
| Domestic Hot Water | Natural Gas – 90% Eff, central unit. | Natural Gas – 95% Eff, combo heating and DHW unit. | Natural Gas – 95% Eff, central unit. |
| Lighting LPD (Building Area) | Common Areas: 0.46 W/sf<br>Parking Garage: 0.19 W/sf<br>Resi. Units: 1.0 W/sf | Common Areas: 0.41 W/sf<br>Parking Garage: 0.17 W/sf<br>Resi. Units: 1.0 W/sf | Common Areas: 0.41 W/sf<br>Parking Garage: 0.09 W/sf<br>Resi. Units: 0.3 W/sf |
| Bathroom Fans | N/A – Exhaust fans included in total system fan energy | N/A – Exhaust fans included in total system fan energy | N/A – Exhaust fans included in total system fan energy |
| Elevators | 25 HP | 25 HP | 25 HP |

| Whole Building Energy Modeling Results | | | |
|---|---|---|---|
| Electricity Usage (MMBtu) | 5,570 | 6,159 | 4,425 |
| Natural Gas Usage (MMBtu) | 4,247 | 1,735 | 1,958 |
| Total Energy Usage (MMBtu) | 9,817 | 7,894 | 6,383 |
| Energy Reduction from Baseline | | 19.6% | 35.0% |

## III. Energy Reduction vs. Cost

To determine the feasibility of the cost of these three design schemes, the development team created a cost comparison to evaluate the financial viability of each option.

| Category | Baseline Case (ASHRAE 90.1-2013) | Proposed Design | Proposed Design with Passive House |
|---|---|---|---|
| HVAC | $25.00/SF | $42.00/SF | $52.00/SF |
| Exterior Envelope | $53.00/SF | $55.60/SF | $59.75/SF |
| Windows/Glazing | $19.50/SF | $21.00/SF | $26.25/SF |
| Total | $97.50/SF | $118.50/SF | $138.00/SF |

## IV. Summary

The proposed design scheme employs a number of energy reduction strategies as outlined in the chart in section II, and achieves an 19.6% energy reduction when compared to the baseline ASHRAE 90.1 2013, App. G standard. A “Passive House” design that follows all the criteria for materials, insulation, systems, glazing, etc as shown in section II above is able to achieve a 35% energy reduction compared to the same baseline standard. However, the first costs associated with the Passive Design are more than 16% higher than the proposed design, and since these will either condominium units or rental apartments, the lifetime pay back of the more efficient systems will not benefit the development team. We recommend moving forward with the proposed design.

# Appendix G: Construction Management Plan

# L Street Station Redevelopment
# 776 Summer Street, South Boston MA

## Draft Construction Management Plan
## July 31, 2018



**Submitted to:**
RedGate Real Estate
Ms. Megha Vadula
Sr. Project Manager
265 Franklin Street, 6th Floor
Boston, MA 02110

**Prepared by:**
Gilbane Building Company
Michael Kearns
Sr. Project Executive
10 Channel Center Street
Suite 100
Boston, MA 02210

## Introduction

The purpose of this Draft Construction Management Plan (CMP) is to develop a proactive approach to identify and address the potential impacts on the community that will arise during construction of the L Street Station Redevelopment Project (the "Project") and to minimize these impacts where possible. This draft CMP addresses impacts of the Project on the City, the Public, and the surrounding buildings.

## Project Description

Redgate Real Estate (the "Proponent") is undertaking the redevelopment of the former Boston Edison L Street Power Station, located at 776 Summer Street Boston, MA. The redevelopment will include the demolition of much of the existing power plant buildings, the historic restoration of Turbine Halls 1, 2 and 3 and the 1898 Building plus the development of new buildings, parks and open space surrounding the remaining historic structures.

## Project Site

The site of the Project is an approximately 15-acre site bound by the Reserved Channel to the north; land owned by the Massachusetts Port Authority (MassPort) and the Massachusetts Bay Transportation Authority (MBTA) to the east; East First Street to the south; and Summer Street to the west (the "Project Site"). The site currently houses the former Boston Edison L Street Power Station, consisting of several buildings of various ages, ranging in height from one (1) story to 330 feet.

## Construction Hours of Operation

Per the City of Boston's Noise Regulations, the typical hours of construction operations will be from 7:00AM – 5:00PM Monday thru Friday, and will depend on the type of work being performed. Weekend work may be necessary on occasion to meet the Project schedule. Any work performed after hours or on weekends will be performed by permit from Boston Inspectional Services.

## Site Fencing

The Project Site will be defined by chain link fencing with fabric scrim along Summer Street. The fence will occupy the buildings side of the sidewalk along Summer Street allowing pedestrians to continue to use the sidewalk on that side of the street.

There will be entrance gates at the existing Summer Street entrance and on East First Street to allow for drive-through truck access, helping to facilitate onsite vehicle circulation. Vehicles will be required to consistently enter one side of the site and exit through the other.

## Site Vehicle Access

To minimize impacts to the community during the Project, Gilbane proposes a single vehicle access route to the Project Site for large trucks and small deliveries:

Heavy construction vehicles will travel to and from the Project site from I-93 and I-90 via Summer Street, limiting the addition of new construction vehicle traffic on South Boston neighborhood streets.

Large deliveries may be required to back into the Summer Street gate. When this work is required, detail officers may be requested from the Boston Police Department.

Wheel wash stations will be set up at each gate inside the construction fence.

## Pedestrian Sidewalk Access

The sidewalk directly in front of the Project Site along Summer Street is proposed to remain open, and usable by pedestrians. Accommodations will be made to maintain ADA compliant access throughout the construction period.

Temporary chain link fencing with fabric scrim will be installed at the edge of the existing sidewalk curb line on Summer Street. Signage will be installed directing pedestrians and alerting vehicles of the construction project.

The sidewalk on East First Street will also remain open during construction. A covered walkway with permanent lighting may be required during the restoration of the East First Street end of the Turbine Hall.

Phased reconstruction of the Summer Street and East First Street sidewalks will occur closing parts of each and directing pedestrians across the street in phased sections. Appropriate signage and barricades will be installed and police details will be used as necessary.

## Signage and Distribution of Information

Signage will direct pedestrians around the Project Site as well as direct truck traffic and deliveries. Proper signage will be placed at every corner of the site as well as in those areas that may be confusing to pedestrians and automobile traffic.

The site will have a sign installed that will list the name and contact information, including the phone number, for Gilbane Building Company's designated 24-hour contact. This sign will be clearly visible to enable the public to call with any questions or concerns or contact Gilbane in an emergency.

## Abutter and Agency Coordination

Gilbane construction recognizes the challenges of building in an urban setting and the importance of responding to the needs of adjacent businesses and residents. The abutting properties will be informed of the scheduled start of construction, and will be updated on the development during its construction on a regularly scheduled cadence.

## Emergency Vehicle Access & Fire Lanes

Emergency vehicle access to the site and surrounding properties will remain unchanged. No fire lanes will be taken up during the construction process. Access to adjacent buildings will be maintained through their current entrances. Boston Police details will be used as necessary to facilitate safe access around the site. The site lay-out will be reviewed with the Boston Fire Department.

## Parking

Because of the size and vacancy of the site, contractor parking will be created within the Project Site's boundaries. The work force will be arriving before the peak traffic periods in the

surrounding area and are not expected to substantially impact traffic conditions. The contractors will have storage areas for their workers on the Project Site for small tools and equipment. Signage will be established for the drop off area and there will be "No Idling" signage posted to alleviate air quality issues with idling vehicles. The area will be monitored for compliance daily by Gilbane and enforced to meet these criteria.

***All workers will be encouraged to utilize public transportation.***

## Storage

Storage of materials and equipment will be contained within the Project Site, in the vicinity of where the Project trailers will be located. If additional lay-down or trailers are required, they are anticipated to be accommodated on the site.

## Construction Traffic Impacts

As identified above, there will be primarily on-site parking. The construction work force will also be strongly encouraged to use public transportation.

## Construction Mitigation Measures

### Dust Control

It is the intention of this CMP to mitigate the fugitive dust and soils that will unavoidably be generated during construction.

To reduce emission of dust and to minimize impacts on the environment, Gilbane will adhere to several strictly enforced mitigation measures, including the following:

- Dust will be controlled by wetting down with hoses during any demolition and site work activities.
- Where hosing down is impractical, wetting agents will be used regularly to control and suppress dust that has the potential to become airborne by wind.
- Diesel-powered equipment will be required to meet the MA Diesel Retrofit Program for particulate matter emissions. Equipment that does not meet this criterion will be required to be retrofitted to include a particulate matter filter scrubber.
- Storage of construction debris will be within the fenced-in site.
- Street cleaning shall be provided by mechanical street sweepers as required.
- Sidewalks will be cleaned regularly to minimize dust accumulations.
- Trucks will be required to cover their loads before starting to move off the site.

An initial background study of existing air quality around the Project Site will be performed to document conditions prior to any demolition or construction work creating a baseline of data as a reference should any issues of questions arise.

**Noise Control**

Every reasonable effort will be made to minimize the noise impact of construction activities. Mitigation measures will include:

- No heavy equipment will start up prior to 7:00am.
- "No idling" signs will be posted at all loading/delivery and pick-up/drop-off areas and at surface parking spaces.
- Trucks may not idle at the Project Site for more than 5 minutes unless their operation is dependent on the vehicle to be running.
- Gilbane will follow regulations in the MA State Anti-Idling law.
- Locating noisy equipment as far as possible from sensitive areas.
- Maintaining muffling enclosures on continuously running equipment, such as air compressors and welding generators.
- Selecting quieter alternative items of equipment when possible (e.g. electric instead of diesel powered equipment).
- Work shall be performed to prevent nuisance noise conditions that are preventable (e.g., unmaintained equipment, brake squeal, etc.).

**Vibration Control**

Prior to and during construction, the Project team proposes to implement a monitoring program to document pre-construction conditions, and to detect construction effects on adjacent structures, if any. Acceptable vibration criteria will be established prior to demolition/construction. Vibration will be monitored to ensure compliance with the agreed-upon standard. The program will identify adjacent buildings most likely to be impacted by the proposed construction. Preconstruction existing conditions surveys of these adjacent structures will be conducted and documented. In addition, the program will incorporate an instrumentation program which would include:

- Elevation reference points on adjacent buildings and structures;
- Monitoring gages on cracks that may be identified in adjacent building;
- Survey points to monitor lateral deflection of the excavation support system;
- Vibration monitoring during vibration generating activities such as major demolition

All means and methods for performing work at the Project Site will be evaluated to minimize potential vibration impacts on the adjacent properties and other nearby buildings. A pre-construction survey will be taken to set a baseline for all abutters and interested parties.

**Dewatering**

It is anticipated some dewatering will be required where the basement is excavated. Assuming dewatering will be required it will be accomplished with-in the site perimeter, with the appropriate permits obtained from both the Boston Water and Sewer Commission and Massachusetts Water Resources Authority.

**Utility Connections**

Any utility connections will be coordinated with the Boston Transportation Department, Boston Police Department and Boston Water and Sewer Commission. This work will be limited in duration as much as possible and closely coordinated to minimize traffic impact in that area.

**Rodent Control**

To control the infestation, the City enforces the requirements established under the Massachusetts State Sanitary Code, Chapter 11,105 Section 108.6. Policy Number 87-4 established that the extermination of rodents shall be required for the issuance of permits for demolition, excavation, foundation, and basement rehabilitation. Gilbane will develop and implement a rodent control program for the project prior to its construction start.

**Storm Water Pollution Prevention Plan (SWPPP) for Run Off Water**

The Project, due to its phased components, is not anticipated to disturb over an acre of land at any one time. If the project scope changes, the Proponent will review NPDES requirements. Any construction dewatering discharges will be appropriately controlled and discharged in accordance with the NPDES state and local dewatering standards. An overall site-specific Storm Water Pollution Prevention Plan (SWPPP) will be developed in accordance with federal (EPA) and local (MA-DEP) regulatory agency requirements.

**Erosion Control Measures**

Erosion control measures will be implemented based on recommendations from the civil & environmental engineering team and construction best-practices. Hay-bales & silt-fencing will be utilized, where applicable, and monitored on a daily-basis to maintain and mitigate erosion and sediment effects. Filter baskets will be installed at all catch basins in the site area. These will be monitored and maintained weekly.

**Snow Removal**

Gilbane will remove snow from all sidewalk areas adjacent to the work site and within the site fence. This will be done daily and continuously, as necessary, to ensure that all sidewalks adjacent to the work site are clear of snow and ice. Under no condition will the removed snow be disposed of on public property or into the waterways.

**Odor Control**

Trash disposal/ site maintenance will be conducted on a regular basis as to not create unwanted odors. If an odor is detected during construction it will be investigated and addressed appropriately.

**Street Cleaning**

There will be a permanent wheel wash station located at the truck exit to ensure that very little if any street cleaning will be needed. Street cleaning will be provided if deemed necessary

**Construction Waste**

A clean site is a safe site. Gilbane takes great pride in maintaining a clean, well-organized Project Site. Gilbane will take an active role with regards to the removal of construction waste. The demolition and excavation contracts will include specific requirements, which will ensure construction procedures allow for necessary segregation, reprocessing, re-use, and recycling of materials. For those materials that cannot be recycled, solid waste will be transported in covered

trucks to an approved solid waste facility, per the Department of Environmental Protection Regulations for Solid Waste Facilities, 310 CMR 16.00. This requirement will be specified in all appropriate bid documents and contracts.

## Emergency Contacts

*Gilbane Building Company – Boston Office*
*(6l7)-478-3300 Gilbane Building Company*
*Project Team Contact Numbers*

| Title | Name | Cell Phone Number |
|---|---|---|
| Project Manager | | |
| General Superintendent | | |
| Asst. Superintendent | | |
| Community Liaison | | |
| Safety Manager | | |

# Appendix H: Public Comments

Materials are provided on the enclosed CD-ROM.

# ENF Comment Letters

# The Commonwealth of Massachusetts
## Executive Office of Energy and Environmental Affairs
### 100 Cambridge Street, Suite 900
### Boston, MA 02114

Charles D. Baker
GOVERNOR

Karyn E. Polito
LIEUTENANT GOVERNOR

Matthew A. Beaton
SECRETARY

Tel: (617) 626-1000
Fax: (617) 626-1081
http://www.mass.gov/eea


July 14, 2017

CERTIFICATE OF THE SECRETARY OF ENERGY AND ENVIRONMENTAL AFFAIRS
ON THE
ENVIRONMENTAL NOTIFICATION FORM

| | |
|---|---|
| PROJECT NAME | : L Street Station Redevelopment |
| PROJECT MUNICIPALITY | : Boston |
| PROJECT WATERSHED | : Boston Harbor |
| EEA NUMBER | : 15692 |
| PROJECT PROPONENT | : HRP 776 Summer Street, LLC |
| DATE NOTICED IN MONITOR | : May 24, 2017 |

Pursuant to the Massachusetts Environmental Policy Act (M.G.L. c. 30, ss. 61-62I) and Section 11.03 of the MEPA Regulations (301 CMR 11.00), I hereby determine that this project **requires** the preparation of a mandatory Draft Environmental Impact Report (DEIR).

As described in the Environmental Notification Form (ENF), the project consists of the construction of approximately 2.1 million square feet (sf) of mixed use development, including 1.5 million sf of residential uses (approximately 1,588 units), 339,639 sf of office space, 68,077 sf of retail uses, a 150-room hotel and 987 parking spaces in below-grade garages and surface parking lots. It includes the rehabilitation and reuse of three turbine halls associated with the site's historic use as a power plant. The project will provide 104,500 sf (approximately 2.4 acres) of publicly accessible outdoor space, including a 1.15-acre waterfront park along Reserved Channel. Vehicular access through the site will be provided by an east-west roadway from Summer Street opposite Elkins Street and a north-south roadway from East 1st Street opposite M Street.

The project will be constructed in eight development blocks as described below. With the exception of Blocks G and H, the buildings are primarily residential:

- Block A: A 70-ft high, seven-story residential building with an at-grade parking lot, to be located at the southeastern corner of the site along East 1st Street;

- Block B: A 60-ft high, six-story residential building with below-grade parking, to be located in the southern portion of the site along East 1st Street;
- Block C: A 220-ft high, 21-story residential building to be located at the corner of East 1st Street and Summer Street, with retail uses on the ground floor and a below-grade parking garage extending north to the Block D site;
- Block D: A 170-ft high, 16-story residential and hotel building to be located along Summer Street north of Block C and adjacent to the waterfront open space, with retail uses on the ground floor and a below-grade parking garage;
- Block E: A 200-ft high, 20-story residential building to be located north of Block B in the center of the site, with below-grade and at-grade parking areas extending to Block G and the turbine halls;
- Block F: A 200-ft high, 20-story residential building to be located north of Block A, with an at-grade surface parking lot;
- Block G: A 79-ft high, six-story office building with retail uses on the ground floor, to be located adjacent to the waterfront open space north of Block E; and
- Block H: A 128-ft high, 10-story office building with retail uses on the ground floor, to be located adjacent to the waterfront open space north of Block F.

The three turbine halls are located at the center of the site and extend from the planned waterfront open space to East 1st Street. The buildings will be restored and programmed with retail and other community uses that will extend to outdoor patios. A small existing building located along Summer Street will be reused. All other existing buildings will be demolished.

Project Site

The 15-acre project site is bounded by Summer Street to the west, Reserved Channel to the north, land owned by the Massachusetts Bay Transportation Authority (MBTA) to the east, and East 1st Street to the south. The site is located between the primarily residential South Boston neighborhood to the south and commercial and maritime uses such as the Massachusetts Port Authority's (MassPort) Black Falcon passenger terminal, Massport's Dedicated Freight Corridor (DFC) cargo haul road serving the Conley Container Terminal to the east, and other commercial uses. The site was used as an electrical generating facility for over 100 years before being decommissioned in 2007. It consists of several buildings that housed generation equipment and associated infrastructure. The eastern portion of the site has been cleared of structures. The site is fenced and inaccessible to the public.

The site is located in the South Boston Designated Port Area (DPA), one of ten such areas designated by the Commonwealth to promote water-dependent industrial uses. The electric generating station was an allowed use within the DPA because of the necessity to withdraw large volumes of cooling water from the Reserved Channel. The Proponent has submitted a request to the Massachusetts Office of Coastal Zone Management (CZM) for a DPA Boundary Review pursuant to Designation of DPA Regulations at 301 CMR 25.00 to remove the site from the DPA.

A four-acre area of the site adjacent to Reserved Channel consists of filled tidelands subject to the Massachusetts Department of Environmental Protection's (MassDEP) jurisdiction under M.G.L. Chapter 91 (c. 91). According to the Federal Emergency Management Agency's

(FEMA) Flood Insurance Rate Map (FIRM) number 25025C0083J (effective March 16, 2016), a portion of the site is located within the 100-year floodplain (Zone AE) with a Base Flood Elevation (BFE) of 12 ft NAVD 88 (18.45 ft Boston City Base (BCB)) on land and 13 ft NAVD 88 (19.45 ft BCB) over water. The site is sloped from east to west and from south to north, with a grade change of approximately 15 feet.

The site was identified for mixed-use development in the Imagine Boston 2030 citywide plan. The site is located within the South Boston Marine Economy Reserve Subdistrict of the Harborpark Dorchester Bay/Neponset River Waterfront District and the Restricted Parking Overlay District (RPOD). The Boston Planning and Development Agency (BPDA) has commenced a public review process that included public meetings to solicit the community's vision for the site and the preparation of the South Boston Edison Power Plant Planning Process Report (PPR). According to the BPDA, the PPR will provide the foundation for its Large Project Review process under Article 80B of the City of Boston Zoning Code. The Proponent has indicated that it will submit a Planned Development Area (PDA) Development Plan for approval by the BPDA.

Environmental Impacts and Mitigation

The project will add 2.7 acres of impervious area, alter 93,000 sf of Land Subject to Coastal Storm Flowage (LSCSF), and create four acres of new nonwater-dependent use of tidelands. The new office, retail, and residential uses will generate 20,370 new unadjusted average daily trips (adt). The ENF indicated the number of new vehicular trips to be approximately 10,250 adt when adjusted to reflect the use of alternate modes of transportation, such as transit and walking, to access the site. The project will add 712 parking spaces to the site for a total of 987 spaces. The project uses will consume 329,890 gallons per day (gpd) of water and generate 299,900 gpd of wastewater. The project will release emissions of Greenhouse Gasses (GHG) and other air pollutants associated with the burning of fossil fuels for on-site energy use and automobile travel by residents and visitors to the site.

The project will employ stormwater Best Management Practices (BMPs) to improve the water quality and flow rate of stormwater discharged from the site, including infiltrating stormwater to the ground. The site will be raised to establish a first-floor elevation that is designed to withstand the effects of sea level rise and the project will incorporate other climate change adaptation measures. The project includes publicly accessible waterfront open space and other public interior and exterior spaces. It will minimize and mitigate transportation-related impacts through implementation of Transportation Demand Management (TDM) measures such as encouraging use of public transit and other alternate modes of travel. The project will employ measures to conserve water and contribute to Infiltration/Inflow (I/I) reduction to preserve sewer capacity. The project will mitigate GHG emissions by incorporating energy efficiency measures into the building design and potentially generating renewable energy on-site.

Permitting and Jurisdiction

The project is undergoing MEPA review and subject to preparation of a mandatory Environmental Impact Report (EIR) pursuant to Section 11.03(3)(a)(5) because it requires State Agency Permits and includes a new nonwater-dependent use of one or more acre of tidelands and will generate 3,000 or more new adt on roadways providing access to a single location. The

project exceeds the ENF thresholds at 301 CMR 11.06(b)(15) (construction of 300 or more new parking spaces at a single location) and 301 CMR 11.03(10)(b)(a) (demolition of any historic structure listed in or located in any historic district listed in the State Register of Historic Places or in the Inventory of Historic and Archaeological Assets of the Commonwealth). The project requires a c.91 License and it may require a Section 401 Water Quality Certificate (WQC) from MassDEP. It is also subject to the MEPA GHG Emissions Policy and Protocol and will require a Public Benefit Determination (PBD). The Proponent has requested a DPA Boundary Review from CZM.

The project requires an Order of Conditions from the Boston Conservation Commission (BCC) (or in the case of an appeal, a Superseding Order of Conditions (SOC) from MassDEP). It will require Article 80 Review by the BPDA and a Transportation Access Plan Agreement (TAPA) and Construction Management Plan approval from the Boston Transportation Department (BTD). The project requires a determination of no hazard to air navigation from the Federal Aviation Administration (FAA). It will require a National Pollutant Discharge Elimination System (NPDES) Stormwater General Permit from the United States Environmental Protection Agency (EPA) and may require a Section 10/Section 404 permit from the Army Corps of Engineers (ACOE). The project requires review by the Massachusetts Historical Commission (MHC) and development of a Memorandum of Understanding (MOU).

Because the Proponent is not seeking State Financial Assistance, MEPA jurisdiction extends to those aspects of the project that are within the subject matter of required or potentially required State Permits and that may cause Damage to the Environment, as defined in the MEPA regulations. Because the project requires a c.91 License, MEPA jurisdiction is broad in scope and extends to all aspects of the project that may cause Damage to the Environment, as defined in the MEPA regulations.

## SCOPE

### General

The DEIR should follow Section 11.07 of the MEPA regulations for outline and content, as modified by this scope. The DEIR should clearly demonstrate that the Proponent has sought to avoid, minimize and mitigate Damage to the Environment to the maximum extent feasible.

The project, as proposed, is dependent upon a change in the South Boston DPA Boundary. The Proponent has requested that CZM review the DPA Boundary for its site. CZM determined that a broader review of the South Boston DPA boundary for the planning area located south of the Reserved Channel, including the project site, is warranted. The review will consider recent changes in land ownership, uses, and improvements to transportation infrastructure including the DFC. Through its review, CZM will determine whether areas south of the Reserved Channel are in substantial conformance with the criteria that govern suitability of the waters and land to accommodate water-dependent industrial use. The Boundary Review may result in reconfiguration of the DPA boundary such that the site is excluded from the DPA. The July 12, 2017 edition of the *Environmental Monitor* included a Notice of Intent to Review the South Boston DPA from CZM. The request is subject to a 30-day public comment period, which ends on August 11, 2017, and a public meeting will be held on July 25, 2017.

I note comments requesting that MEPA review not proceed until a determination is made upon the Boundary Review process because of its relevance to the feasibility of the proposed project. Review of the DEIR may proceed concurrently with the Boundary Review process; however, it is predicated on inclusion of a DPA-Compliant Alternative in the alternatives analysis and a discussion regarding the substance and timing of the Boundary Review process. A determination must be complete prior to filing of the FEIR to ensure that any relevant terms and conditions of the Boundary Review inform the MEPA process and draft Section 61 Findings. C.1

Public Comments

I received many thoughtful comment letters from elected officials, including Representative Stephen F. Lynch, State Senator Linda Dorcena Forry, State Representative Nick Collins, and City Councilor Michael F. Flaherty, state agencies, community groups and residents. While recognizing the benefits of redeveloping the site, commenters expressed concern about the significant impacts of the project on the already strained traffic and parking conditions in South Boston and the lack of clear mitigation to address these effects. The community, its representatives and Massport have worked constructively over many years to provide a buffer between the neighborhood and Massport's facilities to mitigate impacts while supporting economic growth associated with the DPA. Construction of the DFC and Butler Park was intended to mitigate the noise, air emissions, and truck traffic associated with the operation of Conley Terminal. Commenters are concerned that the project will introduce new impacts and may be incompatible with industrial uses along Reserved Channel.

Project Description and Permitting

The ENF described existing site conditions and provided a basic project description and conceptual plans. It identified the project's impacts on tidelands, transportation, water and sewer use, stormwater management, GHG emissions, and historic resources, and acknowledged the need to mitigate these impacts. The ENF reviewed short-term impacts anticipated during the construction period and identified potential mitigation measures. It evaluated an alternative project design and compared its potential impacts to the Preferred Alternative. The ENF acknowledged the site's location within the DPA and Maritime Economy Reserve zoning district and the project's inconsistency with the emphasis on maritime uses imposed by those designations.

The DEIR should include plans and a detailed description of existing conditions, including site topography, soil conditions, and infrastructure. The DEIR should describe the project and identify any changes to the project since the filing of the ENF. It should include updated site plans for existing and post-development conditions at a legible scale. Conceptual plans should be provided at a legible scale and clearly identify buildings, public areas, impervious areas, pedestrian and bicycle accommodations, and stormwater and utility infrastructure. C.2

It should identify and describe State, federal and local permitting and review requirements associated with the project and provide an update on the status of each of these pending actions. The DEIR should include a description and analysis of applicable statutory and regulatory standards and requirements, and a discussion of the project's consistency with those C.3

standards. It should identify and describe projects in the vicinity of the project site, including maritime-related uses at MassPort's facilities and the Raymond L. Flynn Marine Park, which may be constructed concurrent with or prior to the project and describe how roadway, transit and pedestrian improvements and construction phasing related to those developments may affect the project. C.3

According to the ENF, the project will be developed over a 10-year period commencing in 2018, with the rehabilitation of the turbine halls and construction of the residential buildings along East 1st Street as the first phase. The DEIR should describe likely phasing scenarios, and discuss how mitigation measures will be implemented in the phasing scenarios to ensure that project impacts are appropriately mitigated as development proceeds. C.4

Alternatives Analysis

The ENF compared the Preferred Alternative to a No Build Alternative and a reduced build option identified as Alternative B. The No-Build Alternative would maintain the existing buildings and continue their use for power generation. According to the ENF, this is the only realistic water-dependent industrial use of the site because the DFC blocks direct access to Reserved Channel. This alternative would comply with the c. 91 regulations for filled tidelands in a DPA, but would not provide any public access to the site. The No Build Alternative would not result in any new impacts related to traffic generation, wastewater and water use, or historic resources, but would continue impact water quality through cooling water withdrawals and discharges into Reserved Channel.

Alternative B would involve the reuse of the existing buildings to provide 1.5 million sf of office uses and the construction of a 1,500-space parking garage. This alternative would reactivate the site but would not meet the goals for a mixed-use development of the site with public access. It would include the nonwater-dependent use of tidelands and therefore would not be consistent with the c. 91 regulations for tidelands in a DPA and would provide limited public access with no interior Facilities of Public Accommodation (FPA). The office uses would generate over 1,000 vehicle trips during the morning and afternoon peak periods compared to 620 to 692 rush hour trips associated with the Preferred Alternative, and would include approximately 500 more parking spaces than the Preferred Alternative. Alternative B would use 123,750 gpd of water and generate 112,500 gpd of wastewater, compared with the expected use of 329,890 gpd of water and generation of 299,900 gpd of wastewater by the Preferred Alternative. Alternative B would add 3.2 acres of impervious area, approximately 0.5 acres more than the Preferred Alternative.

The Preferred Alternative was designed to provide a mixed-use development consistent with planning goals for the site. As with Alternative B, the Preferred Alternative cannot comply with the c. 91 regulations without a revision to the DPA boundary; however, it has been designed to provide greater public use of the site including the waterfront open space. In addition, the Preferred Alternative will result in a greater degree of remediation of contamination at the site compared to the other alternatives.

The DEIR should provide an expanded alternatives analysis including the following:

- A DPA-Compliant Redevelopment Alternative that reserves the waterfront portion of the site for use in connection with the transfer of goods between ships and land, including operational space for water-dependent industrial uses and/or access to land-based transportation and utilities while incorporating other uses into the non-DPA area of the site;
- A DPA-Compatible Redevelopment Alternative that maximizes the ability of the project to be compatible with nearby industrial and transportation-related uses, including the Conley Terminal and the MBTA bus facility adjacent to the site. This alternative may include: repositioning much of the open space away from the DFC; adding additional open space (including expanding Butler Park) to provide a greater buffer from industrial uses; removing, relocating or reorienting planned residential buildings away from the DPA side of the site; changes in use of the proposed buildings; and/or sound-proofing and other measures recommended by Massport. The analysis should be supported by existing noise data reflecting port operations and potential impacts of truck use of the DFC, such as dust, noise, and air quality; and
- A Reduced Density Alternative that minimizes traffic impacts by reducing the density of the development and/or by increasing the proportion of uses that generate fewer trips. This alternative may include measures that should be evaluated as components of the DPA-Compatible alternative, such as increasing the open space buffer along the eastern side of the site.

C.5

As noted in the GHG section, I strongly encourage the Proponent to review an alternative that employs passive design principles in the residential buildings to minimize GHG emissions and enhance the resiliency of the project to the effects of climate change.

The DEIR should provide a detailed comparison of the alternatives, including detailed descriptions and plans of each alternative. The DEIR should compare the environmental impacts of each alternative, quantitatively to the extent practicable, with respect to trip generation, traffic operations, pedestrian and bicycle access, water use, wastewater generation, impervious area, tidelands, wetlands resource areas and GHG emissions.

Tidelands and DPA

The entire site is located within the DPA, within which allowable uses under the c. 91 regulations are generally limited to water-dependent industrial uses, such as commercial fishing, marine cargo terminals, and industrial uses relying on proximity to the shoreline for ship-to-shore transfer of material or withdrawal of process water. The site's historic use for power generation was considered a water-dependent industrial use because it withdrew cooling water from Reserved Channel. The proposed project includes nonwater-dependent uses on tidelands in the DPA, which may not be permittable under the c. 91 regulations. As noted previously, the Proponent has requested that CZM review the boundary of the South Boston DPA. If the project site were removed from the DPA, the project would be required to comply with any other applicable c. 91 regulatory standards. According to CZM, it will conduct its review in accordance with the Designation of DPA Regulations at 301 CMR 25.00.

The DEIR should identify all water-dependent industrial uses in the vicinity of the site, including Massport's Flynn Cruiseport and the Conley Container Terminal, and describe any potential impacts to those uses or incompatibility between industrial uses and the proposed residential use. According to Massport, 900 trucks per day are expected to use the DFC once it is completed; this number is expected to rise to 2,410 trucks per day by 2022. The DEIR should propose mitigation measures for any impacts or potential conflicts, including buffering the residences from industrial activities, using a Residential Use Restriction, use of soundproofing materials in the construction of the residential units, and other measures indicated in Massport's comment letter. C.6

Approximately four acres of the site adjacent to Reserved Channel are comprised of filled tidelands. According to the ENF, 18 c. 91 licenses have been issued authorizing all fill and structures at the site. The ENF reviewed the project's compliance with the c. 91 regulations, particularly those pertinent to nonwater-dependent uses, under the assumption that the project will not be subject to DPA use requirements in the future. The project design does not include any new buildings for nonwater-dependent use within the Water-Dependent Use Zone (WDUZ), which extends 100 feet landward of the mean high water mark. The project also would not include any nonwater- dependent Facilities of Private Tenancy (FPT) on the ground level within 100 feet of the shoreline. As required by the c. 91 regulations, the project has been designed to provide at least one square foot of tidelands outside the footprint of any building for each square foot of tidelands occupied by a building containing nonwater-dependent uses. A significant portion of this open space will be located on over an acre of filled tidelands adjacent to Reserved Channel and will be designed to promote public use of the open space. The project will also comply with c.91 limits on building height, which in this case will generally limit the height of new buildings on filled tidelands to no more than 130 feet, and as low as 55 feet at a distance of 100 feet from the shoreline.

The DEIR should clearly show all buildings and uses within tidelands and quantify ground floor uses on filled tidelands. The DEIR should include an overlay of c. 91 regulatory zones, such as the WDUZ, 100-ft setback from the shoreline, and building height limits, on a plan of proposed conditions. It should provide detailed designs of the public waterfront open space and other publicly-accessible exterior areas and facilities. The DEIR should describe how interior Facilities of Public Accommodation and exterior public open space will be designed in coordination to provide meaningful and desirable use of the site by the public. It should detail any proposed activities in Reserved Channel and alterations or changes in use of existing power plant structures located within Reserved Channel C.7

The project will include a 1.15-acre waterfront park adjacent to the shoreline. According to the ENF, the open space will be designed to acknowledge the industrial nature of its setting with appropriate landscaping, programming, and pedestrian connections to other public areas and open spaces on the site. The DEIR should provide plans and renderings of the waterfront open space that will illustrate its proposed use and connections to other public spaces. It should specifically describe design elements intended to provide a buffer to truck traffic using the DFC. C.8

The project exceeds EIR thresholds as defined in 301 CMR 11.03 and is subject to the provisions of *An Act Relative to Licensing Requirements for Certain Tidelands* (2007 Mass. Acts ch. 168) and the Public Benefit Determination regulations (301 CMR 13.00). Consistent with Section 8 of the legislation, I must conduct a Public Benefits Review as part of the EIR review of

projects located on landlocked tidelands that entail a new use or modification of an existing use. The ENF noted that the project will provide new public open space, interior FPAs, including publicly-accessible uses within the restored turbine halls, and improved pedestrian and bicycle facilities. The DEIR should provide an updated analysis of the project's public benefits and how it will address the PBD regulatory criteria. I will issue a PBD within 30 days of the issuance of the final Certificate. C.9

Wetlands and Stormwater

Wetland resource areas at the site include 650 linear feet (lf) of Coastal Bank associated with the bulkhead along the shoreline, 3,500 sf of Coastal Beach, 37,500 sf of Land Under the Ocean (LUO) and 93,000 sf of LSCSF. The project will alter the entire area of LSCSF by raising the grade of the site and constructing the waterfront open space. The Proponent did not identify impacts to other wetland resource areas, but noted that potential changes to the shoreline to activate the waterfront for public use may impact the Coastal Bank and LUO. The DEIR should describe and quantify impacts to wetland resource areas and identify mitigation measures. C.10

The project will add 2.7 acres of impervious surface to the existing 9.8 acres of impervious area. According to the ENF, there is currently no stormwater management system on the site. Untreated runoff is conveyed to the Boston Water and Sewer drainage system and discharged into Boston Harbor. The ENF generally described the elements of a new stormwater management system that will be installed to meet the requirements of the Stormwater Management Standards (SMS) of the Wetlands Regulations (310 CMR 10.00) as a redevelopment project. It will include deep-sump, hooded catch basins, stormwater treatment structures, and infiltration systems to maintain pre-development peak discharge rates and volumes and remove 80 percent of the Total Suspended Solids (TSS). The project will include construction-period sedimentation and erosion control measures and the Proponent will prepare and implement a Long-Term Operation and Maintenance Plan to ensure that the system operates as intended. The DEIR should provide a more detailed description of the proposed stormwater management system, including supporting documentation, calculations and data to demonstrate that it will comply with the SMS and BWSC standards, plans showing the locations of system components and connections to the BWSC system, and ultimate discharge points. C.11

Traffic and Transportation

The ENF provided an overview of the project's trip generation and parking requirements. It identified a proposed study area for further analysis of the project's traffic impacts. It described existing and proposed transportation facilities in the vicinity of the project site, including public transportation services and pedestrian and bicycle facilities. The Proponent has committed to implementing TDM measures to reduce single-occupancy vehicle (SOV) trips to and from the site, but did not list any proposed measures.

The site is located within walking distance of five bus lines operated by the MBTA, including:

- Route 5: City Point to McCormack Housing, with a stop at the Andrew Station on the MBTA's Red Line subway;

- Route 7: City Point to South Station, which provides access to the Red and Silver Lines, MBTA Commuter Rail, and Amtrak rail service;
- Route 9: City Point to Copley Square, with a stop at the Broadway Red Line station and access to the Green and Orange Lines in Copley Square;
- Route 10: City Point to Copley Square with stops at the Andrew Station and Boston University Medical Center; and
- Route 11: City Point to Downtown Boston.

The project site is approximately one-half mile away from Silver Line service along Drydock Avenue and Black Falcon Avenue. The ENF noted that the South Boston Waterfront Sustainable Transportation Plan (SBWSTP), completed in 2015, found that Bus Routes 7 and 11 exceed seated capacity in the weekday morning and evening peak periods. According to the ENF, the SBWSTP identified several short-term and long-term enhancements to public transportation service in South Boston, but the ENF did not elaborate or indicate which of the improvements would add capacity that would affect transportation options to and from the site. The ENF noted that the sidewalk along Summer Street adjacent to the site is in good condition, and indicated that the project will widen the sidewalk along East 1st Street. The only bicycle accommodation is on East 1st Street east of the site. The City's 30-year Bike Network Plan envisions a cycle track on Summer Street and East 1st Street.

The project will add 20,370 unadjusted adt based on trip generation estimates derived from the Institute of Transportation Engineers (ITE) *Trip Generation Manual (9th Edition)* for Land Use Codes (LUC) 220 (Residential), 710 (Office), 310 (Hotel), and 820 (Retail). The unadjusted trip generation was adjusted to account for the use of alternative modes of transportation based on data prepared by the Boston Transportation Department (BTD), as well as internal trips between uses at the site and pass-by trips to the proposed on-site retail uses by vehicles already on the area roadway network. As adjusted, the project will generate 10,250 new vehicles trips, 4,864 trips by public transportation, and 8,780 trips by walking, biking or other means. The project will generate 661 vehicle trips during the morning peak hour and 768 vehicle trips during the evening peak hour.

The project will include 987 parking spaces. The projected parking supply was determined by calculating 0.6 spaces per 1,000 sf of office space, 0.4 spaces per residential unit, and 0.5 spaces per hotel room. The DEIR should discuss how the amount of parking proposed in the ENF compares to the parking need and supply for several comparable facilities. It should describe the number of spaces used throughout the day and peak hours for uses of parking spaces. The TIA should evaluate the potential for space sharing at the project site. C.12

The ENF identified a proposed study area, defined with preliminary input from BPDA and BTD, as the basis of further analysis of the project's transportation impacts. Existing and future traffic conditions will be analyzed at the following intersections:

- Summer Street at Drydock Avenue and Pappas Way;
- Summer Street at the DFC;
- Summer Street at L Street and East 1st Street; and
- L Street at East 2nd Street;
- L Street at East 3rd Street;

- L Street at East Broadway;
- East 1st Street at K Street;
- East 1st Street at M Street and the proposed site driveway;
- East 1st Street at West Street and Pappas Way;
- L Street at East 5th Street;
- L Street at East 8th Street; and
- L Street at Day Boulevard.

The DEIR should include a traffic study prepared consistent with the EEA/Massachusetts Department of Transportation (MassDOT) *Transportation Impact Assessment (TIA) Guidelines* issued in March 2014 and the City of Boston's requirements for traffic studies. It should provide the data and analysis requested in MassDOT's comment letter. The analysis should describe both existing and proposed roadway, pedestrian, and bicycle conditions; public transit capacity and infrastructure; roadway and intersection volumes; safety issues; and capacity analyses for the weekday morning and evening peak hours. The TIA should provide this analysis for Existing, No Build, Build, and Build with mitigation scenarios. The DEIR should clearly identify any mitigation measures that will be necessary to minimize impacts to the local road network, including improvements to bicycle and pedestrian facilities, public transportation services, and roadway improvements. The DEIR should evaluate the feasibility of providing or expanding safe pedestrian and bicycle facilities on area roadways and describe improvements that will be necessary to achieve the high pedestrian and bicycle mode shares anticipated in the ENF. It should summarize the SBWSTP and identify and conclusions or recommendations that are relevant to the project site or that may improve transportation options to the site, including water transportation. It should provide a trip distribution for the project, an analysis of vehicle crash data for study area intersections, and traffic signal warrants at any intersection where signalization may be proposed.

C.13

The DEIR should provide a detailed analysis of the project's impact to the MBTA bus network that serves the site. It should review the capacity of bus service to the site under existing conditions and upon completion of the project, taking into account other projects in the vicinity that are under construction or planned. The TIA should include a comprehensive review of measures to mitigate the project's impact on bus capacity and capacity of the local public transportation system in general. The Proponent should consult with MassDOT and the MBTA to identify the level of required transit improvements and a schedule for implementation. The effect of the mitigation measures identified through this process should be included in a comparison of future MBTA service operations under a No Build and Build with mitigation scenarios.

The DEIR should include a comprehensive TDM program that will provide incentives for using alternative transportation and discourage SOV trips. The TDM program should evaluate all feasible measures to reduce trip generation associated with the project. The TDM program should be based on specific measures that have been successful in reducing trip generation for similar projects. The Proponent should consult with MassDOT, MassRIDES and local Transportation Management Associations (TMA) to discuss specific measures that have been successful in reducing trip generation for similar projects in Boston. The DEIR should report on any existing shuttles that could serve the site or the feasibility of establishing new shuttle service. The TDM plan should seek to maximize the use of pedestrian and bicycle facilities, offer

incentives for using public transportation and local transportation and shuttle services, and encourage the use of low-emissions vehicles. The DEIR should review the potential for pedestrian and bicycle improvements to area roadways to promote non-vehicular access to the site. C.13

The DEIR should include an outline of a Transportation Monitoring Program designed to evaluate the transportation-related assumptions made in the DEIR, the adequacy of mitigation measures, and the effectiveness of the TDM program.

Climate Change

Executive Order 569: Establishing an Integrated Climate Change Strategy for the Commonwealth (EO 569) was issued on September 16, 2016. EO 569 recognizes the serious threat presented by climate change and directs agencies within the administration to develop and implement an integrated strategy that leverages state resources to combat climate change and prepare for its impacts. The Order seeks to ensure that Massachusetts will meet greenhouse gas emissions reduction limits established under the Global Warming Solution Act of 2008 (GWSA) and will work to prepare state government and cities and towns for the impacts of climate change.

The GHG Policy and requirements to analyze the effects of climate change through EIR review is an important part of this statewide strategy. These analyses advance proponents' understanding of a project's contribution and vulnerability to climate change. I strongly encourage the Proponent to consider complementary approaches – such as passive design for residential buildings, incorporation of renewables and inclusion of low impact development in site design - which can improve the project's resiliency, reduce GHG emissions and conserve and sustainably employ the natural resources of the Commonwealth. C.14

*Adaptation and Resiliency*

The ENF provided a review of the project's design measures for increasing its resiliency to extreme weather, extreme precipitation, and sea level rise caused by climate change. Future weather conditions are expected to include periods of drought, tropical rainfall patterns, and extreme heat and cold stretches, and increases in the number of days with extreme heat (over 90 degrees F and 100 degrees F). The project will include measures to withstand extreme heat events, such as landscaped open space to reduce heat island effects. The project will use native vegetation to minimize the need for irrigation. The project may reuse greywater and/or stormwater for irrigation.

The project will also include measures to add resiliency in response to flooding events caused by extreme precipitation and sea level rise. The ENF reviewed three reports that estimate the extent of sea level rise in the region: CZM's *Sea Level Rise: Understanding and Applying Trends and Future Scenarios for Analysis and Planning* (2013), the *MassDOT-FHWA Pilot Project Report: Climate Change and Extreme Weather Vulnerability Assessments and Adaptation Options for the Central Artery* (2015), and *Climate Change and Sea Level Rise Projections for Boston* (2016), prepared by the Boston Research Advisory Group (BRAG) for the City of Boston. According to the ENF, these studies generally predict that the elevation of the 100-year flood under future sea levels will be approximately 14.5 ft NAVD 88 to 16 ft

NAVD 88 at the end of this century (2070 to 2100) under high $CO_2$ emissions scenarios. The project will set the first-floor elevation at approximately 15 ft NAVD 88, which is three feet above the existing 100-year flood elevation. The project will include the following design measures to increase resiliency:

- The potential use of movable and permanent flood barriers at garage entrances;
- Elevating critical electrical system components and emergency generators;
- High-performance Heating, Ventilation and Air Conditioning systems that function efficiently under projected future conditions;
- Operable windows in the residential buildings;
- On-site energy generation, including a combined heat and power (CHP) system and solar photovoltaic systems;
- Retaining stormwater from the 1-inch precipitation event;
- Stormwater infrastructure designed for short-duration, high-intensity precipitation events;
- Landscaping with native, drought-resistant plants; and
- Installation of backflow preventers on connections to the sanitary sewer system.

In the DEIR, the Proponent should review any additional design features that may provide resiliency and support adaptation under future climate scenarios. At a minimum, the Proponent should consider adopting measures such as high albedo roofing material, water-tight conduits, and pervious pavement. The DEIR should provide additional analysis on the reuse of non-potable water for irrigation. C.15

*Sustainable Design*

Article 37 of the Boston Zoning Code requires that the project be certifiable by the U.S. Green Building Council's Leadership in Energy and Environmental Design program. The ENF included a scorecard rating sheet evaluating the residential and hotel buildings according to the LEEDv4 for New Construction (BD + C) standards and a scorecard evaluating the office buildings according to the LEEDv4 for Core & Shell. At present, the project will meet the lowest LEED certification level. I encourage the Proponent to strive for certification at a higher level and note that adopting additional building energy efficiency measures, as discussed in more detail below, would contribute considerably toward that goal. The DEIR should include a full evaluation of sustainable design elements for the buildings and exterior site areas, including measures identified in the LEED rating system. C.16

*Greenhouse Gas (GHG) Emissions*

This project is subject to review under the May 5, 2010 MEPA GHG Policy. The Policy requires Proponents to quantify carbon dioxide ($CO_2$) emissions and identify measures to avoid, minimize or mitigate such emissions. The analysis should quantify the direct and indirect $CO_2$ emissions of the project's energy use (stationary sources) and transportation-related emissions (mobile sources). Direct emissions include on-site stationary sources, which typically emit GHGs by burning fossil fuel for heat, hot water, steam and other processes. Indirect emissions result from the consumption of energy, such as electricity, that is generated off-site by burning of C.17

fossil fuels, and from emissions from vehicles used by employees, vendors, customers and others. C.17

*Stationary Sources*

The City of Boston has adopted the Massachusetts Stretch Energy Code (SC). Therefore, the project will be required to meet the applicable version of the Stretch Code in effect at the time of construction. The Stretch Code increases the energy efficiency code requirements for new construction (both residential and commercial) and for major residential renovations or additions in municipalities that adopt it. The current SC requires a reduction in energy use of 10 percent compared to that achieved by complying with the baseline energy provisions of the State Building Code.

The ENF provided a preliminary analysis of the project's stationary-source GHG emissions and reviewed potential mitigation measures, such as energy-efficient HVAC systems and on-site energy generation. The project will incorporate the following energy conservation measures:

- A high-efficiency condenser water plant that exceeds the base energy code;
- High-efficiency water-source heat pumps and water-cooled rooftop units;
- Low lighting power density (LPD);
- Ventilation air heat recovery;
- Condensing hot water boilers and water heaters; and
- Building commissioning to ensure that energy-related equipment has been correctly installed.

Compared to a base design case that meets Building Code energy requirements, these measures are expected to achieve energy savings of 15.4 percent, resulting in a reduction of GHG emissions of 10.7 percent (7,818 tons per year (tpy) compared to 8,700 tpy under the baseline design case). According to the ENF, rooftop solar PV systems and CHP systems will be further evaluated as the design of the buildings progresses.

The DEIR should include a full analysis consistent with the EEA GHG Policy. It should calculate and compare GHG emissions from: 1) a Base Case corresponding to the current Massachusetts Building Code and 2) a Preferred Alternative that achieves greater reductions in energy use and GHG emissions than required by the Building Code. The GHG analysis should clearly demonstrate consistency with the objectives of MEPA review, one of which is to document the means by which Damage to the Environment can be avoided, minimized and mitigated to the maximum extent feasible. The Proponent should identify the model used to analyze GHG emissions, clearly state modeling assumptions, explicitly note which GHG reduction measures have been modeled, and identify whether certain building design or operational GHG reduction measures will be mandated by the Proponent to future occupants or merely encouraged for adoption and implementation. The DEIR should include the modeling printout for each alternative and emission tables that compare base case emissions in tons per year (tpy) with the Preferred Alternative showing the anticipated reduction in tpy and percentage by emissions source (both direct and indirect). Other tables and graphs may also be included to convey the GHG emissions and potential reductions associated with various mitigation measures C.18

as necessary. The DEIR should provide the information and formatted tables requested in DOER's comment letter.

The project is comprised primarily of residential buildings, which are well-suited to Passive design strategies that would significantly increase energy efficiency, minimize GHG emissions, and reduce utility costs for residents. A passive design residential building that was recently completed at 512 East 2nd Street in South Boston is expected to use 95 percent less energy for cooling and heating than a conventional building.[1] As noted by DOER, the use of passive design alone would reduce GHG emissions by over 40 percent. The DEIR should analyze an alternative project design that incorporates Passive design in the residential buildings. The Proponent should consult with staff from DOER and MEPA prior to submitting the DEIR.

The DEIR should present an evaluation of mitigation measures identified in the GHG Policy Appendix. In particular, the feasibility of each of the mitigation measures outlined below should be assessed for each of the major project elements, and if feasible, GHG emissions reduction potential associated with major mitigation elements should be evaluated to assess the relative benefits of each measure. The DEIR should explain, in reasonable detail, why certain measures, which could provide significant GHG reductions, were not selected – either because it is not applicable to the project or is considered technically or financially infeasible. The DEIR should assess the feasibility of the following mitigation measures:

- Minimize energy use through building orientation and evaluate its impacts on energy usage, including solar gain, day-lighting and viability of solar photovoltaic (PV) systems; C.18
- Use of high-albedo roofing materials;
- Install high-efficiency HVAC systems and adequate numbers of thermal zones to support temperature controls;
- Reduce energy use through peak shaving or load shifting strategies;
- Maximize interior day-lighting through floor-plates, increased building perimeter and use of skylights, clerestories and light wells;
- Incorporate window glazing to balance and optimize daylighting, heat loss and solar heat gain performance;
- Incorporate roof and wall insulation to minimize heat loss and minimize uncontrolled infiltration through the building envelope;
- Incorporate lighting motion sensors, climate control and building energy management systems;
- Install energy efficient LED lighting, both exterior and interior;
- Evaluate additional measures to reduce project plug loads, including the use of more efficient equipment (such as Energy Star), consider energy consumption as a factor in the selection of special equipment, and consider power management techniques;
- Develop a tenant manual to encourage energy and water conservation, recycling, and use of Energy Star rated appliances to reduce plug loads; and
- Consider the development of a "green lease" program whereby tenants agree to pay the landlord recovery costs for energy efficiency improvements based on predicted cost savings to the tenant.

[1] According to the website for the building, http://www.distillerynorth.com

According to DOER, the extensive fenestration of the office buildings exceeds Building Code thresholds and negates energy-efficiency gains of the proposed HVAC system. The DEIR should include an analysis of wall/fenestration scenarios that exceed minimum Building Code specifications.

The DEIR should analyze the potential for on-site energy generation by rooftop solar PV and CHP systems and document the expected energy savings and reduction in GHG emissions from each generating technology. The Proponent should consider the use of one or more CHP systems for this project. Beyond providing efficient power for lighting and heating, CHP can also and produce off-grid power in the event of a black-out as a climate change resiliency measure. I encourage the Proponent to consult with DOER regarding this analysis to ensure that the analysis accurately reflects the benefits of CHP.

The solar feasibility analysis should consider solar PV for both a first-party and a third-party ownership structure. The analysis should:

- Estimate available roof area (excluding areas dedicated for mechanical equipment) or ground space for solar panel installation;
- State the assumed panel efficiency;
- Estimate electrical output of the potential system; and
- Estimate annual GHG reductions due to the use of renewable energy versus electricity or natural gas.

C.18

The analysis should include a narrative and data to support the Proponent's adoption (or dismissal) of solar PV systems as a feasible measure to avoid, minimize or mitigate project-related GHG emissions and Damage to the Environment. For those projects that choose not to implement the use of solar in conjunction with the project, the analysis should include:

- A commitment to construct the project as "solar-ready". At a minimum, this commitment should include design of a structure capable of supporting solar-related infrastructure. Such a commitment may also include provision of interconnection and inverter equipment, or other design features to facilitate future solar installations.
- Completion of cost analysis to determine the overall financial feasibility of installation of solar, including potential payback periods for first-party and third-party ownership systems.
- Discussion of potential environmental constraints (shading, presence of wetlands, etc.) limiting the application of solar on-site.

In addition, I encourage the Proponent to consider how solar may be incorporated into the open space design and surface parking. In particular, it could be incorporated in a way compatible with the goal that the open space acknowledge the industrial history and nature of the site while providing renewable energy and educational opportunities. I encourage the Proponent to consider design options that will allow for cost-effective integration of efficiency or renewable energy measures in the future when such measures may become more financially or technically feasible. The DEIR should include a review of available financial incentives offered by utility companies to help implement energy efficiency measures that would reduce GHG emissions. These incentives may be performance-based and tied to power and fuel avoided compared to a

building designed to Building Code requirements. Incentives may also be available to offset design charrette and energy modeling costs. For gas, more information is available on National Grid's website and in National Grid's New Construction Guide.[2] For electricity, more information can be obtained by contacting newconstructionMA@eversource.com. The GHG analysis should report on financial incentives that may be available from utility companies to help offset the cost of energy efficiency measures of this project. C.18

*Mobile sources*

The GHG analysis should include an evaluation of potential GHG emissions from mobile emissions sources. The DEIR should follow the guidance provided in the Policy for *Indirect Emissions from Transportation* to determine mobile emissions for Existing Conditions, Build Conditions, and Build Conditions with Mitigation. The Proponent should thoroughly explore means to improve traffic operations and minimize overall single occupancy vehicle trips. Improvements in traffic operations that minimize idling time can minimize overall project-related mobile source emissions. The DEIR should also review measures to promote the use of low-emissions vehicles, including installing EV charging stations and providing designated parking spaces for these vehicles. The Build with Mitigation model should incorporate roadway improvements, TDM measures, and any other transportation mitigation to be implemented by the Proponent. C.19

*Mitigation*

The DEIR should include a commitment to provide a self-certification to the MEPA Office at the completion of the project. It should be signed by an appropriate professional (e.g. engineer, architect, transportation planner, general contractor) indicating that all of the GHG mitigation measures, or equivalent measures that are designed to collectively achieve identified reductions in stationary source GHG emission and transportation-related measures, have been incorporated into the project. C.20

Hazardous Waste

The ENF documented seven releases of oil and/or hazardous materials regulated under M.G.L. chapter 21E, the Massachusetts Contingency Plan (MCP). The releases have been assigned the following MassDEP Release Tracking Numbers (RTN):

- RTN 3-12817: Sulfuric acid;
- RTN 3-13007: Fuel oil containing Total Petroleum Hydrocarbon (TPH), Extractable Petroleum Hydrocarbon (EPH), volatile organic compounds (VOC), and polycyclic aromatic hydrocarbons (PAH);
- RTN 3-14575: Sulfuric acid;

[1] National Grid Commercial and Industrial Construction Services: https://www.nationalgridus.com/Trade/EE-Programs-Solutions/CI-New-Construction-Services?gclid=Cj0KEQjwrte4BRD-oYi3y5_AhZ4BEiQAzIFxn_VdWabqesqI52YlID4qJ0nC6a4rTuojTUh33NDqAeoaAmeb8P8HAQ

New Construction Guide: https://www.nationalgridus.com/media/trade/NewConstruction_Guide_Digital_Update.pdf

- RTN 3-17596: Petroleum with EPH and Volatile Petroleum Hydrocarbons (VPH);
- RTN 3-22165: Lubricating oil;
- RTN 3-26342: Sulfuric acid; and
- RTN 3-28038: Weathered oil stains containing EPH and polychlorinated biphenyls (PCB).

According to the ENF, all of the releases have been addressed in accordance with the MCP. Remediation of one of the releases of fuel oil included the adoption of an Activity and Use Limitation (AUL) restriction that allows industrial and commercial uses, but prohibits residential uses, playgrounds, and similar uses on part of the project site. A modification to the AUL to allow a currently prohibited use would require a determination of No Significant Risk (NSR) of harm to human health. According to MassDEP, additional remediation of the affected area will be required to achieve a condition of NSR. If capping the area of contaminated soil is proposed to achieve an NSR, at least three feet of clean soil should be placed over the contaminated area in unpaved areas, or one foot of clean soil in areas to be paved. Contaminated soil left in place under the cap must be separated from the clean material by a geotextile or other marker, and an AUL would be required to identify the maintenance requirements of the cap. Construction activities involving excavating or removing contaminated soil or groundwater must be conducted in accordance with the MCP, and would require additional sampling, analysis, and mitigation measures, such as dust control, that must be documented and submitted to MassDEP. MassDEP also identified a release associated with a fuel tank (RTN-4519) that was located near the project site's northwest property line. An AUL prohibiting residential and recreational use was placed on the land area affected by the release. The DEIR should identify the location and extent of the release and the area subject to the AUL and describe if any part of the project site or proposed uses are affected.

I note the concerns of the community about potential exposure to contaminated soils at the site. The DEIR should describe a proposed remediation strategy to achieve an NSR condition at the site. It should identify whether the existing AUL will be modified and describe any remaining use conditions or requirements that may be applicable. The DEIR should include a draft Soils Management Plan or at a minimum generally describe how excavation of contaminated soils at the site will be conducted to protect human health during the construction period. The DEIR should describe how material will be stored on-site, the process for determining the extent of contamination and disposal options, and measures to ensure the safe transfer of material to disposal sites. As noted by MassDEP, indoor air quality in buildings constructed over contaminated sites may be compromised by chemical or petroleum vapors. The DEIR should include an evaluation of contaminant concentrations, assess the potential for indoor air impacts, and identify mitigation measures. C.21

Water and Wastewater

The project will generate 299,900 gpd of wastewater and consume 329,890 gpd of drinking water. Wastewater from the site will be directed to existing Boston Water and Sewer Commission (BWSC) sewer mains in East 1st Street and Summer Street. According to the Massachusetts Water Resources Authority (MWRA), the sewer mains are connected to a combined sewer that eventually discharges into BWSC's Boston Main Interceptor (BMI). The BMI conveys flow to the MWRA's Deer Island treatment plant via the Columbus Park

headworks. In large storms, the system may result in combined sewer overflow (CSO) discharges into Reserved Channel and Fort Point Channel. The project will be required to mitigate its contribution of flow into the BWSC sanitary system. MassDEP regulations at 314 CMR 12.04(2)(d) specify that communities with combined sewer overflows (CSOs), such as Boston, must require projects generating 15,000 gpd or more of new wastewater flow to remove four gallons of infiltration and inflow (I/I) for each gallon of wastewater. The DEIR should include a commitment to I/I removal and identify any mitigation projects or monetary contribution by the Proponent. The Proponent should consult with BWSC to identify appropriate I/I mitigation for this project. As noted by the MWRA, groundwater discharges into the sanitary system are prohibited. The DEIR should indicate whether the project will require a discharge permit from the MWRA's Toxic Reduction and Control (TRAC) Department. C.22

The ENF tabulated wastewater generation for each building (Table 8-1). The DEIR should include a revised table that includes water use and, if necessary, updated wastewater generation for each building, including estimates of peak and continuous maximum water demand for each proposed use and for landscape irrigation and air conditioning make-up water. The DEIR should include information and plans describing the existing and proposed water and wastewater systems on site and in the BWSC system. The DEIR should analyze flow pressure and/or existing capacity of the BWSC water and sewer system that serve the site. The DEIR should describe the location and size of infrastructure, connections to the BWSC water and sewer systems, and the path and ultimate disposal of wastewater from the site. The DEIR should identify and describe water conservation measures that will be incorporated into design and operations. At a minimum, the DEIR should review the feasibility of installing low-flow fixtures and using rainwater or gray water for irrigation and other purposes. C.23

Historic Resources

According to the ENF, the Massachusetts Historical Commission (MHC) has included the site in the Inventory of Historic and Archaeological Assets of the Commonwealth (BOS.12943) and determined that the entire site is eligible for listing on the National Register of Historic Places. The ENF described the long history of power generation at the site. The power plant was among the earliest facilities of its kind and was at the forefront of advances in generating technology. Among the most notable buildings at the site are the three turbine halls to be restored and reused as part of the project for public uses such as retails markets and cultural activities. The project includes large openings in the building walls to encourage pedestrian flow and connections to exterior plazas. In addition, the project includes the removal a portion of Turbine Hall 2 to construct an internal street across the site and a portion of Turbine 3 adjacent to East 1st Street to expand the sidewalk through the building.

The DEIR should include the additional information requested by MHC to assist in evaluating the effects of the project on historic resources. The DEIR should include photographs of the interior of the buildings keyed to a site plan, information on the structural and historic integrity of the buildings, and greater detail about the proposed reuse and modification to the turbine halls. As suggested by the Boston Preservation Alliance, the DEIR should describe the 1898 masonry building and evaluate its potential for reuse or preservation. C.24

Air Quality

In accordance with the State Implementation Plan (SIP) for ozone attainment, the proponent must conduct an indirect source review analysis. This analysis should be conducted in accordance with MassDEP *Guidelines for Performing Mesoscale Analysis of Indirect Sources.* The Proponent should consult with MassDEP for guidance and for confirmation of the appropriate study areas. The purpose of the analysis is to determine whether and to what extent the project will increase the amount of volatile organic compounds (VOC) and nitrogen oxides ($NO_x$) emitted in the project area and to determine consistency with the SIP. The analysis should model emissions under No Build and Build conditions. If VOC emissions are greater than the No Build scenario, the proponent must provide measures to mitigate this impact, including a TDM Program. C.25

Solid Waste

The DEIR should characterize the solid waste expected to be generated by the project. In 2014, Massachusetts banned the disposal of commercial organic wastes by businesses and institutions that generate a ton or more of organic materials per week. Business subject to the ban must use composting, conversion (such as anaerobic digestion), recycling or reuse of organic waste. The DEIR should indicate whether any proposed uses may be subject to the waste ban and how it may dispose of its organic waste.

The DEIR should describe measures to reduce and recycle organic and other wastes through waste diversion and recycling programs. As noted by MassDEP, incorporating the design, infrastructure, and contractual components of the project's solid waste facilities at this stage will help ensure the success of future waste reduction and recycling efforts. The Proponent should refer to MassDEP's comment letter for additional information and links to web sites providing technical assistance. C.26

Construction Period

The DEIR should provide drafts of the Construction Management Plan (CMP) and Transportation Access Plan Agreement (TAPA). It should identify the schedule for construction of various elements and phases. It should identify construction-period impacts and mitigation relative to noise, air quality, water quality, and traffic, including pedestrians, bicyclists and transit riders. The DEIR should document any contaminated soil or groundwater regulated under the Massachusetts Contingency Plan (MCP) and describe remediation and mitigation measures if necessary. The DEIR should confirm that the project will require its construction contractors to use Ultra Low Sulfur Diesel fuel, and discuss the use of after-engine emissions controls, such as oxidation catalysts or diesel particulate filters. More information regarding construction-period diesel emission mitigation may be found on MassDEP's web site at http://www.mass.gov/dep/air/diesel/conretro.pdf. C.27

The DEIR should provide more information regarding the project's generation, handling, recycling, and disposal of construction and demolition debris (C&D) and identify measures to reduce solid waste generated by the project. I strongly encourage the Proponent to commit to C&D recycling activities as a sustainable measure for the project. Demolition of any structures must comply with the MassDEP Asbestos Regulations (310 CMR 7.15) that became effective on

June 20, 2014. These regulations require a pre-demolition and post-abatement surveys and inspections by a licensed asbestos monitor. The Proponent should consult the MassDEP comment letter with regard to regulatory requirements and potential mitigation measures for the removal, handling, and disposal of asbestos containing material (ACM) and other demolition debris during the construction period. The Proponent is reminded that any contaminated material encountered during construction must be managed in accordance with the MCP and with prior notification to MassDEP. C.27

The DEIR should describe potential construction period dewatering requirements, discuss how dewatering will be conducted in a manner consistent with MWRA, MassDEP and/or BWSC regulations/guidelines, and identify any necessary permits. The draft CMP should include appropriate erosion and sedimentation control BMPs. I encourage the Proponent to adopt erosion and sedimentation controls consistent with a Stormwater Pollution Prevention Plan prepared in accordance with the NPDES Construction General Permit requirements.

Mitigation and Draft Section 61 Findings

The DEIR should include a separate chapter summarizing proposed mitigation measures. This chapter should also include draft Section 61 Findings for each permit to be issued by State Agencies. The DEIR should contain clear commitments to implement these mitigation measures, estimate the individual costs of each proposed measure, identify the parties responsible for implementation, and a schedule for implementation. The DEIR should clearly indicate which mitigation measures will be constructed or implemented based upon project phasing, either tying mitigation commitments to overall project square footage/phase or environmental impact thresholds, to ensure that measures are in place to mitigate the anticipated impact associated with each development phase. C.28

Responses to Comments

The DEIR should contain a copy of this Certificate and a copy of each comment letter received. In order to ensure that the issues raised by commenters are addressed, the DEIR should include direct responses to comments to the extent that they are within MEPA jurisdiction. This directive is not intended to, and shall not be construed to, enlarge the Scope of the DEIR beyond what has been expressly identified in this certificate. C.29

Circulation

The Proponent should circulate the DEIR to those parties who commented on the ENF, to any State Agencies from which the Proponent will seek permits or approvals, and to any parties specified in section 11.16 of the MEPA regulations. Per 301 CMR 11.16(5), the Proponent may circulate copies of the EIR to commenters in CD-ROM format or by directing commenters to a project website address. However, the Proponent must make a reasonable number of hard copies available to accommodate those without convenient access to a computer and distribute these upon request on a first-come, first-served basis. The Proponent should send correspondence accompanying the CD-ROM or website address indicating that hard copies are available upon request, noting relevant comment deadlines, and appropriate addresses for submission of comments. The DEIR submitted to the MEPA office should include a digital copy of the C.30

complete document. A copy of the DEIR should be made available for review at the Boston Public Library (BPL) and the South Boston branch of the BPL.

C.30

July 14, 2017
Date

Matthew A. Beaton

Comments received:

| | |
|---|---|
| 06/232017 | Massachusetts Water Resources Authority (MWRA) |
| 06/30/2017 | Army Corps of Engineers (ACOE) |
| 06/30/2017 | Boston Water and Sewer Commission (BWSC) |
| 07/06/2017 | Massachusetts Office of Coastal Zone Management (CZM) |
| 07/06/2017 | Massachusetts Port Authority (Massport) |
| 07/06/2017 | Department of Energy Resources (DOER) |
| 07/07/2017 | Representative Stephen F. Lynch, 8th District |
| 07/07/2017 | Senator Linda Dorcena Forry, First Suffolk District |
| 07/07/2017 | Representative Nick Collins, 4th Suffolk District |
| 07/07/2017 | City Councilor Michael F. Flaherty |
| 07/07/2017 | South Boston Neighborhood Development Corporation (SBNDC) |
| 07/07/2017 | Massachusetts Department of Environmental Protection (MassDEP)/ Northeast Regional Office (NERO) |
| 07/07/2017 | Massachusetts Department of Environmental Protection (MassDEP)/Waterways Regulation Program (WRP) |
| 07/07/2017 | Boston Planning and Development Agency (BPDA) |
| 07/07/2017 | Conservation Law Foundation |
| 07/07/2017 | Boston Preservation Alliance |
| 07/07/2017 | Massachusetts Historical Commission (MHC) |
| 07/07/2017 | Boston Harbor Now |
| 07/07/2017 | Eileen Smith |
| 07/07/2017 | WalkBoston |
| 07/11/2017 | Massachusetts Department of Transportation (MassDOT) |

MAB/AJS/ajs

## Strysky, Alexander (EEA)

**From:** Helms, Joshua M CIV USARMY CENAE (US) <Joshua.M.Helms@usace.army.mil>
**Sent:** Friday, June 30, 2017 10:30 AM
**To:** Strysky, Alexander (EEA); Flaherty, Erin (EEA)
**Cc:** Newman, Barbara H CIV CENAE CENAD (US)
**Subject:** L Street Station Redevelopment - NAE-2017-01614

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THE COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS
OFFICE OF COASTAL ZONE MANAGEMENT
251 Causeway Street, Suite 800, Boston, MA 02114-2136
(617) 626-1200 FAX: (617) 626-1240

**MEMORANDUM**

TO: Matthew A. Beaton, Secretary, EEA
ATTN: Alex Strysky, MEPA Unit
FROM: Bruce Carlisle, Director, CZM
DATE: July 6, 2017
RE: EEA-15692, L Street Station Redevelopment, Boston

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The Massachusetts Office of Coastal Zone Management (CZM) has completed its review of the above-referenced Environmental Notification Form (ENF), noticed in the *Environmental Monitor* dated May 24, 2017. According to the ENF, the project exceeds the threshold for a mandatory Environmental Impact Report (EIR) for a new non-water dependent use occupying one or more acres of tidelands, traffic generation, proposed parking spaces, and the demolition of the exterior part of any historic structure. CZM recommends that the proponent address the issues identified below in the EIR.

**Project Description**

With this ENF filing, HRP 776 Summer Street, LLC proposes to redevelop the 15 acre former Edison power plant site, locally known as L Street Station, into a 2.1 million square foot mixed-use development comprised of office, hotel, residential, and commercial uses with supporting underground parking, public open space, and internal roadways. As currently proposed, the development will be arranged around two new internal roadways supporting seven new buildings while maintaining the historic turbine hall. The project is located at the intersection of Summer and East First Streets along the south side of the Reserved Channel within the South Boston Designated Port Area (DPA). Massport's Dedicated Freight Corridor (scheduled for completion in summer 2017) forms the parcel boundary along the Reserved Channel. The project is located on filled tidelands and proposes impacts to Land Subject to Coastal Storm Flowage (LSCSF).

**Project Comments**

*Coastal Resiliency*

The ENF indicates that a portion of the project site lies within the 100-year floodplain (elevation 18.45 Boston City Base (BCB)). The proposed project will be elevated such that the finish floor will be located at 21.5 BCB. The ENF states that by elevating the finish floor elevation by three feet, the project is accounting for future increases in the intensity and frequency of storm events as well as for projected increases in sea level rise. The EIR should provide plan view and cross section plans which show the exiting topography, proposed fill, underground parking, and proposed finish floor with respect to the FEMA Base Flood Elevation in NAVD88 and BCB datum. 2.1

The ENF also states that the Massachusetts Wetlands Protection Act (WPA) does not prescribe performance standards for LSCSF. However, the proponent should evaluate how potential alterations to LSCSF will affect the ability of the floodplain to provide storm damage prevention and flood control interests of the WPA. The EIR should assess how the proposed development may 2.2

impact the flow of floodwater across the project site and contribute to potential flooding on adjacent properties and roadways. 2.2

*Designated Port Area*

As previously noted, the project site is located within the South Boston DPA. DPAs are areas of local, state, and regional significance which support and promote current and future water dependent industrial uses. Water dependent industrial uses share the need for a waterway and associated waterfront which has been developed to facilitate the transfer of goods from ship to shore, upland area which is conducive to industrial facilities and operations, and access to land-based transportation and utilities. To support these areas of maritime commerce, development within DPA's are subject to use requirements as specified in MassDEP's Chapter 91 Waterways regulations. Although the ENF acknowledges the location of the project within the South Boston DPA, the ENF does not evaluate a redevelopment program which would comply with the Chapter 91 standards for DPAs. In the EIR, the proponent should fully evaluate a DPA-compliant project alternative. 2.3

Since the filing of the ENF, the proponent has filed a request with CZM for the review of the boundary of the South Boston DPA. The boundary review process will proceed according to the Designation of DPA Regulations at 301 CMR 25.00.

**Federal Consistency**

The proposed project may be subject to CZM federal consistency review. For further information on this process, please contact, Robert Boeri, Project Review Coordinator, at 617-626-1050 or visit the CZM web site at www.state.ma.us/czm/fcr.htm.

BKC/bw/lbe

cc: Rich McGuiness, Chris Busch, Erikk Hokenson, BPDA
Mia Goldwasser, City of Boston Environment Department
Ben Lynch, MassDEP
Andrew Hargens, Stewart Dalzell, Massport

**Massachusetts Port Authority**
One Harborside Drive, Suite 200S
East Boston, MA 02128-2090
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www.massport.com

July 6, 2017

Matthew A. Beaton, Secretary
Executive Office of Energy and Environmental Affairs
Attn: Alex Strysky EEA 15692
100 Cambridge Street
Boston, MA 02114

**Subject: L Street Station -776 Summer Street (EEA #15692) ENF Comments**

Dear Secretary Beaton:

On behalf of the Massachusetts Port Authority (Massport), we are pleased to have the opportunity to review and provide comments on the *Environmental Notification Form* filed by HRP 776 Summer Street LLC (the Proponent) to commence joint review of the proposed L Street Station redevelopment at 776 Summer Street in South Boston under both MEPA and the City of Boston's Article 80B process. As outlined in the ENF/EPNF, this project proposes to build a total of 2.1 million sf on the 15 acre site, including 1.4 million sf of residential development (±1,500 units), 987 structured parking spaces hotel, retail and office space.

As a major landowner in the South Boston Waterfront, and the owner and operator of the Conley Container Terminal which abuts the 776 Summer Street property, Massport appreciates the opportunity to comment on this filing and to provide context on the critical port operations that occupy 2 sides of the site. We recognize the unique urban and economic redevelopment opportunity this project represents and the community's strong interest in replacing the former power plant and remediating this site. Massport's primary interest is ensuring the long-term viability of the Conley terminal and The Port of Boston's over 7,000 jobs as this project moves ahead.

**Proposed Project's Context on the Port of Boston**

Conley Container Terminal, which is located immediately adjacent to the project site, and maritime uses in the Port generally have a significant regional economic impact; over 1,600 businesses throughout New England rely on Conley to import and export raw materials and finished products. It is a critical link in both the region's supply chain and the overall economy.

Container activity at Conley processed a record high mark of over 250,000 TEUs (Twenty Foot Equivalent Units, a standard industry measurement of throughput) in FY2017, coming off back to back record volume in both FY15 and FY16. In conjunction with the Commonwealth and the federal government, Massport is now embarking on a comprehensive Conley Terminal modernization and harbor dredging project to accommodate the new, larger post-Panamax ships that are already beginning to call on Boston following expansion of the Panama Canal. In addition to the Boston Harbor dredging project, Massport has been particularly focused on improving and expanding Conley's landside terminal and transportation facilities to increase terminal capacity and efficiency necessary to remain

competitive as a regional port. Critical among these projects are the Butler Dedicated Freight Corridor (DFC) which is scheduled to open in 2017, improvements to Berths 11/12, and creation of a new deepwater berth, Berth 10, to allow Conley to receive the larger container vessels now servicing the East Coast. A key motivation for Massport's construction of the DFC was to move Conley truck traffic off East First Street and away from the adjacent residential neighborhoods.

The landside improvements will also include the purchase of three new ship-to-shore cranes to be located between the current cranes and the proposed project site, and the expansion of the Conley container yard on the former Coastal Oil site, which Massport invested in cleaning up. Also, although not in the immediate terminal plans, Massport is preserving a 5-acre site immediately adjacent to the 776 Summer Street site for future maritime industrial use to support Conley operations. These projects, and others not detailed in this letter, are all part of the large scale investment in Conley Terminal that collectively represent an investment in the Port of over $850 million by Massport, the Commonwealth, and the Federal government to continue to support this regional economic asset, while also minimizing its impact on existing residential neighbors. These projects are illustrated on the attached map.

The 776 Summer Street project site is also immediately across the Reserved Channel from the Raymond L. Flynn CruisePort Boston at Black Falcon Terminal. The terminal hosts a robust and growing cruise ship industry each season from April to November. This year, the CruisePort will set a record with more than 150 ships visiting and docking in close proximity to 776 Summer Street, another example of the level of maritime activity that occurs in this area of the Port of Boston.

Several of Massport's improvements listed above, particularly the DFC and upcoming Berth 10 work, will move essential Conley operations west, away from Logan airspace restrictions, and closer to the 776 Summer Street site. When it opens in the fall of 2017, the DFC will carry approximately 900 container trucks a day past the project site.

It will be critically important to evaluate the 776 Summer Street redevelopment in the context of these existing and planned maritime activities. Conley Terminal operates 24/7. Container ships regularly call Conley Terminal on nights and weekends, leading to active unloading activities throughout the facility outside of typical work hours.

In light of Massport's work to protect and grow these Maritime assets, we are pleased to provide the following specific comments on the ENF:

***Buffering Conley Terminal Operations***. Due to the 24/7 nature of activity at Conley Container Terminal and on the DFC, Massport believes that this development must be designed to minimize conflicts between the site and the adjacent industrial port. The allocation of land uses should be designed to buffer and protect Conley operations from potential development that is incompatible with adjacent maritime industrial uses. Massport understands that there is strong interest in accommodating residential units on the site. Particularly given the close proximity to certain 24/7 Conley Terminal activities, a thoughtful review of specific residential proposals in the context of an overall plan will need to be assessed. In particular, we recommend the following:

- Residential uses should be limited to portions of the site that do not abut the Butler Dedicated Freight Corridor or adjacent industrial uses. We concur with the current proposal to buffer the port by avoiding residential uses on blocks D, G, and H. We also have concerns that any residential units in Block F, particularly along the property line, could be too close to the industrial activities at Conley.
- Condominium ownership should be restricted to interior blocks and along East First Street.
- Massport's standard Residential Use Restriction Language, which describes the adjacent freight corridor and active industrial uses, should be included in all legal documentation signed for any residential units

3.1

- Construction of any residential units should be designed to meet noise standards (not to exceed 45 dBA day-night average interior sound level).
- Additionally, we recommend minimizing active lower level commercial use on the ground floors of office and hotel blocks fronting on the Butler Dedicated Freight Corridor, which will likely generate noise and vibrations from the more than 900 truck trips per day that may be incompatible with commercial activities.

3.1

***Limit Public Access near Secure Zones and Terminal Operations.*** Once opened and under Massport Police surveillance, the DFC will be a restricted access roadway, providing critical freight access between Conley Terminal and nearby truck routes such as Summer Street, Massport Haul Road, and the South Boston Bypass Road. The proponent has the right to construct and use a single driveway connecting to the DFC into the project site for delivery and service access to the site only; this connection is shown on plans included in the ENF. It is imperative that this connection remains gated to maintain the security of the DFC and that it is used only for service purposes.

3.2

***Limit Transportation Impacts.*** Mixed use development of the L Street Station site will increase multi-modal traffic and bring 10,250 new vehicle trips in the East First Street/Summer Street neighborhood and the surrounding community. The ENF form on page 3 lists 8,780 vehicle trips. However, we understand from the ENF's data tables that this is the number of new bicycle and pedestrian trips, not vehicle trips. We understand that this development intends to create a grid of streets on the parcel and to provide above ground on-site parking on several parcels. As part of the continued environmental review process, Massport will look forward to reviewing a more detailed analysis of the project's projected traffic impacts and operating characteristics to ensure they will not negatively impact Conley operations. In particular, we will be seeking to maintain the safe, efficient, and timely operations of the new signalized intersection at the DFC and Summer Street. It is imperative that freight movement on Summer Street is not adversely impacted by the additional vehicle trips generated by the project.

3.3

***Open Space and Waterfront Access.*** The ENF describes a concept for a highly programmed active waterfront open space along the northern edge of the site. Due to the need to maintain security of the DFC, Massport requests that waterfront open space be designed with landscaped buffer to provide separation from the DFC in all locations. Public recreation plans should be evaluated for their compatibility with the noise, light, and truck traffic of the active port. Additionally, Massport is soon to open the 4.5-acre Thomas Butler Memorial Park along East First Street to the east of the 776 Summer Street site, which will buffer the community from Conley Terminal noise and will include many amenities for the local community. We support the developers' plans to continue the spine of public access along East First Street through the development site to the intersection of East First Street and Summer Street and would support additional connections leading from the interior of the site to the park.

3.4

**Building Heights**. In coordination with the Federal Aviation Administration (FAA), Massport has prepared and widely circulated the *Logan Airspace Map* that defines the critical airspace around Boston Logan International Airport to protect the flight corridors in and out of the Airport (see attached map). Created by Massport, with input from airlines, pilots, city officials, and the FAA, it helps guide developers and regulatory authorities to safely build to maximum structure heights without compromising air travel safety. The map aids developers in their planning and assists the FAA in its review of individual projects to determine if they present a potential hazard to air navigation.

As noted above, the ENF describes an increase in the maximum building heights surrounding the L Street Station site. The project building heights presented in the ENF are based on Boston Zoning Code rather than an elevation of the tallest building structure compared to elevation above mean sea level (AMSL – NAVD88). Accordingly, additional information on the proposed building heights using the *Logan Airspace Map* baseline is needed to determine if the Project is consistent with the Airspace Map. We are pleased to hear that the project will involve removal of the two

stacks that have historically penetrated Logan's protected airspace and that all site buildings will remain below the critical FAA surfaces, thereby removing an obstruction to Logan Airspace.

Massport recommends that the Proponent coordinate closely with FAA and Massport during the remainder of the design process to ensure that individual building heights remain consistent with the *Logan Airspace Map* and also early in the construction phase, which is particularly important to minimize the extent and duration of impacts of the crane(s) on the airspace. The Proponent will be required to submit multiple Form 7460s to the FAA, one for each permanent building and a separate filing for construction cranes. 3.5

Thank you again for your consideration of our comments. We look forward to continued collaboration as the L Street Station proceeds. Please feel free to contact me at (617) 428-2815 or at lwieland@massport.com if you wish to discuss any of our comments.

Sincerely,

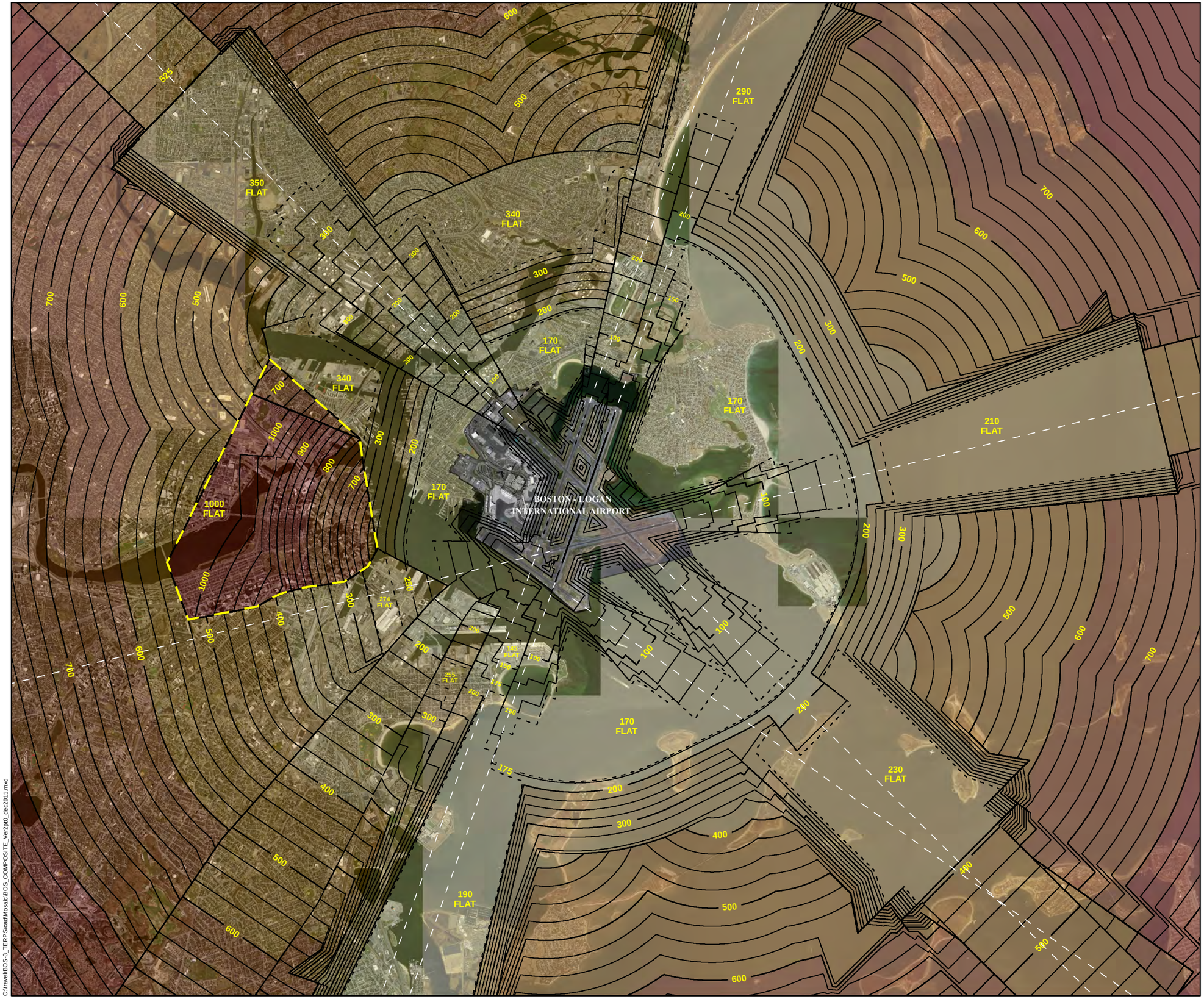
**Massachusetts Port Authority**

Lisa Wieland
Port Director

CC: T. Glynn, J. Doolin, G. Carr, A. Hargens, S. Dalzell, H. Morrison, L. Gilmore, F. Leo, M. Gove/Massport
B. Golden/Boston Planning & Development Agency
D. Koh/Office of Mayor Martin Walsh
R. Cox/Redgate Capital Partners

Enclosures: Logan Airspace Map
Conley Terminal Master Plan

# Boston – Logan International Airport
# Composite of Critical Airspace Surfaces




## Legend

### Surface Elevations (MSL)

- 801' to 1,000'
- 601' to 800'
- 401' to 600'
- 201' to 400'
- up to 200'
- Downtown Zone Area

Dashed lines identify transition from "Flat" to "Sloping" surface.

Contour Interval = 25 FT

Notes:

1. This Composite Map is intended for informational and conceptual planning purposes only and does not represent actual survey data nor should it be used in the development of a FAA Form 7460. Massport does not certify the accuracy, information or title to the properties contained in this plan nor make any warranties of any kind, express or implied, in fact or by law, with respect to boundaries, easements, restrictions, claims, overlaps, or other encumbrances affecting such properties.

2. This Composite Map does not replace the FAA's 7460 review process. Consistency with the surfaces shown on this map does not ensure that the proposal will be acceptable to the FAA and air carriers. Massport reserves the right to re-assess, review and seek modifications to projects that may be consistent with this Composite Map but that through the FAA 7460 process are found to have unexpected impacts to Boston Logan's safety or efficiency.

3. Surface elevations are referenced in feet Above Mean Sea Level (AMSL - NAVD88)

**COMPOSITE MAP PARAMETERS**

| SURFACE TYPES | RUNWAYS |
|---|---|
| CIRCLE-TO-LAND | ALL RUNWAYS (EXCEPT 14) |
| ICAO/AC ONE ENGINE INOP. | 4R, 4L, 9, 14, 15R, 22L, 22R, 27, 33L |
| IFR STND DEPARTURE | 4R, 9, 14, 15R, 22L^, 22R^, 27^, 33L |
| IFR NON-STND DEPARTURE | 4L |
| ILS APPROACH | 4R, 15R, 22L, 27, 33L |
| ILS MISSED APPROACH | 4R*, 15R, 22L, 27, 33L*^^ |
| LOCALIZER APPROACH** | 4R, 15R, 22L, 27, 33L |
| LNAV APPROACH** | 4R, 15R, 22L, 27, 32, 33L |
| LNAV MISSED APPROACH | 4R, 15R, 22L, 27, 32, 33L |
| PART 77 - STANDARD | EAST OF 4R/22L |
| PART 77 - VFR ONLY | WEST OF 4R/22L (N. OF DOWNTOWN) |
| VISIBILITY (CIRCLING) | ALL RUNWAYS (EXCEPT 14) |
| VISIBILITY (STRAIGHT-IN) | 4R, 15R, 22L, 27, 32, 33L |
| VNAV APPROACH | 4R, 15R, 27, 33L |
| VNAV MISSED APPROACH | 4R, 15R, 27, 33L |

^ INCLUDES TRANSITION FROM PREVIOUS CRITERIA
* CAT 1 AND CAT 3
^^ CAT 3 SHIFTED 200'NW
** ACCOUNTS FOR 7:1 DRIFT DOWN

N W E S

massport

**VERSION 2.0** **December 2011**

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**Massachusetts Port Authority**
*Real Estate & Asset Management*
*April 2017*

0′ 500′ 1000′ 2000′

# Conley Terminal Master Plan

## (2018-2023 Implementation)

*South Boston*

Charles D. Baker, Governor
Karyn E. Polito, Lieutenant Governor
Stephanie Pollack, MassDOT Secretary & CEO

massDOT
Massachusetts Department of Transportation

July 11, 2017

Matthew Beaton, Secretary
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston, MA 02114-2150

RE: Boston: L Street Station Redevelopment – ENF
(EEA #15692)

ATTN: MEPA Unit
Alex Strysky

Dear Secretary Beaton:

On behalf of the Massachusetts Department of Transportation, I am submitting comments regarding the proposed L Street Station Redevelopment project in Boston, as prepared by the Office of Transportation Planning. If you have any questions regarding these comments, please contact J. Lionel Lucien, P.E., Manager of the Public/Private Development Unit, at (857) 368-8862.

Sincerely,

David J. Mohler
Executive Director
Office of Transportation Planning

DJM/jll

Ten Park Plaza, Suite 4150, Boston, MA 02116
Tel: 857-368-4636, TTY: 857-368-0655
www.mass.gov/massdot

cc: Jonathan Gulliver, Acting Administrator, Highway Division
Patricia Leavenworth, P.E., Chief Engineer, Highway Division
Walter Heller, P.E., District 6 Highway Director
Neil Boudreau, State Traffic Engineer
Boston Transportation Department
Boston Region Metropolitan Planning Organization
PPDU Files

Charles D. Baker, Governor
Karyn E. Polito, Lieutenant Governor
Stephanie Pollack, MassDOT Secretary & CEO

massDOT
Massachusetts Department of Transportation

TO: David J. Mohler, Executive Director
Office of Transportation Planning

FROM: J. Lionel Lucien, P.E, Manager
Public/Private Development Unit

DATE: July 11, 2017

RE: Boston: L Street Station Redevelopment – ENF
EEA # 15692

The Public/Private Development Unit has reviewed the Environmental Notification Form (ENF) for the L Street Station Redevelopment project in Boston. The development program involves a mixed-use project consisting of approximately 2.1 million square feet of retail, residential, office, hotel, and cultural space in several buildings. The proposed project would construct 1,588 residential apartments and condominiums, 68,077 square feet of retail space, 339,639 square feet of office space, a 150 room hotel and additional recreation space. The project would provide 987 parking spaces to serve the proposed uses.

The site currently contains several old buildings and infrastructure associated with the Boston Edison L Street Power Station. It comprises 15 acres of developed land along the Reserved Channel in South Boston located at 776 Summer Street, and is bounded on the west by Summer Street, on the south by East 1st Street, on the east by a land parcel owned by the Massachusetts Transportation Authority (MBTA), and on the north by the Reserved Channel and the Conley Dedicated Freight Corridor (DFC).

The project is categorically included for the preparation of an Environmental Impact Report (EIR) because it would generate in excess of 3,000 daily vehicle trips. The following scope of work for the transportation section of the required Draft EIR is recommended and described as follows:

Scope of Work

The DEIR should include a Transportation Impact Assessment (TIA) prepared in conformance with the current MassDOT/EOEEA *Transportation Impact Assessment Guidelines*. The study should include a comprehensive multimodal assessment of the transportation impacts of the project. The TIA should provide transit and capacity analyses, and evaluate bicycle and pedestrian facilities for the existing conditions, future No-Build conditions, and future Build conditions within the study area. The future Build conditions should include an analysis of operations both with and without any improvements suggested to mitigate project impacts. The study should propose an integrated multimodal mitigation package intended to improve vehicular traffic operations while supporting increased use of walking, bicycling, and transit by employees, patrons, and residents. Items listed below should be accounted for in preparing the TIA.

4.1

Ten Park Plaza, Suite 4150, Boston, MA 02116
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www.mass.gov/massdot

Trip Generation

Based on the information presented within the ENF, the Full-Build project would generate 20,370 unadjusted vehicle trips on an average weekday, including 1,576 vehicle trips during the AM peak hour and 2,015 vehicle trips during the PM peak hour. This estimate is based on the Institute of Transportation Engineers (ITE) Trip Generation Manual using trip generation rates for the appropriate land use codes. When adjusted for mode shares from the Boston Transportation Department Area 13, the project is expected to generate 10,250 net vehicle trips, 8,730 new pedestrian/bicycle trips, and 4,864 new transit trips on an average weekday. During the weekday AM peak hour, the project is estimated to generate 661vehicle trips (405 entering, 256 exiting), 605 pedestrian trips (240 entering, 365 exiting), and 354 transit trips (142 entering, 212 exiting). During the weekday PM peak hour, the project is expected to generate 768 vehicle trips (284 entering and 484 exiting), 761 pedestrian/bicycle trips (441 entering, 320 exiting) and 423 transit trips (250 entering, 173 exiting).

We generally concur with the mode shares used as they appear consistent with this section of Boston and the City of Boston Transportation guidelines.

Trip Distribution

The DEIR should provide a trip distribution for the project based on a gravity model or similar model that uses factors such as census data, origin-destination, travel time, and distance to determine trip characteristics for employees and residents of the project. The DEIR should provide all appropriate back up documentation to verify how the different percentages are calculated and assigned to the roadway network and the transit system. 4.2

Vehicle Crash Data

The DEIR should include a safety evaluation for all intersections within the study area. Specifically, the DEIR should conduct analysis for any study area intersections having crash rates higher than the State and/or District 6 average. The analysis should include a discussion of causality, suggestions for mitigation, and commitment to implementing this mitigation. 4.3

Traffic Operations

Capacity analyses should be conducted for the weekday AM and PM peak hours for both existing and future conditions. In addition, capacity analyses for Build with mitigation conditions should be provided for all intersections. The DEIR should provide illustrations depicting the peak hour 50$^{th}$ (average) and 95$^{th}$ percentile queue lengths for each lane group/turning movement at each study area intersection, for all analysis scenarios. The information contained in these illustrations should clearly demonstrate that the project would not result in any extended queues that would block vehicle movements to/from study area intersections. Appropriate mitigation should be identified at any locations where queue blockages occur. Color-coded illustrations should also be prepared depicting the level of service (LOS) for each lane group/turning movement for each case. 4.4

A traffic signal warrant study (TSWS) should be performed and the need documented for any locations where signalization is being proposed, including site driveway intersections with the public roadway system. A left-turn lane warrant analysis should be conducted and the need documented for any locations where the addition of such a lane is being proposed, including at site driveways. 4.4

Conceptual Plans

The DEIR should include sufficiently detailed conceptual plans (minimum of 80-scale) for proposed roadway improvements in order to verify the feasibility of constructing such improvements. These plans should clearly show proposed lane widths and offsets, layout lines and jurisdictions, and land uses adjacent to areas where improvements are proposed. 4.5

Transit

The project is located within walking distance to MBTA route numbers 5, 7, 9, 10, and 11. These routes provide connections to major MBTA transportation hubs such as South Station that provides access to the MBTA Commuter Rail, the Red Line, the Silver Line, and AMTRAK. The DEIR should contain an analysis of what additional demand will be generated by the project and document its impacts on these routes.

In January 2015, MassDOT in partnership with the Massachusetts Convention Center Authority, Massachusetts Port Authority, and the City of Boston completed a planning study (the South Boston Waterfront Sustainable Transportation Plan) that evaluates the transportation impacts of future growth and vitality in the South Boston Waterfront. The study is both a strategic plan—providing a blueprint for the transportation system improvements over a 20 year planning horizon—and an action plan defining more immediate/short-term strategies to address existing transportation and mobility issues, capacity constraints, transit, pedestrian and bicycle needs, and operational enhancements. The study conducted a comprehensive analysis of the capacity of bus routes servicing the project's area, and the findings of the study indicate that some of the bus routes are currently operating over capacity.

The DEIR should include a presentation of the impacts of the project to the MBTA bus network with a summary table for the anticipated demand in terms of MBTA Service Standards for bus volumes, capacity. The TIA also should include a comprehensive discussion of mitigation measures to address the L Street Station Redevelopment project's transit impacts on the transit system within the study area. Based on the DEIR transit analysis, the Proponent should consult with MassDOT and the MBTA to identify the level of transit improvements required along with a schedule of implementation to address future constrained capacity conditions of the transit system. These improvements could be of a capital and/or operational nature, and should be consistent with (and not preclude implementation of) those identified in the South Boston Waterfront Sustainable Transportation Plan. The EIR should present a summary of the transit analysis to demonstrate that the proposed improvements would maintain or improve MBTA Service Standards compared to future No-Build conditions. 4.6

Pedestrian Access

The project is expecting a high pedestrian mode share; therefore the Proponent should provide a mitigation package that ensures that walking and bicycling will be an attractive way to access the site. The DEIR should provide an inventory of existing sidewalks and crosswalks within the study area, and should address the quality and condition of those facilities. The DEIR should include a commitment to improvements in any areas that are structurally deficient or not meeting current codes for accessibility. Special attention should be given to linking the proposed development to adjacent complementary land uses and to transit facilities. 4.7

Any proposed mitigation within the state highway layout and all internal site circulation must be consistent with a Complete Streets design approach that provides adequate and safe accommodation for all roadway users, including pedestrians, bicyclists, and public transit riders. Complete Streets design guidelines are included in the MassDOT *Project Development and Design Guide*. Where these criteria cannot be met, the Proponent should provide justification, and should work with the MassDOT Highway Division to obtain a design waiver.

Bicycle Access

The ENF includes a map of the existing bicycle network within the vicinity of the project. The DEIR should include a detailed inventory of the bicycle network to include bikeway types, bikeway widths, and bicycle number and speeds. The Proponent should identify the likely travel routes for bicyclists within the study area. The degree to which these routes can safely support bicycle travel should also be examined. The DEIR should reevaluate these routes based on the origin-destination of potential employees and residents. Based on this analysis, the Proponent should consider the feasibility of expanding some of these existing routes or consider new routes to encourage bicycle travel in and around the site. Similarly for pedestrian access, the project should work closely with MassDOT and the City of Boston to provide a seamless connection between the existing and planned bicycle facilities in the study area. 4.8

Parking

According to the ENF, the project at full build would include the provision of a parking garage to accommodate up to 987 vehicles. The DEIR should clarify how the parking needs of the project were determined and explain the methodology used to determine the total parking required. The Institute of Transportation Engineers' *Parking Generation* generally provides a reasonable basis for comparison to parking requirements under local zoning, but this reference does not present parking rates for this type of mixed-use.

The DEIR should include a summary of parking need and supply for comparable facilities based on multiple data sources. It should also determine the number of parking spaces occupied at various times of the day and identify the periods of peak use. 4.9

Transportation Demand Management

The DEIR should include a comprehensive Travel Demand Management (TDM) program that would implement measures aimed at reducing site trip generation. The TDM program should further investigate measures that would maximize usage of existing and new pedestrian, bicycle, and transit facilities. Such measures may include subsidizing transit passes, limiting the available parking supply, providing on-site amenities and conveniences that would reduce the need for automobile travel, and providing seamless pedestrian access between the L Street Redevelopment project and nearby bus stops. In any mixed-use development, the range of TDM measures varies widely to meet the specific needs of each of the proposed land uses. 4.10

We urge the Proponent to meet with MassRIDES and A Better City Transportation Management Association to discuss TDM measures that have been successful in limiting single occupant vehicle trips at similar projects within the urban core of Boston. The Proponent should also promote ridesharing through NuRide, the Commonwealth's web-based trip planning and ridematching service that enables participants to earn rewards for taking "green" trips. The Proponent should provide information on the substance and outcomes of its consultations in the DEIR.

Transportation Monitoring Program

The Proponent will be required to conduct an annual traffic monitoring program for a period of five years, beginning six months after occupancy of the full-build project. It would include:

- Simultaneous automatic traffic recorder (ATR) counts at each garage entrance for a continuous 24-hour period on a typical weekday and Saturday;
- Travel survey of employees and patrons at the site (to be administered by the Transportation Coordinator); 4.11
- Weekday AM and PM peak hour turning movement counts (TMCs) and operations analysis at "mitigated" intersections, including those involving garage entrances; and
- An update on TDM effectiveness and transit ridership.

The goals of the monitoring program will be to evaluate the assumptions made in the Environmental Impact Report (EIR) and the adequacy of the mitigation measures, as well as to determine the effectiveness of the TDM program.

The Proponent should continue consultation with MassDOT PPDU, the MBTA, and the District 6 office during the preparation of the DEIR. If you have any questions regarding these comments, please contact me at (857) 368-8862.

COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF
ENERGY AND ENVIRONMENTAL AFFAIRS
**DEPARTMENT OF ENERGY RESOURCES**
100 CAMBRIDGE ST., SUITE 1020
BOSTON, MA 02114
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**Charles D. Baker**
Governor

**Karyn E. Polito**
Lt. Governor

**Matthew A. Beaton**
Secretary

**Judith F. Judson**
Commissioner

6 July 2017

Matthew Beaton, Secretary
Executive Office of Energy & Environmental Affairs
100 Cambridge Street
Boston, Massachusetts 02114
Attn: MEPA Unit

RE: L Street Station Redevelopment, Boston, Massachusetts, EEA #15692

Cc: Arah Schuur, Director of Energy Efficiency Programs, Department of Energy Resources
Judith Judson, Commissioner, Department of Energy Resources

Dear Secretary Beaton:

We've reviewed the Environmental Notification Form (ENF) for the above-referenced project. The purpose of this this letter is to identify emission reduction measures worthy of evaluation for future submissions, consistent with the objective of MEPA policy to avoid, mitigate, and reduce greenhouse gas emissions.

We are pleased to share that a potentially feasible pathway exists to improve GHG Mitigation Level[1] from currently-planned 3% to 55% by using the following strategies:

- Passive design for the multifamily portion of the development (which makes up a vast majority of the development);
- Roof-top solar PV;
- Eliminating efficiency tradeoffs caused by exceeding Building Code thresholds for fenestration.

Other measures, such as CHP for the hotel and solar thermal should also be investigated.

5.1

[1] GHG Mitigation Level is the percent GHG reduction beyond the reduction that would occur as a result of following local Building Code. A GHG Mitigation Level of 0% means no GHG mitigation is proposed.

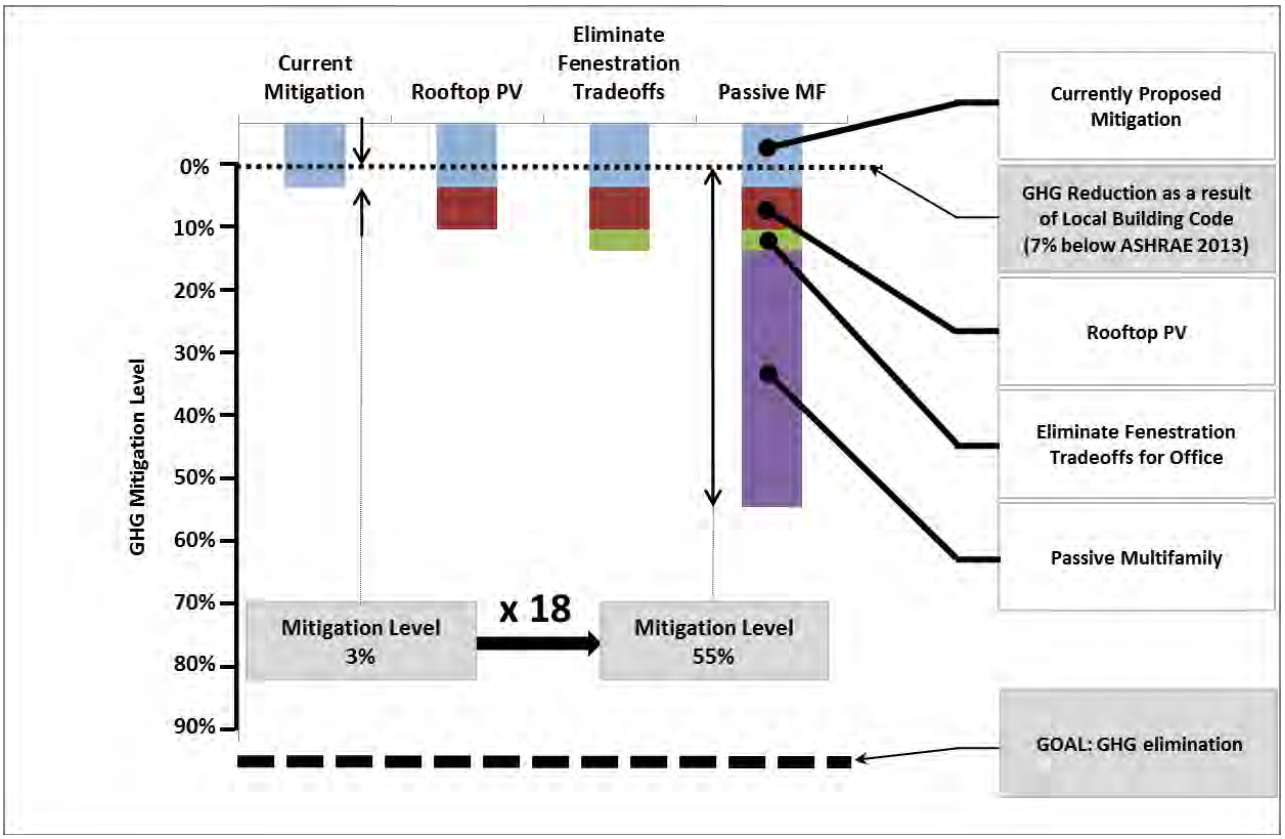
The above measures are supported by generous incentives, tax advantages, and grants. In addition, avoiding efficiency tradeoffs as a result exceeding code thresholds for fenestration can help optimize these incentives.

**Pathway from 3% to 55% Mitigation Level**

The currently-planned GHG Mitigation Level is 3%. (The currently planned mitigated development is 3% GHG reduction beyond the level of GHG reduction that would occur as a result of following local Building Code.) Mitigation Level can be improved to 55%, an 18-fold increase, as illustrated below:

5.2

- Solar PV on the roof would improve Mitigation Level to 10%.
- For the office, the benefits of planned HVAC mitigation are being traded-off as a result of exceeding code thresholds for fenestration. (Planned fenestration area for office is 150% larger than code thresholds.) We estimate that staying within code fenestration thresholds would improve Mitigation Level to 14%.
- Use of Passive design strategies for the multifamily would improve Mitigation Level to 55%.



**Savings and Incentives**

Significant savings and incentives are potentially available, as follows:

- With Passive design, annual gas and electric utility costs for the multifamily buildings could be reduced by $1.3M per year.
- Alternative Energy Credits associated with qualified air source heat pumps (or VRFs) in a passive multifamily would be worth approximately $0.8M (at $20/alternative energy credit). 5.3
- Rooftop solar PV (estimated 1,500 kW) would have a NPV of $1,200,000.
- Utility incentives are also potentially available, including incentives specifically for CHP and high performing (including passive) buildings.
- Massachusetts Clean Energy Center incentives are potentially available, for both heat pumps and VRFs.

**City of Boston Goals: Resilience & Housing Affordability**

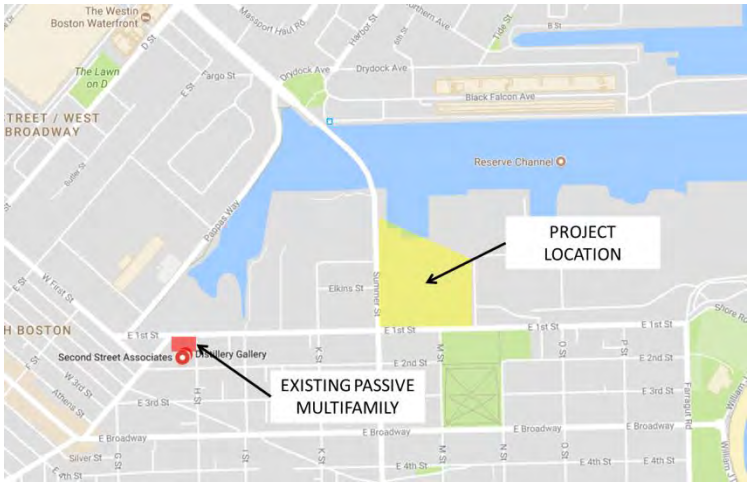
In addition to greenhouse gas mitigation, the above package of mitigation would also help advance the City of Boston's goals for resilience and housing affordability:

- Resilience: Passive buildings require near-negligible active and heating and cooling, and thus perform well during power outages and extreme weather. In fact, residents of an existing Passive multifamily a few blocks down the street from the proposed project (see below) report not having to turn on their heat through winter of 2016-2017. PV, CHP, and reduced glazing also contribute to resilience. 5.4
- Affordability: A Passive Multifamily would cost residents an average of $900/unit less for gas and electricity per year, an 85% reduction in utility costs.

**Passive Multifamily in South Boston**

The subject project is located in close proximity to a completed Passive multifamily, also located on East 1st Street in South Boston. (See locus on right.) Information is available here: http://www.distillerynorth.com/.

This project is completed and operating, with plans for additional expansion.




5.5

**Recommendations for Future Submissions**

Our recommendations for future submissions are as follows:

1. Future submissions should demonstrate that the project is taking all feasible measures to avoid, minimize and mitigate GHG emissions. The GHG Policy and supporting documentation is available at http://www.mass.gov/eea/agencies/mepa/greenhouse-gas-emissions-policy-and-protocol-generic.html.

2. Passive design should be thoroughly evaluated for the multifamily portion of the development. Passive design methods are available here: http://www.phius.org/home-page. Multifamily specific information is available here: http://multifamily.phius.org/. An extensive study on financial and feasibility of Passive residential towers is available here: http://www.fxfowle.com/projects/182/feasibility-study-to-implement-the-passivhaus-standard-on-tall-residential-buildings/. See right for examples of Passive multifamily projects, including both low rise and high rise examples.



Second and Delaware Project – Passive Low Rise
http://multifamily.phius.org/case-study/second-and-delaware



Mott Haven Project – Passive High Rise
https://ny.curbed.com/2016/4/29/11540744/nyc-largest-passive-house-mott-haven-241-affordable-apartments

3. When evaluating Passive cost feasibility (and cost evaluations, in general), we recommend netting additional envelope costs against reduced HVAC costs. The Second and Delaware project reportedly costs $4/sf less to construct than conventional construction.

4. In addition, we recommend further netting of costs against potential financial benefits derived from the following sources, which can also reduce first costs:

   - Utility performance-based incentives for energy efficiency improvements
   - Alternative energy credits (AECs) for renewable thermal production
   - Grants for various technologies from the Massachusetts Clean Energy Center

5. Having more fenestration than Building Code thresholds necessarily results in trading off other efficiency improvements, resulting in reduced GHG benefits, increased operating costs, and reduced resiliency than would otherwise occur. We recommend that fenestration for the office portion of the development be maintained to within building code thresholds (e.g. 40% window to wall ratio for the office portion, or as otherwise

5.6

specified on Table G3.1.1-1 for other building uses). Currently, planned fenestration for the office portion is 150% larger than these thresholds.

If the proponent chooses to continue to evaluate an option that exceeds these thresholds, we recommend submitting the following energy model scenario results:

- Code building with Code-threshold fenestration
- Code building, with planned fenestration
- Planned building with Code-threshold fenestration
- Planned building with planned fenestration

The above scenarios will help reveal the extent to which other efficiency measures are being traded-off by exceeding fenestration thresholds. 5.6

6. Evaluate lower-than-code lighting power densities.

7. Evaluate CHP for the hotel, including utility rebates and credits.

8. Evaluate solar thermal for hotel and multifamily water heating, including benefits of MCEC grants.

9. Evaluate heat pump water heating for multifamily, hotel, and office, including benefits of Mass Save rebates.

**Recommendations for Submission:**

In order to expedite the DOER review, we recommend the following accompany the submission: 5.7

A. A table similar to the example below should be included:

| **Measure/Area** | **Base Code 2013 90.1 App. G or 2015 IECC** | **Proposed** | **% Change** | **Comment** |
|---|---|---|---|---|
| Roof Assembly U-value (Btu/hr-Ft$^2$-f) | | | | |
| Bldg 1 | *code value* | *design value* | % | |
| Bldg 2 | *code value* | *design value* | % | |
| (Additional rows for each bldg.) | *code value* | *design value* | % | |
| Wall Assembly U-value (Btu/hr-Ft$^2$-f) | | | | |
| Bldg 1 | *code value* | *design value* | % | |
| Bldg 2 | *code value* | *design value* | % | |
| Area Window/Area Wall (%) | | | | |
| Bldg 1 | *code value* | *design value* | % | |
| Bldg 2 | *code value* | *design value* | % | |
| Window U-value (Btu/hr-Ft$^2$-f) | | | | |
| Bldg 1 | *code value* | *design value* | % | |
| Bldg 2 | *code value* | *design value* | % | |
| AC Efficiency (EER) | | | | |
| Bldg 1 | *code value* | *design value* | % | |

| | | | | |
|---|---|---|---|---|
| Bldg 2 | *code value* | *design value* | % | |
| ERV Effectiveness (%) | | | | |
| Bldg 1 | *code value* | *design value* | % | |
| Bldg 2 | *code value* | *design value* | % | |
| Boiler (% efficiency) | | | | |
| Bldg 1 | *code value* | *design value* | % | |
| Bldg 2 | *code value* | *design value* | % | |
| LPD (Watts/sq ft) | | | | |
| Bldg 1 | *code value* | *design value* | % | |
| Bldg 2 | *code value* | *design value* | % | |
| (continue to include service water, equipment, etc) | | | | |

B. A description of the proposed building envelope assembly: report both component R-values and whole assembly U-factor. Utilize the pre-calculated relationships between R-Value and U-factor contained in Appendix A in the code.

C. A description of the building energy simulation model and procedures utilized.

D. A detailed and complete table of modeling inputs showing the item and the input value for both the base and as-designed scenarios. The area of the building should be included.

E. The output of the model showing the monthly and annual energy consumption by major end use system.

F. Baseline (e.g. Code) energy use intensity and proposed mitigated building energy use intensity.

5.7

G. Project modeling files are to be submitted to the DOER with the submittal on a flash drive or may be transmitted via electronic file transfer to paul.ormond@massmail.state.ma.us.

H. Separate "side calcs" may be required for non-building energy consuming site improvements which are not included in the building energy modeling software (e.g. parking lot lighting).

I. Estimate area of roof potentially usable for solar development (e.g. 'Usable Roof Area" (URA)). Estimate resulting power production and associated GHG reduction if all this URA was utilized.

J. A description of the proposed project building usage and size, including a site plan and elevation views, should be included.

K. Provide a summary of discussions with MassSave.

L. We recommend cross-examining produced model results' total and individual end uses with representative, prototype buildings developed by Pacific Northwest National Labs/Department of Energy found here:

- https://www.energycodes.gov/sites/default/files/documents/BECP_901_2013_Progress_Indicator_0_0.pdf
- http://www.energycodes.gov/sites/default/files/documents/2013EndUseTables.zip
- https://www.energycodes.gov/commercial-energy-cost-savings-analysis

5.7

Sincerely,



Paul F. Ormond, P.E.
Energy Efficiency Engineer
Massachusetts Department of Energy Resources

Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection
Northeast Regional Office • 205B Lowell Street, Wilmington MA 01887 • 978-694-3200

Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Matthew A. Beaton
Secretary

Martin Suuberg
Commissioner

July 7, 2017

Matthew A. Beaton, Secretary
Executive Office of
Energy & Environmental Affairs
100 Cambridge Street
Boston MA, 02114

RE: Boston
L Street Station Redevelopment
776 Summer Street
EEA #15692

Attn: MEPA Unit

Dear Secretary Beaton:

The Massachusetts Department of Environmental Protection (MassDEP) has reviewed the Environmental Notification Form (ENF) submitted by the HRP 776 Summer Street, LLC, c/o Hilco Real Estate for the proposed construction of a mixed use project consisting of 2.1 million square feet of development on 15 acres along the Reserved Channel in South Boston. MassDEP provides the following comments.

**Wastewater**

The ENF indicates that the proposed project will generate an estimated 299,900 gallons per day (gpd) of new wastewater flow. MassDEP regulations at 314 CMR 12.04(2)(d) require sewer authorities with permitted combined sewer overflows, including the Boston Water & Sewer Commission (BWSC), to require removal of four gallons of infiltration and inflow (I/I) for each gallon of new wastewater flow generated for any new connection to their system where greater than 15,000 gallons per day of new wastewater flows will be generated. Accordingly the proponent should meet with staff from BWSC to ensure that this mitigation requirement is met. In addition, the proponent should also identify any deficiencies in the wastewater system serving the project site and confirm that the system has sufficient capacity to accept the flow. 6.1

This information is available in alternate format. Call Michelle Waters-Ekanem, Diversity Director, at 617-292-5751. TTY# MassRelay Service 1-800-439-2370
MassDEP Website: www.mass.gov/dep

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**Hazardous Waste/ MCP**

Several releases of fuel oil occurred in the vicinity of former Fuel Oil Tank Number 3, an above-ground 5.5 million gallon tank. On September 27, 2016, a Notice of Activity & Use Limitation (AUL) was recorded for RTN 3-4519 consistent with MassDEP Bureau of Waste Site Clean-up regulations at 310 CMR 40.0000, the Massachusetts Contingency Plan (MCP). The AUL applies to the area of the property formerly occupied by Fuel Oil Tank Number Three. The AUL may require MCP response actions during, and/or after, the L Street development project. The AUL obligations and conditions are described below.

The following AUL activities and uses are allowed within the AUL area:

1. Industrial and Commercial use;
2. Improvements, demolition, construction of buildings or infrastructure, or emergency utility work provided that soil management and health and safety plans are prepared prior to such activities;
3. Any development of a building or infrastructure that would disturb the Engineered Barrier, provided that the structure is designed and approved by a Licensed Site Professional (LSP);
4. Construction of new buildings provided that an LSP evaluates the potential for vapor intrusion from LNAPL, soil, and groundwater into indoor air in the proposed building. If the LSP evaluation indicates the potential for vapor intrusion, the proposed buildings shall be designed to mitigate the vapor intrusion pathway;
5. Any emergency utility work, provided that the any damage to the Engineered Barrier is repaired;
6. Activities and uses which are not identified in the Opinion as being inconsistent with maintaining a Condition of No Significant Risk.

The following AUL activities and uses are restricted within the AUL area:

1. Any activity or use that would compromise the integrity or functionality of the Engineered Barrier:
2. All excavations into or below the Engineered Barrier, unless reviewed and approved by a Licensed Site Professional;
3. Residence, school, day care center, park, playground, or other recreational area;
   Gardening or other agricultural uses for the cultivation of edible plants destined for human consumption

The activities and uses that are restricted by the AUL, such as residences, schools, daycares and recreational areas, can be implemented at the site if they are evaluated by an LSP and determined to pose No Significant Risk of harm to human health, based on a re-evaluation of the risk characterization and/or the completion of additional response actions necessary to achieve and maintain a condition of No Significant Risk for the new use(s). If activities currently restricted by the AUL are allowed at the site based on such an LSP evaluation, an amended AUL shall be recorded describing the change in the allowed activities within the AUL area. 6.2

Contaminated Soil and Groundwater:

The project proponent is advised that excavating, removing and/or disposing of contaminated soil, pumping of contaminated groundwater, or working in contaminated media must be done under the provisions of MGL c.21E (and, potentially, c.21C) and all other applicable federal, state, and local laws, regulations, and bylaws. If permits and approvals under these provisions are not obtained beforehand, considerable delays in the project can occur. The project proponent cannot manage contaminated media without prior submittal of appropriate plans to MassDEP, which describe the proposed contaminated soil and groundwater handling and disposal approach, and health and safety precautions. If contamination at the site is known or suspected, the appropriate tests should be conducted well in advance of the start of construction and professional environmental consulting services should be readily available to provide technical guidance to facilitate any necessary permits. If dewatering activities are to occur at a site with contaminated groundwater, or in proximity to contaminated groundwater where dewatering can draw in the contamination, a plan must be in place to properly manage the groundwater and ensure site conditions are not exacerbated by these activities. Dust and/or vapor monitoring and controls are often necessary for large-scale projects in contaminated areas. The need to conduct real-time air monitoring for contaminated dust and to implement dust suppression must be determined prior to excavation of soils, especially those contaminated with compounds such as metals and PCBs. An evaluation of contaminant concentrations in soil should be completed to determine the concentration of contaminated dust that could pose a risk to health of on-site workers and nearby human receptors. If this dust concentration, or action level, is reached during excavation, dust suppression should be implemented as needed, or earthwork should be halted. A Licensed Site Professional (LSP) must be employed or engaged to manage, supervise or actually perform the necessary response actions at the site. 6.3

Capping of Contaminated Soil:

If capping of contaminated soil is needed to achieve a level of No Significant Risk, MassDEP recommends the following capping design criteria. In unpaved areas, a minimum of three feet of clean soil should be placed over the contaminated soil. This protective layer of clean soil should be separated from the underlying contaminated soil by a geotextile or combination of materials, which will provide both a brightly colored visual marker and a permeable fabric to separate the clean soil from the contaminated soil. In paved areas, a minimum one-foot cap consisting of clean soil, road base and the pavement layer should be placed over the contaminated soil. Similar to unpaved areas, the contaminated soil should be separated from the clean soil or road base using a visual marker and geotextile. In such cases, an Activity and Use Limitation (AUL), prepared in accordance with 310 CMR 40.1012 would be necessary to identify the maintenance requirements of the cap. It should also be noted that a cap constructed as a Release Abatement Measure will not be considered a Permanent Solution until a Phase III completed in accordance with 310 CMR 40.0850 demonstrates the lack of a feasible alternative, as required by 310 CMR 40.0442(4). 6.4

Potential Indoor Air Impacts:

Parties constructing and/or renovating buildings in contaminated areas should consider whether chemical or petroleum vapors in subsurface soils and/or groundwater could impact the indoor air quality of the buildings. All relevant site data, such as contaminant concentrations in soil and groundwater, depth to groundwater, and soil gas concentrations should be evaluated to determine the potential for indoor air impacts to existing or proposed building structures. Particular attention should be paid to the vapor intrusion pathway for sites with elevated levels of chlorinated volatile organic compounds such as tetrachloroethylene (PCE) and trichloroethylene (TCE). MassDEP has additional information about the vapor intrusion pathway on its website at http://www.mass.gov/eea/agencies/massdep/cleanup/regulations/vapor-intrusion-and-indoor-air-contamination-waste-sites.html. 6.5

New Structures and Utilities:

Construction activities conducted at a disposal site shall not prevent or impede the implementation of likely assessment or remedial response actions at the site. Construction of structures at a contaminated site may be conducted as a Release Abatement Measure if assessment and remedial activities prescribed at 310 CMR 40.0442(3) are completed within and adjacent to the footprint of the proposed structure prior to or concurrent with the construction activities. Excavation of contaminated soils to construct clean utility corridors should be conducted for all new utility installations. 6.6

Activity and Use Limitations:

An Activity and Use Limitation (AUL) is a legal document that is recorded or registered at the appropriate Registry of Deeds and identifies site conditions that are the basis for maintaining a condition of No Significant Risk at a property where contamination remains after a cleanup. The AUL identifies permitted and allowable site uses and activities that may occur at a property while maintaining No Significant Risk. The AUL also identifies restricted uses and activities, which could result in the exposure of people at or near the disposal site to remaining contamination if such activities were to occur. The project proponent is advised that in cases where proposed activities would not be consistent with a level of No Significant Risk and/or an existing AUL, additional cleanup and the amendment or termination of the initial AUL and implementation of a revised AUL would be necessary before the proposed activities could occur. 6.7

**Recycling Issues**

MassDEP encourages the project proponent to make a significant commitment to C&D recycling activities as a sustainable measure for the project, consistent with comparable projects that have undergone MEPA reviews. In addition, the proponent is advised that demolition activities must comply with both Solid Waste and Air Pollution Control regulations, pursuant to M.G.L. Chapter 40, Section 54, which provides: 6.8

"Every city or town shall require, as a condition of issuing a building permit or license for the demolition, renovation, rehabilitation or other alteration of a building or structure, that the debris

resulting from such demolition, renovation, rehabilitation or alteration be disposed of in a properly licensed solid waste disposal facility, as defined by Section one hundred and fifty A of Chapter one hundred and eleven. Any such permit or license shall indicate the location of the facility at which the debris is to be disposed. If for any reason, the debris will not be disposed as indicated, the permittee or licensee shall notify the issuing authority as to the location where the debris will be disposed. The issuing authority shall amend the permit or license to so indicate."

For the purposes of implementing the requirements of M.G.L. Chapter 40, Section 54, MassDEP considers an asphalt, brick, and concrete (ABC) rubble processing or recycling facility, (pursuant to the provisions of Section (3) under 310 CMR 16.05, the Site Assignment regulations for solid waste management facilities), to be conditionally exempt from the site assignment requirements, if the ABC rubble at such facilities is separated from other solid waste materials at the point of generation. In accordance with 310 CMR 16.05(3), ABC can be crushed on-site with a 30-day notification to MassDEP. However, the asphalt is limited to weathered bituminous concrete, (no roofing asphalt), and the brick and concrete must be uncoated or not impregnated with materials such as roofing epoxy. If the brick and concrete are not clean, the material is defined as construction and demolition (C&D) waste and requires either a Beneficial Use Determination (BUD) or a Site Assignment and permit before it can be crushed.

Pursuant to the requirements of 310 CMR 7.02 of the Air Pollution Control regulations, if the ABC crushing activities are projected to result in the emission of one ton or more of particulate matter to the ambient air per year, and/or if the crushing equipment employs a diesel oil fired engine with an energy input capacity of three million or more British thermal units per hour for either mechanical or electrical power which will remain on-site for twelve or more months, then a plan application must be submitted to MassDEP for written approval prior to installation and operation of the crushing equipment.

Asbestos removal notification on permit form BWP AQ04 (ANF 001) and building demolition notification on permit form BWP AQ06 must be submitted to MassDEP at least 10 working days prior to initiating work. If any asbestos-containing materials will need to be abated through non-traditional abatement methods, the proponent must apply for and obtain approval from MassDEP, through Application BWP AQ36 - Application for Non-Traditional Asbestos Abatement Work Practice Approval. Except for vinyl asbestos tile (VAT) and asphaltic-asbestos felt and shingles, the disposal of asbestos containing materials within the Commonwealth must be at a facility specifically approved by MassDEP, (310 CMR 19.061). No asbestos containing material including VAT, and/or asphaltic-asbestos felts or shingles may be disposed at a facility operating as a recycling facility, (310 CMR 16.05). In addition, the demolition project contain asbestos, the project proponent is advised that asbestos and asbestos-containing waste material are a special waste as defined in the Solid Waste Management regulations, (310 CMR 19.061). The disposal of the asbestos containing materials outside the jurisdictional boundaries of the Commonwealth must comply with all the applicable laws and regulations of the state receiving the material.

The demolition activity also must conform to current Massachusetts Air Pollution Control regulations governing nuisance conditions at 310 CMR 7.01, 7.09 and 7.10. As such, the proponent should propose measures to prevent and minimize dust, noise, and odor nuisance conditions, which may occur during the demolition. Again, MassDEP must be notified in writing, at least 10 days in

advance of removing any asbestos, and at least 10 days prior to any demolition work. The removal of asbestos from the buildings must adhere to the special safeguards defined in the Air Pollution Control regulations, (310 CMR 7.15 (2)).

Waste Ban Regulation – 310 CMR 19.017

Section 310 CMR 19.017 *Waste Bans* of the Massachusetts Solid Waste regulations prohibit the disposal of certain wastes in Massachusetts. These wastes include, but are not limited to, recyclable paper (including cardboard). The Massachusetts Organics Waste Ban on the disposal of commercial organic wastes by businesses and institutions also is in effect. It prohibits the disposal of organic wastes from businesses and institutions that generate a ton or more of organic materials per week, which necessitates the composting, conversion (such as anaerobic digestion), recycling or reuse of organic the waste.

As the lead state agencies responsible for helping the Commonwealth achieve its waste diversion goals, MassDEP and EEA have strongly supported voluntary initiatives by the private sector to institutionalize source reduction and recycling into their operations. Adapting the design, infrastructure, and contractual requirements necessary to incorporate reduction, recycling and recycled products into existing large-scale developments has presented significant challenges to recycling proponents. Integrating those components into developments such as the Ashland Rail Transit Apartments at the planning and design stage enables the project's management and occupants to establish and maintain effective waste diversion programs. For example, facilities with minimal obstructions to trash receptacles and easy access to main recycling areas and trash chutes allow for implementation of recycling programs and have been proven to reduce cleaning costs by 20 percent to 50 percent. Other designs that provide sufficient space and electrical services will support consolidating and compacting recyclable material and truck access for recycling material collection.

By incorporating recycling and source reduction into the design, the proponent has the opportunity to join a national movement toward sustainable design. Sustainable design was endorsed in 1993 by the American Institute of Architects with the signing of its *Declaration of Interdependence for a Sustainable Future.* The project proponent may be aware of organizations that provide additional information and technical assistance, including Reuse Marketplace (http://www.reusemarketplace.org/), USEPA's WasteWise Program (www.epa.gov/wastewise/), and MassRecycle (http://www.massrecycle.org/). The listed organizations and programs are notable for offering valuable and effective waste reduction and recycling assistance, web-based resources, case studies, and tools for C&D projects.

The MassDEP Northeast Regional Office appreciates the opportunity to comment on this proposed project. Please contact Kevin.Brander@state.ma.us at (978) 694-3236 for further information on the wastewater issues. Please contact Jack.Miano@state.ma.us at (978) 694-3357 for further information on the waste site cleanup issues. If you have any general questions regarding these comments, please contact me at John.D.Viola@state.ma.us or at (978) 694-3304.

Sincerely,

This final document copy is being provided to you electronically by the Department of Environmental Protection. A signed copy of this document is on file at the DEP office listed on the letterhead.

John D. Viola
Deputy Regional Director

cc: Brona Simon, Massachusetts Historical Commission
Eric Worrall, Jack Miano, Kevin Brander, MassDEP-NERO

Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection
One Winter Street Boston, MA 02108 • 617-292-5500

Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Matthew A. Beaton
Secretary

Martin Suuberg
Commissioner

# Memorandum

**To:** Matthew Beaton, Secretary, EEA

**Att'n:** Alex Strysky, MEPA

**From:** Ben Lynch, MassDEP/Boston

**Re:** **Comments from the Chapter 91 Waterways Regulation Program — EEA #15692 - EENF - L Street Station Redevelopment, Filled Tidelands of Boston Harbor & Reserved Channel, Boston, Suffolk County.**

**Date:** July 7, 2017

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The Department of Environmental Protection Waterways Regulation Program ("Department" or "WRP") has reviewed the Expanded Environmental Notification Form ("EENF") submitted by HRP 776 Summer Street, LLC ("Proponent") on May 15, 2017 for the redevelopment of the former Edison L Street Power Station site. The EENF describes a project that will include residential, commercial office, hotel, and underground parking uses, as well as public open space and internal roadways. It will also repurpose and integrate an existing, historically significant turbine hall into the overall project. In total, the proposed project would be comprised of approximately seven new buildings and two renovated historic structures totaling 2.1 million square feet, approximately 987 structured parking spaces, two internal roadways, and 104,500-square feet of new, publicly accessible open space. The 15-acre project site is located at the intersection of East First Street and Summer Street in South Boston, situated within the South Boston Designated Port Area ("South Boston DPA"). The northern site boundary of the site is the Dedicated Freight Corridor ("DFC") which serves as the roadway exclusively reserved for trucking to and from the Massachusetts Port Authority ("Massport") Conley Terminal to the east.

**Water Dependency:**

The Department has determined that this project is a nonwater-dependent use project pursuant to 310 CMR 9.12(2)(f)(2), (3), (5), and (8).

**This information is available in alternate format. Contact Michelle Waters-Ekanem, Director of Diversity/Civil Rights at 617-292-5751.**
**TTY# MassRelay Service 1-800-439-2370**
MassDEP Website: www.mass.gov/dep

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**Chapter 91 Jurisdiction:**
Said project will require authorization through a Chapter 91 (c.91) Waterways License as the approximately four acres of project site is located on filled and flowed tidelands of Boston Harbor. Therefore, the project will be reviewed under the nonwater-dependent performance standards at 310 CMR 9.51 through 9.52.

**Chapter 91 Regulatory Analysis**:
Because the filled tidelands on the project site are within a DPA, only Water-Dependent Industrial and Supporting Uses are currently allowed within c.91 jurisdictional areas. Since the submission of the EENF, the Proponent has filed a request with the Massachusetts Office of Coastal Zone Management ("MassCZM") for a Boundary Review of the South Boston DPA, pursuant to 301 CMR 25.00. The EENF asserts that if the subject tidelands were not within the DPA, the project would be fully compliant with the relevant nonwater-dependent use and dimensional standards of 310 CMR 9.00. Until the Boundary Request has been fully evaluated by MassCZM, the project's compliance with the nonwater-dependent standards of 310 CMR 9.51–9.53 cannot be determined. In the EIR filing, the Proponent should evaluate a fully compliant project alternative in which the project site remains within the South Boston DPA. 7.1

Regardless of the findings of the Boundary Request, the Department recommends that the Proponent consult with MassCZM, and Massport as it determines appropriate water sheet activation facilities at the project shoreline in the Reserved Channel in order to meet the compliance standards of 310 CMR 9.52(1)(a).

**Coastal Resiliency:**
The EENF identifies that certain portions of the project site is located within a 100-year floodplain. In the EIR, the Proponent should provide more detailed analysis on how the project design will comply with the Engineering and Construction standards pursuant to 310 CMR 9.37(1)&(2). 7.2

**c.91 Application Status:**
Given the time frame that a project of this scope and size will likely require, the Department recommends that in the EIR, the Proponent describe how it plans to proceed with the c.91 authorization process, including whether it plans on requesting a Consolidated Written Determination for discrete elements of the overall project pursuant to 310 CMR 9.14(4). In the event that such an approach is considered, the Proponent should carefully evaluate and propose the timely delivery of related public benefits with each license application to ensure that the overall public benefits will exceed public detriment as each portion of the project is completed. 7.3

If you have any questions regarding the WRP's comments, please feel free to contact Ben Lynch at ben.lynch@state.ma.us or at (617) 292-5615.

# MASSACHUSETTS WATER RESOURCES AUTHORITY

Charlestown Navy Yard
100 First Avenue, Building 39
Boston, MA 02129

Frederick A. Laskey
Executive Director

Telephone: (617) 242-6000
Fax: (617) 788-4899
TTY: (617) 788-4971


June 23, 2017

Matthew A. Beaton, Secretary
Executive Office of Energy and Environmental Affairs
100 Cambridge St, Suite 900
Attn: MEPA Office, Alex Strysky
Boston, MA 02114

Subject: EOEEA #15692 – Expanded Environmental Notification Form
L Street Station Redevelopment, South Boston, MA

Dear Secretary Beaton:

The Massachusetts Water Resources Authority (MWRA) appreciates the opportunity to comment on the Environmental Notification Form (ENF) submitted by HRP 776 Summer Street (the "Proponent") for the L Street Station Redevelopment Project (the "Project") proposed for a 15-acre site of developed land along the Reserved Channel at 776 Summer Street in South Boston.

The key components of this 2.1 million SQ-FT development project include the cleanup and abatement of the Project Site and Power Plant buildings; reuse of portions of the existing power plant buildings for their historical and architectural significance; transformation of the site into a public waterfront destination with new dining and retail, as well as community arts and business use; and, the addition of 104,500 SQ-FT of new outdoor public space, landscaping, waterfront activation, open areas, and 1.15 acres of public amenities and accessible waterfront space.

The power plant is recognized as an architectural and engineering landmark; therefore, preserving and enhancing the public value of the Site's historic structures an equipment is a central theme of this project. The project will create an active pedestrian oriented area that will include five residential blocks, one hotel, commercial buildings, residential buildings, office space, and 987 structured parking spaces.

MWRA's comments focus on Stormwater and Wastewater issues emphasizing the need for Infiltration/Inflow (I/I) Removal and potential need for Discharge Permitting from the Toxic Reduction and Control (TRAC) Department.

**Stormwater and Wastewater**

The ENF reports that there is no evidence of stormwater treatment or infiltration systems on site. Stormwater appears to be collected on site and conveyed primarily to the existing Boston Water and Sewer Commission (BWSC) stormwater infrastructure in Summer Street, including a storm drain on East 1st Street constructed by BWSC a few years ago as part of the

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Reserved Channel Sewer Separation project. Stormwater flows are conveyed to CSO outfalls BOS078 and BOS079 for discharge to the Reserved Channel. A portion of the Project Site's stormwater runoff appears to discharge directly into the Reserved Channel either over land runoff or via private stormwater conveyance infrastructure on site.

According to the ENF, the Project will generate approximately 299,900 gallons per day (gpd) of new wastewater flow. The ENF reports that BWSC owns and maintains the sanitary sewer infrastructure serving the project site. According to BWSC record drawings, an 18-inch sewer main lies along Summer Street, and a 12-inch combined sewer main lies along East 1st Street. Both of these BWSC sewers connect to BWSC's 24-inch by 36-inch South Boston Interceptor (SBI) North Branch at the intersection of Summer and East 1st Streets. The 24-inch by 36-inch BWSC combined sewer connects to a 36-inch by 48-inch BWSC combined sewer at the intersection of East 1st Street and I street. The SBI North Branch carries wastewater and some stormwater eventually to BWSC's Boston Main Interceptor (BMI). The BMI conveys flows to MWRA's Columbus Park Headworks, which in turn directs flow to the Deer Island treatment plant. In large storms, combined wastewater and stormwater flow can exceed the hydraulic capacity of the BWSC system, contributing to combined sewer overflows (CSO) to Fort Point Channel at Outfall BOS073, and to Reserved Channel at outfalls BOS076, BOS078 and BOS079.

To ensure that the Project's wastewater flow does not increase system surcharging or CSO in wet weather, the Proponent should continue to work with BWSC to develop a plan for ensuring a 4:1 offset of the Project's wastewater flow as required by Massachusetts Department of Environmental Protection regulation. To comply, four gallons of stormwater and/or infiltration and inflow (I/I) should be removed from a hydraulically related sewer system(s) for every gallon of new wastewater flow. Increasing wastewater flow to the South Boston sewer systems without the state-required offset can compromise the sewer system and water quality benefits of MWRA's $910 million region-wide CSO control plan, including water quality improvement in Reserved Channel and Fort Point Channel. 8.1

**TRAC Discharge Permitting**

The MWRA prohibits the discharge of groundwater to the sanitary sewer system, pursuant to 360 C.M.R. 10.023(1) except in a combined sewer area when permitted by the Authority and the Boston Water Sewer Commission (BWSC). The Project site has access to a storm drain; therefore, the discharge of groundwater to the sanitary sewer system associated with the Project is prohibited. The Proponent will need to secure a USEPA-NPDES General Permit for Storm Water Discharges from its construction activities.

Once the hotel is completed and if the Owner/Operator intends to operate a laundry on the premises, a Sewer Use Discharge Permit will be required for the discharge of laundry effluent into the sanitary sewer system. For assistance in obtaining this permit, the Owner/Operator from the hotel should contact Mr. George Riley, Industrial Coordinator in the TRAC Department at (617) 305-5664. The Sewer Use Discharge Permit must be issued prior to the Owner/Operator discharging any wastewater from laundry operations into the MWRA sanitary sewer system.

If the Proponent intends to install gas/oil separator(s) in the structured garage planned for the site they must comply with 360 C.M.R. 10.016 and 360 C.M.R. 10.000, the regulations of the Board of State Examiners of Plumbers and Gas Fitters, 248 C.M.R. 2.00 (State Plumbing Code), and all other applicable laws. The installation of gas/oil separator(s) will require MWRA approval and may not be back filled until inspected and approved by the MWRA and the Local Plumbing Inspector. For assistance in arranging an inspection, the Proponent should contact Mr. Stephen Howard, Source Coordinator in the TRAC Department at (617) 305-5675.

Sincerely,

Marianne Connolly

Marianne Connolly
Senior Program Manager
Environmental Review and Compliance

cc: David Kubiak, E&C
Solomon Wondimu, E&C
Kattia Thomas, TRAC
Adam Horst, BWSC

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JUL 13 2017
MEPA

# The Commonwealth of Massachusetts

William Francis Galvin, Secretary of the Commonwealth
Massachusetts Historical Commission

July 7, 2017

Secretary Matthew A. Beaton
Executive Office of Energy & Environmental Affairs
100 Cambridge Street, Suite 900
Boston, MA 02114

Attn: Alex Strysky, MEPA Analyst – MEPA UNIT

RE: Boston Edison L Street Power Station Redevelopment, 776 Summer Street, Boston (South Boston), MA; MHC# RC.62038; **EEA# 15692**

Dear Secretary Beaton:

Staff of the Massachusetts Historical Commission (MHC) have reviewed the Environmental Notification Form (ENF) that was submitted for the proposed L Street Power Station Development. The staff of the MHC have the following comments.

The proposed project includes the demolition of portions of the Boston Edison L Street Power Station and the construction of a number of new buildings on the site.

A Project Notification Form (PNF) was received at the MHC on March 30, 2017, for the project referenced above. The PNF submitted was incomplete for the purpose of MHC's review (950 CMR 71.07). The MHC responded to the PNF in a letter dated May 5, 2017 and enclosed with this letter. To date, the information MHC requested has not been submitted.

The information provided in the ENF is inadequate. The MHC requests the following information be submitted in order to evaluate the potential effects of the work proposed on this property:

- Interior photographs of all sections of the building keyed to a site plan and labeled to match the names of the building areas labeled on the site plan.
- Information on the structural and historical integrity of the different sections of the complex.
- Clarification on the proposed rehabilitation of the turbine halls.

9.1

These comments are offered to assist in compliance with Section 106 of the National Historic Preservation Act of 1966 (36 CFR 800), M.G.L. Chapter 9, sections 26-27C (950 CMR 71.00), and MEPA (301 CMR 11). Please do not hesitate to contact Elizabeth Sherva of my staff if you have any questions.

Sincerely,

Brona Simon

Brona Simon
State Historic Preservation Officer
Executive Director
Massachusetts Historical Commission

Enclosure

xc (w/out enclosure): Ralph Cox, Redgate Capital Partners
Benjamin Spera, Hilco Redevelopment Partners
Elizabeth Grob, VHB
Jennifer McCarthy, US Army Corps of Engineers
Department of Environmental Protection – MassDEP Headquarters
Marianne Connolly, MWRA
Boston Landmarks Commission
Albert Rex, MacRostie Historic Advisors
Greg Galer, Boston Preservation Alliance
South Boston Historical Society

220 Morrissey Boulevard, Boston, Massachusetts 02125
(617) 727-8470 • Fax: (617) 727-5128
www.sec.state.ma.us/mhc

# The Commonwealth of Massachusetts

William Francis Galvin, Secretary of the Commonwealth
Massachusetts Historical Commission

May 5, 2017

Benjamin Spera
Hilco Redevelopment Partners
99 Summer Street, Suite 500
Boston, MA 02110

RE: Boston Edison L Street Power Station Redevelopment, 776 Summer Street, Boston (South Boston), MA; MHC# RC.62038

Dear Mr. Spera:

Thank you for submitting a Project Notification Form (PNF) for the project referenced above, which was received at this office on March 30, 2017. The staff of the Massachusetts Historical Commission (MHC) have reviewed the information submitted and have the following comments.

It is unclear from the information submitted if the project will require Federal licensing, permitting, or funding and will therefore be reviewed under Section 106 of the National Historic Preservation Act of 1966 (36 CFR 800). It is also unclear from the information submitted if the project will require State licensing, permitting, or funding and will therefore be reviewed under M.G.L. Chapter 9, sections 26-27C (950 CMR 71.00). Please be aware that Section 106 review can substitute for the state register review in the case that the project will require both reviews. The state register review cannot substitute for Section 106 review. The staff of the MHC recommends that initial planning phases of the project identify licensing, permitting, and funding sources to identify which regulations MHC review will occur.

The PNF is incomplete (950 CMR 71.07). MHC looks forward to receiving an Environmental Notification Form or revised PNF with information pertaining to licensing, permitting, or funding. The submission should include interior photographs of all sections of the building keyed to a site plan and labeled to match the names of the building areas labeled on the site plan. A future submission should also include information on the structural and historical integrity of the sections of the building with corresponding photographs.

These comments are offered to assist in compliance with Section 106 of the National Historic Preservation Act of 1966 (36 CFR 800), M.G.L. Chapter 9, sections 26-27C (950 CMR 71.00), and MEPA (301 CMR 11). Please do not hesitate to contact Elizabeth Sherva of my staff if you have any questions.

Sincerely,

Brona Simon

Brona Simon
State Historic Preservation Officer
Executive Director
Massachusetts Historical Commission

xc: Albert Rex, MacRostie Historic Advisors

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JUL 5 2017

MEPA

**Boston Water and Sewer Commission**

980 Harrison Avenue
Boston, MA 02119-2540
617-989-7000

June 30, 2017

Secretary Matthew A. Beaton
Executive Office of Energy and Environmental Affairs
Attention: MEPA Office
Alex Strysky, EEA No. 15692
100 Cambridge Street, Suite 900
Boston, MA 02114

and

Mr. Gary R. Uter
Project Manager
Boston Planning and Development Agency
One City Hall Square
Boston, MA 02201

Re: L Street Station
Environmental Notification Form /
Expanded Project Notification Form

Dear Secretary Beaton and Mr. Uter:

The Boston Water and Sewer Commission (Commission) has reviewed the Environmental Notification Form (ENF) and the Expanded Project Notification Form (EPNF) for the proposed redevelopment project located at 776 Summer Street in the South Boston neighborhood of Boston.

The proposed project is located on a 15-acre site bordered by the Reserve Channel, Summer Street and East First Street. The site was formerly occupied by Boston Edison's electric generating facility and has several buildings and support structures that were used for electric generation. The ENF/EPNF summarizes an alternative development scenario to the preferred scheme. The project proponent HRP 776 Summer Street, LLC's (HRP), proposed preferred alternative is to raze the existing structures with the exception of the Turbine Hall and construct a mixed use development over a ten year period. The project will include rehabilitation of the exiting Turbine Hall and construction of eight buildings totaling 2.1 million square feet (sf). The building heights will vary from 44 to 220 feet. The eight buildings will have approximately 339,639 sf. of office space, 68,077 sf. of retail space, 1,588 residential unit, a 150 room hotel and parking spaces for 987 vehicles. Site improvements include approximately 104,500 sf of outdoor public space.

For water service, the Commission owns and maintains a 12-inch water main in East First Street and a 12-inch water main in Summer Street. The water mains are part of the Commission's Southern Low Pressure Zone.

Sewer and drainage of the site is provided by a 12-inch sanitary sewer and an 18-inch storm drain in East First Street. Summer Street has an 30- inch by 24-inch combined sewer overflow pipe that increases to a 30-inch pipe and an 15-inch sanitary sewer that increases to an 18-inch pipe.

The ENF/EPNF states water demand for the proposed development is estimated to be 329,890 gallons per day (gpd) and wastewater generation is estimated to be 299,900 gpd.

The Commission has the following comments regarding the proposed project:

General

1. Prior to demolition of any buildings, all water, sewer and storm drain connections to the buildings must be cut and capped at the main pipe in accordance with the Commission's requirements. The proponent must then complete a Termination Verification Approval Form for a Demolition Permit, available from the Commission and submit the completed form to the City of Boston's Inspectional Services Department before a demolition permit will be issued. 10.1

2. All new or relocated water mains, sewers and storm drains must be designed and constructed at HRP's expense. They must be designed and constructed in conformance with the Commission's design standards, Water Distribution System and Sewer Use Regulations, and Requirements for Site Plans. To assure compliance with the Commission's requirements, the proponent must submit a site plan and a General Service Application to the Commission's Engineering Customer Service Department for review and approval when the design of the new water and wastewater systems and the proposed service connections to those systems are 50 percent complete. The site plan should include the locations of new, relocated and existing water mains, sewers and drains which serve the site, proposed service connections as well as water meter locations. 10.2

3. The Department of Environmental Protection (DEP), in cooperation with the Massachusetts Water Resources Authority and its member communities, is implementing a coordinated approach to flow control in the MWRA regional wastewater system, particularly the removal of extraneous clean water (e.g., infiltration/inflow (I/I)) in the system. In April of 2014, the Massachusetts DEP promulgated new regulations regarding wastewater. The Commission has a National Pollutant Discharge Elimination System (NPDES) Permit for its combined sewer overflows and is subject to these new regulations [314 CMR 12.00, section 12.04(2)(d)]. This section requires all new sewer 10.3

connections with design flows exceeding 15,000 gpd to mitigate the impacts of the development by removing four gallons of infiltration and inflow (I/I) for each new gallon of wastewater flow. In this regard, any new connection or expansion of an existing connection that exceeds 15,000 gallons per day of wastewater shall assist in the I/I reduction effort to ensure that the additional wastewater flows are offset by the removal of I/I. Currently, a minimum ratio of 4:1 for I/I removal to new wastewater flow added is used. The Commission supports the policy, and will require proponent to develop a consistent inflow reduction plan. The 4:1 requirement should be addressed at least 90 days prior to activation of water service and will be based on the estimated sewage generation provided on the project site plan. 10.3

4. The design of the project should comply with the City of Boston's Complete Streets Initiative, which requires incorporation of "green infrastructure" into street designs. Green infrastructure includes greenscapes, such as trees, shrubs, grasses and other landscape plantings, as well as rain gardens and vegetative swales, infiltration basins, and paving materials and permeable surfaces. The proponent must develop a maintenance plan for the proposed green infrastructure. For more information on the Complete Streets Initiative see the City's website at http://bostoncompletestreets.org/ 10.4

5. For any proposed masonry repair and cleaning HRP will be required to obtain from the Boston Air Pollution Control Commission a permit for Abrasive Blasting or Chemical Cleaning. In accordance with this permit HRP will be required to provide a detailed description as to how chemical mist and run-off will be contained and either treated before discharge to the sewer or drainage system or collected and disposed of lawfully off site. A copy of the description and any related site plans must be provided to the Commission's Engineering Customer Service Department for review before masonry repair and cleaning commences. HRP is advised that the Commission may impose additional conditions and requirements before permitting the discharge of the treated wash water to enter the sewer or drainage system. 10.5

6. The Commission will require HRP to undertake all necessary precautions to prevent damage or disruption of the existing active water and sewer lines on, or adjacent to, the project site during construction As a condition of the site plan approval, the Commission will require HRP to inspect the existing sewer lines by CCTV after site construction is complete, to confirm that the lines were not damaged from construction activity. 10.6

7. It is HRP's responsibility to evaluate the capacity of the water, sewer and storm drain systems serving the project site to determine if the systems are adequate to meet future project demands. With the site plan, HRP must include a detailed capacity analysis for the water, sewer and storm drain systems serving the project site, as well as an analysis of the impacts the proposed project will have on the Commission's water, sewer and storm drainage systems. 10.7

8. HRP should be aware that the US Environmental Protection Agency issued the Remediation General Permit (RGP) for Groundwater Remediation, Contaminated Construction Dewatering, and Miscellaneous Surface Water Discharges. If groundwater contaminated with petroleum products, for example, is encountered, HRP will be required to apply for a RGP to cover these discharges. 10.8

Water

1. HRP must provide separate estimates of peak and continuous maximum water demand for residential, commercial, industrial, irrigation of landscaped areas, and air-conditioning make-up water for the project with the site plan. Estimates should be based on full-site build-out of the proposed project. HRP should also provide the methodology used to estimate water demand for the proposed project. 10.9

2. The Commission supports HRP's commitment to explore opportunities for implementing water conservation measures in addition to those required by the State Plumbing Code. In particular, HRP should consider outdoor landscaping which requires minimal use of water to maintain. If HRP plans to install in-ground sprinkler systems, the Commission recommends that timers, soil moisture indicators and rainfall sensors be installed. The use of sensor-operated faucets and toilets in common areas of buildings should be considered. 10.10

3. HRP is required to obtain a Hydrant Permit for use of any hydrant during the construction phase of this project. The water used from the hydrant must be metered. HRP should contact the Commission's Meter Department for information on and to obtain a Hydrant Permit. 10.11

4. The Commission is utilizing a Fixed Radio Meter Reading System to obtain water meter readings. For new water meters, the Commission will provide a Meter Transmitter Unit (MTU) and connect the device to the meter. For information regarding the installation of MTUs, HRP's should contact the Commission's Meter Department. 10.12

Sewage / Drainage

1. In conjunction with the Site Plan and the General Service Application HRP will be required to submit a Stormwater Pollution Prevention Plan. The plan must: 10.13

   - Identify specific best management measures for controlling erosion and preventing the discharge of sediment, contaminated stormwater or construction debris to the Commission's drainage system when construction is underway.

   - Include a site map which shows, at a minimum, existing drainage patterns and areas used for storage or treatment of contaminated soils, groundwater or stormwater, and

the location of major control structures or treatment structures to be utilized during the construction.

- Specifically identify how the project will comply with the Department of Environmental Protection's Performance Standards for Stormwater Management both during construction and after construction is complete.

10.13

2. As stated in the ENF/EPNF, a NPDES General Permit for Construction from the Environmental Protection Agency and the Massachusetts Department of Environmental Protection is required. A copy of the permit and any pollution prevention plan prepared pursuant to the permit must be provided to the Commission's Engineering Services Department, prior to the commencement of construction. The pollution prevention plan submitted pursuant to a NPDES Permit may be submitted in place of the pollution prevention plan required by the Commission provided the Plan addresses the same components identified in item 1 above.

10.14

3. The Commission encourages HRP to explore additional opportunities for protecting stormwater quality on site by minimizing sanding and the use of deicing chemicals, pesticides, and fertilizers.

10.15

4. The discharge of dewatering drainage to a sanitary sewer is prohibited by the Commission. HRP is advised that the discharge of any dewatering drainage to the storm drainage system requires a Drainage Discharge Permit from the Commission. As stated previously, if the dewatering drainage is contaminated with petroleum products, HRP will be required to obtain a Remediation General Permit from the Environmental Protection Agency (EPA) for the discharge.

10.16

5. HRP must fully investigate methods for retaining stormwater on-site before the Commission will consider a request to discharge stormwater to the Commission's system. The site plan should indicate how storm drainage from roof drains will be handled and the feasibility of retaining their stormwater discharge on-site. Under no circumstances will stormwater be allowed to discharge to a sanitary sewer.

10.17

6. Sanitary sewage must be kept separate from stormwater and separate sanitary sewer and storm drain service connections must be provided. The Commission requires that existing stormwater and sanitary sewer service connections, which are to be re-used by the proposed project, be dye tested to confirm they are connected to the appropriate system.

10.18

7. The Commission requests that HRP install a permanent casting stating "Don't Dump: Drains to Boston Harbor" next to any catch basin created or modified as part of this project. HRP should contact the Commission's Operations Division for information regarding the purchase of the castings.

10.19

8. If a cafeteria or food service facility is built as part of this project, grease traps will be required in accordance with the Commission's Sewer Use Regulations. HRP is advised to consult with the Commission's Operations Department with regards to grease traps. 10.20

9. The enclosed floors of a parking garage must drain through oil separators into the sewer system in accordance with the Commission's Sewer Use Regulations. The Commission's Requirements for Site Plans, available by contacting the Engineering Services Department, include requirements for separators. 10.21

10. The Commission requires installation of particle separators on all new parking lots greater than 7,500 square feet in size. If it is determined that it is not possible to infiltrate all of the runoff from the new parking lot, the Commission will require the installation of a particle separator or a standard Type 5 catch basin with an outlet tee for the parking lot. Specifications for particle separators are provided in the Commission's requirements for Site Plans. 10.22

Thank you for the opportunity to comment on this project.

Yours truly,

John P. Sullivan, P.E.
Chief Engineer

JPS/rja

C: R Cox, Redgate
M. Connolly, MWRA via e-mail
M. Zlody, BED via e-mail
P. Larocque, BWSC via e-mail

boston planning & development agency

July 7, 2017

Secretary of Energy and Environmental Affairs
Executive Office of Energy and Environmental Affairs
ATTN: MEPA Office
Mr. Alex Strysky, EEA #15692
100 Cambridge Street, Suite 900
Boston, MA 02114

RE: Environmental Notification Form/Expanded Project Notification Form EEA #15692
L Street Station Redevelopment, 776 Summer Street, Boston, MA 02127

Dear Mr. Strysky,

Waterfront Planning staff of the Boston Planning & Development Agency (BPDA, or the "Agency") have received and reviewed the above-reference Environmental Notification Form/Expanded Project Notification Form ("ENF") submitted by HRP 776 Summer Street LLC (the "Proponent") for the proposed redevelopment of the decommissioned Boston Edison L Street Power Station (the "Project") located at 776 Summer Street in South Boston (the "Project Site"). The Project includes the cleanup and abatement of the 15-acre Project Site and existing buildings, 2.1-million square feet of mixed-use development, including the adaptive reuse of portions of the former power station, and more than two acres of public open space, including on the Project's shoreline. The Project Site consists of approximately four acres of private filled tidelands and approximately eleven acres of upland on the Reserve Channel; it is also within the South Boston Designated Port Area (DPA). As a result, the portions of the site that are filled tidelands are subject to the state's Waterways Regulations, as applicable.

Following the sale of the Project Site by the Exelon Corporation to the Proponent in 2016, the Agency initiated a public engagement process earlier this year. The purpose of the process was, given the prominence of the Project Site within South Boston and opportunities inherent in its redevelopment to significantly enhance the community, to better understand the priorities and aspirations of the neighborhood and affected stakeholders. The Agency hosted an open house, walking tours of the Edison Turbine Hall, and two community workshops, which altogether culminated in a planning process report (the "Report"), which is enclosed. The Report outlined a vision for the redevelopment of the Project Site and concepts intended to assist the development plan for the Project. The Project is generally consistent with the Report, which provides the foundation for the Agency's review of the Project through Article 80B of the City of Boston Zoning Code. 11.1

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During the concurrent MEPA Office and Agency review periods, the Proponent submitted a request to the Massachusetts Office of Coastal Zone Management (CZM) to initiate a review of the South Boston Designated Port Area (DPA) boundary ("Boundary Review"), which the Agency supports. While the Project Site originally met the criteria for inclusion within the DPA, the decommissioning of the power station and construction of the Conley Dedicated Freight Corridor, which will provide a direct connection for trucks between Summer Street and Conley Terminal – a long-standing City and neighborhood objective in order to remove truck traffic from East First Street – and effectively limit access to the Reserve Channel from the Project Site, have significantly diminished the Project Site's capacity for future water-dependent industrial use. Further, removal of the Project Site from the DPA will also advance the vision of Imagine Boston 2030, the City of Boston's first citywide plan in fifty years, which identified the site as a potential mixed-use growth area for much-needed new housing and job growth. (The latest draft of the plan is available at imagine.boston.gov/imagine-boston-plan/.) As a part of Imagine Boston 2030, the City also published an assessment of its waterfront and vision for its future. The Waterfront Assessment and Vision (available at imagine.boston.gov/imagining-bostons-waterfront/) developed nine principles to achieve a climate-resilient, sustainably managed waterfront for all. Those applicable to the Project Site include the creation of new open spaces on the water's edge; ensuring diverse experiences along the waterfront; improving connections between neighborhoods and the waterfront; and expanding waterfront housing and job centers. With its mixed-use development program and unique water open space that will preserve industrial artifacts of the site, the Project will significantly contribute to the realization of the goals of Imagine Boston 2030 according to the principles outlined by the Waterfront Assessment and Vision, provided it is removed from the DPA. 11.2

Agency staff will provide comment to CZM and testimony as a part of the Boundary Review process.

We appreciate the opportunity to comment and for your consideration.

Very truly yours,

Richard McGuinness
Deputy Director for Climate Change and Environmental Planning

Encl: *South Boston Edison Power Plant Planning Process Report*, BPDA

boston planning &
development agency

cc: Tim Czerwienski, Project Manager, BPDA
Lisa Berry Engler, Boston Harbor Regional Coordinator, CZM
Ben Lynch, Program Chief, MassDEP Waterways




# South Boston Edison Power Plant

## Planning Process Report

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## Edison Power Plant Workshop Outcomes

Over the next decade the Edison Power Plant site will undergo a transformation from an industrial relic that once provided energy and power for a growing city into a new, mixed-use development that will serve as a new source of vibrancy and enhance the South Boston community. The development of the 15-acre property will celebrate the site's history with the adaptive reuse of the 1903 Edison Turbine Hall and provide opportunities for new arts, civic and cultural uses, while creating new opportunities for jobs, housing, and businesses that can function with the adjacent port related uses along the Reserved Channel. After generations of the property being walled off from the community, new street networks and public realm activation will knit the district into the existing fabric of South Boston and allow for expanded access to the waterfront and create new, active open spaces.

*Figure 1. Opposite: Rendering of Massport's Conley Terminal improvements with Edison Power Plant Site Boundary in red.*

*Image from Massachusetts Port Authority*

### *Purpose and Process*

In 2016 Exelon Corporation sold the decommissioned Edison Power Plant property, which dates back to 1898, to a joint venture of Redgate and Hilco Redevelopment Partners who intend on re-purposing the site for an expansive new mixed-use development project. Due to the prominence of the Edison Power Plant property in South Boston and the opportunities for its redevelopment to enhance the community, the Boston Planning & Development Agency (BPDA) initiated a public engagement process in early 2017 to better understand the priorities and aspirations of the neighborhood and affected stakeholders in advance of the City's Article 80 development review process. As part of the engagement process the BPDA hosted an open house event and walking tours of the Edison Turbine Hall to familiarize the community with the project site and its history, as well as review the regulatory and planning context related to the property. Two community workshops were also held in February through which the following Redevelopment Vision and Redevelopment Concepts were developed based upon resident and stakeholder comment and discussion. The Redevelopment Vision and Concepts are intended to assist in guiding the development plan for the site and future character of the Edison Power Plant redevelopment project.

*Figure 2. Opposite Left: Image of existing street condition at the Edison Power Plant Site.*

*Opposite Right: Context map*

*Images from Developer Team and Planning Staff*

### *Planning Area Context*

The Edison Power Plant property is surrounded by a dynamic mix of residential, commercial and industrial uses, including the Massachusetts Port Authority's (Massport) Conley Terminal. Land use adjacent to the Reserved Channel is primarily governed by the state's Public Tidelands Act, Chapter 91, Designated Port Area standards, and the City's Maritime Economy Reserve zoning, which focus on water dependent








and marine industrial uses. Past zoning and planning initiatives that relate to the area include the 1999 Seaport Public Realm Plan, which envisioned 1st Street as more residential in scale and use, and the 2011 East & West First Street Planning and Rezoning effort (Article 68), which focused on use and dimensional standards to facilitate the development of a mixed-use district that reflects the changes in the community and protects both growing residential uses and existing commercial and industrial areas. Massport's adjacent Conley Terminal continues to function as the region's primary container and shipping terminal and is currently expanding its capacity to meet the needs of a growing port. As part of the expansion project Massport is also advancing efforts to mitigate port related impacts on the community, including the construction of the Thomas J. Butler Freight Corridor and Memorial Park, which will remove truck traffic from East 1st Street, and create new community open space that will function as a significant noise and visual buffer for adjacent residents.

## Redevelopment Vision

### *Community*

New development will involve and engage the South Boston community with programming and civic, cultural and retail uses that attract broad populations and are multi-generational in nature. Design and materials of new buildings and the public realm will be distinct and eye-catching yet respectful and contextual of the existing South Boston neighborhood. The development site plan and new uses anticipated for the property will serve community needs for gathering space, civic and cultural facilities, as well as new food and retail options.

### *Arts and Industry*

The development will function as an "Arts and Industry" themed district with Edison Turbine Hall as the heart and soul of the site with its industrial and historic character serving as an aesthetic that defines the look and feel of new development. Art, cultural and civic uses will be integrated throughout the development with a focus on art that engages the public and utilizes innovative materials. Historic industrial and port-related attributes should be preserved with old industrial equipment, interpretive exhibits and signage that represents the history and role of energy production as a development theme.

*Figure 3. Opposite: Images of Open House graphics, the walking tour, and the February workshop activity where community members discussed what they would like to see at the site*

*Images from Planning Staff*

### *Mix of Uses*

A mixed-use development program will serve as a destination that attracts a variety of communities and demographics. Active ground floor uses throughout the development will draw people in, with more active use along Summer Street, and quieter uses along East 1st Street where there are existing residential homes. New residential populations will activate the district, while retail will serve community needs, and support and complement local businesses. New uses will be located and organized to function with adjacent port activity and ensure the continued operation of an active and thriving Conley Terminal.

### *Waterfront and Open Space*

New waterfront open space will accommodate a number of uses and be designed, along with streets and sidewalks, to have a public rather than private character. The waterfront open space will provide opportunities for active recreation, retail and civic uses, as well as in-water and watersheet uses that do not conflict with port related activities in the Reserved Channel. New open space will










connect with existing Harborwalk and parks along East 1st Street, and create views corridors through the site to establish visual connections to the water from East 1st and M Streets.

### *Design and Public Realm*

Building, roadway, sidewalk and open space design will be legible and welcoming to the public and create a sense of discovery and curiosity that engages and draws people into the site. The design and development program will take cues from the site's former industrial uses and scale, and establish a new district within the neighborhood with a distinct character and sense of place.

### *Connections and Access*

Traffic congestion and parking needs have long been neighborhood concerns that new development should not exacerbate, and where possible, improve access to transit, mobility conditions, and multi-modal infrastructure.

## Redevelopment Concepts

***Placemaking, Preservation and Programming:***

- Edison Turbine Hall restored for adaptive reuse and functioning as a focal point of the site's redevelopment. The structure's size and scale, extending from the Reserved Channel to East 1st Street, allows for a number of potential uses. The building design should be public in nature, visible from surrounding streets with porosity and connectivity to the surrounding public ways, sidewalks and Harborwalk.
- Flexible facilities and accommodations for a variety of arts and cultural uses, including indoor and outdoor space for art galleries and exhibits, areas for rehearsal and fabrication, and an amphitheater for theater performances and concerts. Partnerships with other arts organizations and universities in the city can also assist in programming and administering arts and cultural space. Additional facilities to support the arts and artists should be considered, such as artist live work space and an artist in residency program.
- Makerspaces for fabrication or advanced manufacturing that celebrate the industrial nature of the site, continue the tradition of jobs on the property, support small, industry skill based jobs, and provide job training.
- The integration of civic uses into the project, such as community center that can function as a venue for weddings and baby showers, community meetings and other events. Additional classroom space could also be provided for educational, tutoring, and mentoring programs.
- A variety of retail and commercial uses that can address the needs of the South Boston community and function to draw broad populations to the site. The Edison Turbine Hall is envisioned as an opportune location for an open market food hall with seating and public amenities that spill into the public realm. Potential businesses that could thrive include a bakery, coffee shop, small-scale restaurants, local public vendors, and a deli/butcher, with an interest towards "mom-and-pop" scale stores as opposed to larger retail chains. Other retail and commercial interests include shoes and clothing, a grocery store, book stores, theater, housewares, antiques and a microbrewery.
- Include a diverse mix of uses such as a boutique hotel that can draw visitors into the area and support local businesses. To ensure the district is active, vibrant, and diverse new residential units should be part of the development program that accommodates mixed incomes and encourages home ownership.







*Figure 4. Above: Precedent images of programming & placemaking, centered around an arts & industrial character*

*Images from February Workshop Developer Team Presentation*

*Figure 5. Opposite: Conceptual diagram of potential, distinct placemaking & programmatic zones - conceptual graphic developed through community workshop discussions and does not illustrate the final design*

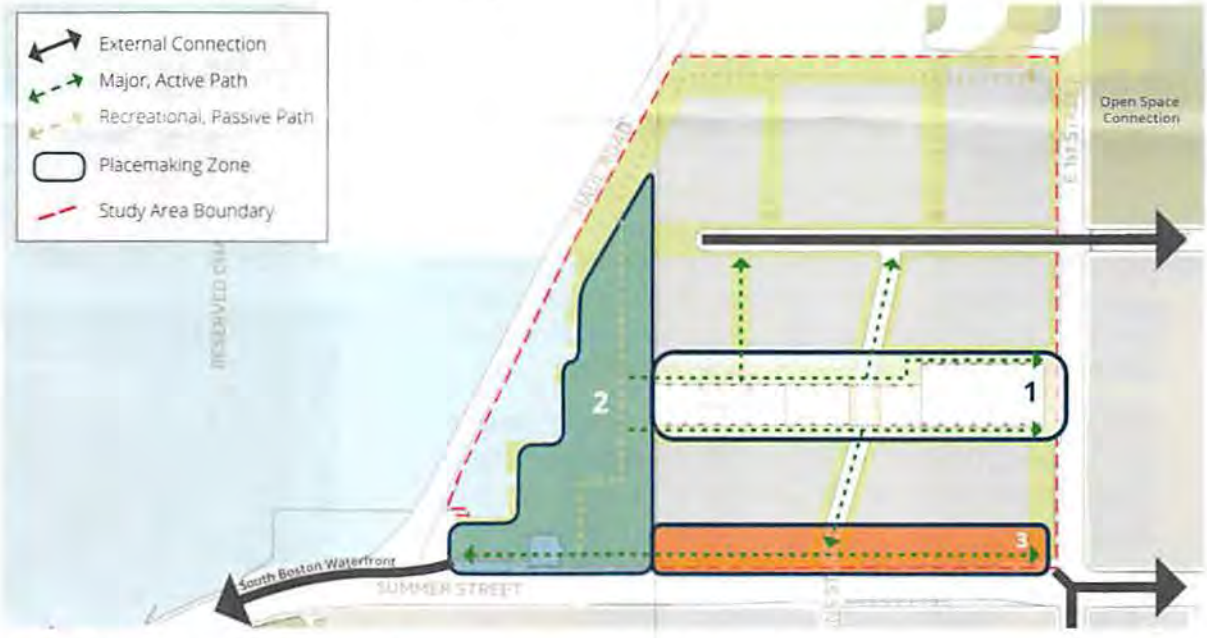
## Illustrative Graphic Summarizing Community Dialogue Input - Placemaking

**1 Turbine Hall Marketplace**
Arts & Industrial Focal Point

- Pop-up retail and art exhibits
- Small-scale 21st century industrial (microbrewery, maker-space)
- Theater
- Open seating and dining areas
- Specialty Food (butcher, bakery)

**2 Waterfront Activation Zone**
Complementary Outdoor Arts

- Outdoor market
- Outdoor gallery and sculpture
- Outdoor theater, open seating
- Active and passive recreation




**3 Summer St Commercial Row**
Active Retail on Neighborhood Edge

- Grocery store
- Retail complementing arts & industrial character

**Site-wide**
Mixed-use

- Residential, office, active ground floors
- Boutique hotel

With housing affordability an issue throughout Boston, and particularly acute in South Boston, the redevelopment should respond to the city's Inclusionary Development Policy, and support of workforce and senior housing.

- The "Arts and Industrial" theme should relate to the design and architectural vernacular of new development through maintaining existing architectural and industrial elements and new buildings that are contextual to the surrounding community with more brick rather than the glass office buildings that define the South Boston Waterfront. Creative exterior lighting elements can also enhance the new and historic architectural elements on the site.

### *Neighborhood Character and Open Space:*

- Reimagine the Summer Street corridor to create a sense of arrival and function as a "Welcome to South Boston" experience. The East 1st and Summer Streets intersection should serve as a primary gateway to the site with landscaping and welcoming and functional wayfinding signage. Also improve the pedestrian experience and sidewalk width along the north side of East 1st Street with a broader sidewalk that may extend into and through Turbine Hall, and better connect the site to the open space resources along East 1st and M Streets, including the adjacent Butler Memorial Park.
- Improve the condition and character of Summer Street and East 1st Street that currently define the western and southern limits of the site. Removal of the oppressive building massing and walls along these public ways, with more generous sidewalks, landscaping, benches, lighting and building setbacks to make more pedestrian friendly and transition into the site. New roads and pedestrian points of entry into the property should function to create porosity and extend view corridors from the community and through the site to the waterfront.
- A human scale built environment at the ground and street level that provides visual variety and is pedestrian friendly. Building massing should vary in height throughout the site and have an open character with light and air between building elements to prevent creating a cavernous or canyon like street condition. New buildings should respect and frame Edison Turbine Hall and not overwhelm the historic structure. Building density should step up from the surrounding streets and existing community's height datum with new, higher building elements situated where there are existing tall structures on site and not exceed those heights. Greater density may also be more appropriate away from the community and toward the adjacent Conley Terminal and MBTA properties, while limiting shadows that discourages use of adjacent open space resources.
- Utilize building massing along the north and east side of the property as a buffer between site and Massport's Butler Freight Corridor and Conley Terminal. Other design, massing, noise mitigation and site elevation measures should also be considered to visually buffer the site from the freight corridor.
- New open space and parks that function to create a network through the property to the adjacent Butler Memorial Park and M Street, and establish a signature park along the site's waterfront that serves as a destination for the community. The waterfront park should have Harborwalk that integrates into







*Figure 6. Above: Precedent images of neighborhood character and public realm for the interior of the site, centered around the historical character of Turbine Hall*

*Images from February Workshop Developer Team Presentation*



*Figure 7. Above: Precedent images of neighborhood character and open space for the waterfront plaza.*

*Left, Right Images from February Workshop Developer Team Presentation. Center Image: Brooklyn Bridge Park, Julienne Schaer.*

pathways and greenspace around Turbine Hall as well as unifying elements and connections to Summer Street and the internal street and pedestrian network. A number of active and passive uses are desired for the waterfront open space with amenities such as a water taxi dock, kayak rentals, accommodations for fishing, as well as benches, lighting and mix of surface materials and vegetation. There should be attention on ensuring the waterfront open space is active year-round with street performances, summer movies, games and possibly a winter garden. Uses and activities along the waterfront and areas adjacent to Massport and MBTA property must be able to function with port, bus and trucking related activity.

- Activation and programming precedents to reference include the Boston Convention and Exhibition Center's Lawn on D; the City of Chelsea's PORT waterfront park; Downtown's Boston Public Market and South End's SOWA market; and, New York City's High Line and Seattle's Pike Place market.
- Emphasis on "greening" the site with street and shade trees, vegetation and landscaping that soften the built and industrial scale elements and encourage a natural flow of foot traffic through the site. Expansive walking paths, sidewalks and open space areas should be designed to provide cues and read as a destination for public use and interaction that is fully integrated with private uses.
- Incorporate climate-smart design including landscaping and structural elements to ensure resiliency against rising seas and storm surge, increased temperatures, and higher precipitation levels.
- Advance sustainable design and green building principles. As the site has historically served as an energy production facility, new development provides an opportunity to exemplify how energy production has evolved through the integration of renewable energy technologies and community energy solutions.

### *Mobility & Access:*

- MBTA bus service to the City Point and L Street Corridor of South Boston is currently not meeting community transit demands. Given the size and mix of uses anticipated with the new development, greater transit service and capacity needs to be advocated for and accommodated with space for bus stops and possibly a transit center, or hub on the adjacent MBTA property. Ideas also include having an express No. 7 bus to connect quickly to the city at peak commuting hours.
- Advance alternative means of transportation that work for all age groups and demographics, and reduce dependence on cars, while recognizing that cars will continue to have an important role as a mobility option. The establishment of a mobility hub that brings together transit, bike and car-share resources along with water transportation would be a great resource for the development and community. Accommodations should be made on the property for programs and infrastructure for car and bike share, electric vehicles, water transportation and pedestrian wayfinding and amenities. Becoming an added "Southie Shuttle" stop connecting the development site to the South Boston Waterfront, South Station and Broadway corridor would also alleviate dependence on cars and be a great community benefit.
- Integrate a new street network into the primary roads serving the adjacent community and provide for visual and pedestrian connections into the site and down to the waterfront. Design should accommodate wide and landscaped sidewalks, bike lanes, and well-marked pedestrian paths and crossings both within the site and connecting to adjacent residential areas. Traffic calming measures, particularly on Summer Street should be implemented to reduce vehicular speeds and enhance pedestrian access and comfort.
- Provide adequate parking for the anticipated mix of uses, and ensure new development does not function to place greater demands on community parking resources. Explore options for providing some level of fee-based public parking for area residents and visitors, with an emphasis on night and weekend parking. On-street parking on roads internal to the project should be provided to maintain neighborhood character.





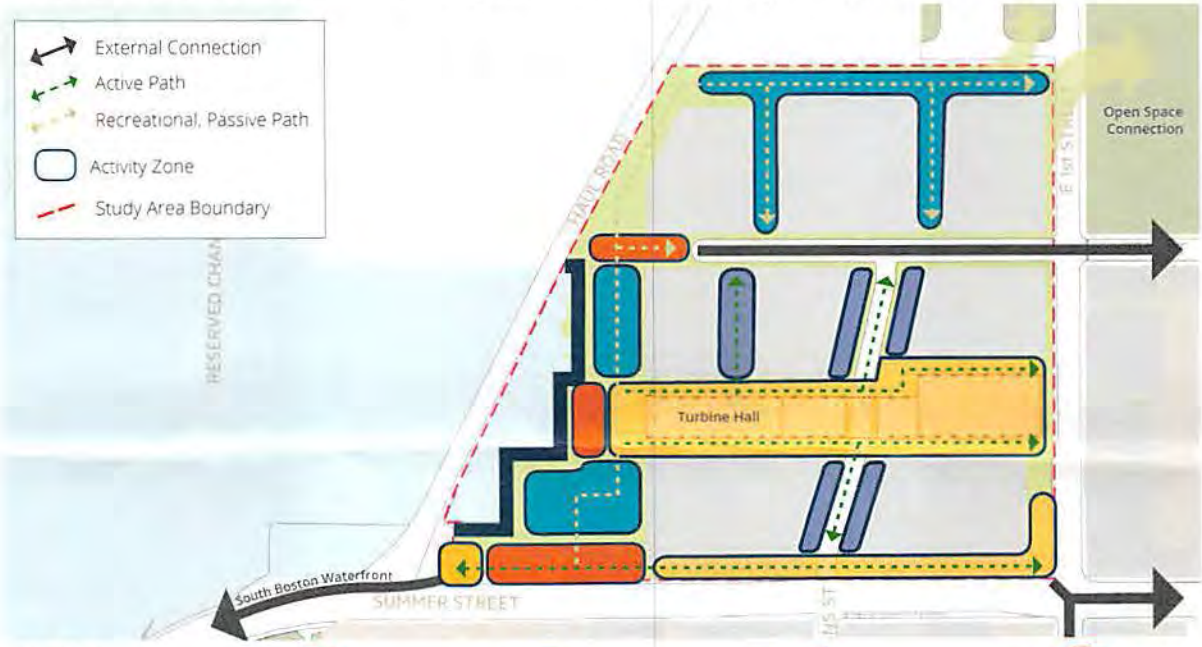
*Figure 8. Above: Precedent images of walkable, multi-modal networks.*

*Images from February Workshop Developer Team Presentation*

*Figure 10. Opposite: Conceptual diagram of potential, distinct open space active uses - conceptual graphic developed through community workshop discussions and does not illustrate the final design*

*Figure 9. Opposite: Conceptual diagram of potential connections - conceptual graphic developed through community workshop discussions and does not illustrate the final design*

## Illustrative Graphic Summarizing Community Dialogue Input - Activity Zones




**Waterfront Activities**
Direct access to water
- fishing
- kayaking

**Passive Recreation**
Diffuse, individual, buffer
- running paths
- small plazas for yoga
- outdoor gym

**Cultural Programming**
Arts opportunity
- see placemaking & programming diagram

**Active, Indoor Recreation Edge**
High investment, some indoor
- Fitness center
- Climbing wall

**Active Recreation**
High energy, space-intensive, durable equipment
- skate park
- splash park/pool
- playground/fitness park

## Illustrative Graphic Summarizing Community Dialogue Input - Mobility & Access



AS 15692

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JUL 10 2017
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The Commonwealth of Massachusetts
MASSACHUSETTS SENATE

SENATOR LINDA DORCENA FORRY
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July 7, 2017

Honorable Matthew A. Beaton, Secretary
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston, MA 02114

Dear Secretary Beaton,

I am writing in regards to a development proposal in a Designated Port Area (DPA) in my district. The L Street Station Redevelopment proposal is located at the former Edison Power Plant site at 776 Summer Street. Currently, this project is undergoing a robust community engagement process led by the Boston Planning and Development Agency (BPDA); and I ask decisions not be made by MEPA until this process has concluded.

Immediately adjacent to the L Street Station Redevelopment proposal, Massachusetts Port Authority is in the final stages of completing the $75 million construction of the Thomas J. Butler Haul Road and Buffer Zone Park. This project was aimed at increasing efficiency at Conley Terminal as well as removing approximately 1,000 commercial trucks from residential streets to reduce both air and noise pollution in the community. Additionally, the Commonwealth of Massachusetts, in partnership with the Federal government and Massport, has teamed up to commit $1 billion to dredge Boston Harbor and expand Conley Terminal in order to help Massachusetts grow as a leader in the international shipping industry. According to the developer's PNF and MEPA filings, this project would generate between 10,000 – 21,000 new vehicle trips daily. A full vetting of the transportation logistics should be completed prior to approvals. 12.1

This project has great potential in transforming an old power plant into a mixed use development with significant green and open, public space on the waterfront. As this process continues to move forward, I want to ensure these important, accessible spaces on the waterfront are maintained, publicly owned and protected in perpetuity to ensure preservation and access for generations to come.

While I am hopeful about this project, I ask MEPA not to take any action at this time so the community has ample time to help shape and inform the L Street Station Redevelopment. Thank you for your attention to this matter; if you have any questions, please do not hesitate to contact my office. 12.1

Sincerely,

Linda Dorcena Forry

Linda Dorcena Forry
State Senator

CC: Deidre Buckley, MEPA Director
C. Stolle Singleton, EOEEA Legislative Director

AS
15092

STEPHEN F. LYNCH
8TH DISTRICT, MASSACHUSETTS

COMMITTEE ON FINANCIAL SERVICES
SUBCOMMITTEE ON CAPITAL MARKETS, SECURITIES, AND INVESTMENTS
SUBCOMMITTEE ON TERRORISM AND ILLICIT FINANCE

COMMITTEE ON OVERSIGHT AND GOVERNMENT REFORM
RANKING MEMBER, SUBCOMMITTEE ON NATIONAL SECURITY
SUBCOMMITTEE ON GOVERNMENT OPERATIONS

ASSISTANT DEMOCRATIC WHIP

# Congress of the United States
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July 7, 2017

Hon. Matthew A. Beaton, Secretary
Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston, MA 02114

**Re: 776 Summer St., South Boston (Edison Power Plant) Proposal**

Dear Secretary Beaton:

I am writing to you regarding the proposed 15.2 acre project located at 776 Summer St., South Boston formally known as the former L St. Power Plant. As the Congressman from the Eighth Massachusetts District, I represent the families of South Boston.

This proposal raises many serious neighborhood concerns including density, traffic, public safety and parking. Further, there are maritime and environmental issues that need to be addressed.

While this proposal would add approximately 1,500 additional housing units as well as retail and commercial shops and a possible hotel, it would overwhelm the neighboring residential area unless thoughtful and careful countermeasures are included. Currently such mitigation has not been suggested.

Moreover, as Conley Terminal has expanded, we have worked with MASSPORT over several years to create a Dedicated Freight Corridor (DFC) to relieve East First Street of over 1,000 daily tractor-trailer truck trips. As part of this process, Thomas Butler Park was created to act as a buffer zone mitigating noise and carbon emissions from the truck traffic which will soon be redirected onto the DFC. 13.1

This proposed project according to the proponents PNF and MEPA filings would negate the neighborhoods efforts and generate an additional 10,000 to 21,000 vehicle trips through the South Boston Neighborhood. This would reverse the progress that has been made in this area and leave the neighborhood in worse condition after all the work and investment by the Commonwealth of Massachusetts and Massport. From a neighborhood standpoint, this simply cannot be allowed to happen.

Neighborhood parking has become a major concern to residents, and this proposal would contribute to an already unmanageable situation. Other issues of concern include public safety and environmental issues during the demolition and cleanup process, with potential health risks of contaminants drifting into the surrounding homes as well as onto the parks directly across the street.

Notably, over a billion dollars has been invested through Federal and State partnerships for the dredging of Boston Harbor and the Reserved Channel to increase the international shipping industry and make the Port of Boston more competitive. This development would negatively impact all the advancements made to the Port of Boston and to Conley Terminal by further harming traffic flow and air quality by adding vehicular traffic onto local streets which are not able to sustain the additional traffic flow in and out of the South Boston community. 13.1

Meanwhile we have several other developments that are coming on line which are likely to exacerbate traffic and density issues.

While the people of South Boston have been very cooperative and supportive of the many developments in our neighborhood, that support and cooperation has been the result of a two way conversation between the developer, local leaders and community groups.

Therefore, I respectfully request that MEPA does not sign off on this project at this time. Further I would strongly recommend that a comprehensive community process be undertaken by the developer at times that are convenient to local residents (NOT the middle of August) to fully engage the neighborhood residents to discuss the impacts of the project on the South Boston community.

Mr. Secretary, thank you for your time and consideration in this matter. The Baker Administration has been a good partner to our neighborhood as we have tried to manage all the development projects in our area in a way that allows for responsible projects to move forward while protecting the quality of life in our neighborhood. We thank you for your role in that success and we trust that this partnership will continue.

Sincerely,

**STEPHEN F. LYNCH**
Congressman
8th District
Massachusetts

cc: Deirdre Buckley, MEPA Director
C. Stolle Singleton, EOEEA Legislative Affairs Director

*The Commonwealth of Massachusetts*
HOUSE OF REPRESENTATIVES
STATE HOUSE, BOSTON 02133-1054

NICK COLLINS
REPRESENTATIVE
4TH SUFFOLK DISTRICT

VICE CHAIR
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Hon. Matthew A. Beaton, *Secretary*
Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston MA 02114

July 7, 2017

**Re: L Street Station (Edison Power Plant) Proposal**

Dear Secretary Beaton:

I am writing to you to express my concerns about a development proposal in a Designated Port Area in my district. The project is located at 776 Summer Street and encompasses the former Edison Power Plant.

After reviewing this proposal, it is clear that the density proposed is simply unfeasible. According to their PNF and MEPA filings, this project would generate between 10,000 and 21,000 new car trips in and out of the neighborhood daily. Currently, the Massachusetts Port Authority (Massport) is wrapping up a $75 million investment in the Thomas J. Butler Haul Road and Buffer Zone Park. This was done in preparation of the expansion of Conley Terminal to get roughly 1,000 commercial trucks off of East First Street to alleviate the environmental and noise impacts on area residents. To follow that effort, Massport, the Federal Government, and the Commonwealth of Massachusetts have joined forces to invest roughly $1 billion to dredge Boston Harbor and expand Conley Terminal to make Massachusetts more competitive in the international shipping industry. If the proposal for 776 Summer Street were approved as is, it would fly in the face of that significant public investment, negatively impact the port of Boston, our transportation infrastructure, air quality, and further exacerbate the gridlock on our streets. 14.1

Additionally, I have concerns about public access to the waterfront and green space. Any and all green space and open space on the waterfront should be publically owned and protected in perpetuity to ensure preservation and access for generations to come.

It is for these reasons that I respectfully request that MEPA does not sign off on this project at this time. Thank you for your consideration of this request. If you have any questions regarding this matter, please do not hesitate to contact my office.

Sincerely,

Nick Collins

NICK COLLINS
*State Representative-4th Suffolk District*

CC: Deirdre Buckley, MEPA Director; C. Stolle Singleton, EOEEA Legislative Affairs Director

MICHAEL F. FLAHERTY
BOSTON CITY COUNCIL AT-LARGE

July 7, 2017

Matthew A. Beaton, Secretary
Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston MA 02114

**Re: L Street Station (Edison Power Plant) Proposal**

Dear Secretary Beaton:

I am writing to you to express my reservations about a development proposal in a Designated Port Area in the neighborhood of South Boston. The project, which proposes to be 15.2 acres and encompass the former Edison Power Plant (located at 776 Summer Street), has raised serious concerns from the surrounding neighborhood. Based on the project's PNF and MEPA filings, the project would generate a multitude of quality-of-life issues that need to be addressed beforehand through an exhaustive neighborhood engagement process.

The proposal calls for 1,500 housing units as well as retail space to be developed in an already dense area. As we have seen over the past decade, the rapid development in South Boston has overwhelmed the neighborhood numerously. Further, 10,000 and 21,000 new vehicle trips are projected to take place both in and out of the neighborhood on a daily basis. If this project is approved, significant financial investments made by both the Commonwealth of Massachusetts and the Massachusetts Port Authority ("Massport") for traffic and noise alleviation – which the stakeholders of South Boston have advocated for via the Thomas J. Butler Haul Road and Buffer Zone Park – would be countered.

Massport, the Federal Government, and the Commonwealth of Massachusetts have jointly invested over $1 billion to dredge Boston Harbor and expand Conley Terminal so that Massachusetts is more viable for the international shipping industry. If this project is approved, traffic flow and air quality would be negatively impacted, and the local streets in the neighborhood of South Boston would feel the burden. Further, given that this site used to be a power plant, there are serious environmental, health and safety concerns that need to be acknowledged. If this project is approved, there is potential for contaminants affecting the surrounding community during the demolition and cleanup process. Lastly, there needs to be preservation of and access to the surrounding greenspaces and waterfront. 15.1

Boston City Hall - 5th Floor, Boston, MA 02201 • (617) 635-4205 • FAX: (617) 635-4203 • michael.flaherty@boston.gov

The stakeholders of South Boston have been supportive and accommodating to the many developments that have taken place in the neighborhood. But the support and accommodation is reached as a result of a thorough community process – a factor that has not taken place with regards to this proposed project. It is for the above mentioned reasons that I respectfully request that MEPA does not sign off on this project at this time. Thank you for your consideration of this request. 15.1

Regards,

Michael F. Flaherty

Michael F. Flaherty

15 State Street, Suite 1100
Boston, MA 02109
617.223.8671
bostonharbornow.org

July 7, 2017

Via email to: Alexander.Strysky@state.ma.us

Secretary Matthew Beaton
Executive Office of Energy and Environmental Affairs (EEA)
MEPA Office, Attn: Alex Strysky, EEA# 15692
100 Cambridge Street, Ste 900
Boston, MA 02114

Re: L Street Station Environmental Notification Form, EEA# 15692

Dear Secretary Beaton,

On behalf of Boston Harbor Now, thank you for the opportunity to comment on the Environmental Notification Form (ENF) submitted by HRP 776 Summer Street LLC (HRP). Our policy team has reviewed the project presentation at a series of open house meetings, participated in the community design charrettes, and was present during the MEPA site visit on June 21, 017.

We want to acknowledge the BPDA for hosting early community outreach events and walking tours of the Turbine Hall. Through its company representatives and community engagement, HRP has shown a willingness to listen and include public input in the early planning and design stages. We support increased public participation throughout the planning process and look forward to continued collaborations as the project moves forward through permitting and licensing.

As presented in the ENF, the proposed filing is for the redevelopment of the former Exelon Site located esignated ort rea long he eserved hannel outh oston. On June 20, 2017 HRP submitted a request to the Office of Coastal Zone Management (CZM) for a boundary review of this portion of the South Boston Designated Port Area.

Defined as "land and water areas with certain physical and operational features that have been reserved by the Commonwealth for maritime industrial ses," Designated Port Area policy is intended o rotect nd romote water dependent industries and prevent the loss of the areas and infrastructure required to support such industry. As longtime advocates of the working port,

16.1

Boston Harbor Now is concerned about the piecemeal de designation of these limited land areas. We will ubmit ore etailed omment tter esponding to the boundary review request. It our position that until the Secretary has reviewed and issued a final determination of the DPA boundary review request, it is premature to engage in a detailed discussion of the proposed redevelopment. 16.1

The following four areas will require more careful consideration should the project move forward through the permitting process:

- Compatibility with existing aritime dustrial ses
- Open space and access
- Transportation, and
- Climate Preparedness

16.2

**Project Description**
As described in the ENF, the campus will encompass 15 acres of land along the Reserved Channel in the South Boston waterfront. Of the total land area, 4.1 acres are on filled tidelands and within Chapter 91 jurisdiction. Because the proposed development is for a non water dependent use, the project will require a new Chapter 91 license.

There will be several buildings on site ranging in height from 80 feet to a maximum 220 feet. These buildings will include 339,639 SF of office space spread across two buildings, 8,077 F or retail se, .5 illion F of 1,588 residential units across five residential blocks, nd a 150 key hotel. The parking needs for these new structures will be serviced by 987 on site parking spaces with the possibility for additional street parking.

The entire project will be phased over a 10 year period starting in 2018. Project construction will begin with the rehabilitation of the Turbine Hall and residential areas along First Street.

**Existing Maritime Industrial Uses**
The campus is bordered by the South Boston neighborhood to the south, he onley erminal Dedicated Freight Corridor (DFC) to the north, and maritime industrial uses to the immediate East and West. The Massport operated Conley Terminal runs along East First Street and is an active working port. In anticipation of projected future growth in container ctivity t onley and to address neighborhood concerns over noise and dust, Massport invested nearly $35 million on a series of facility and operational improvements:

1. Acquisition of the former Coastal Oil site
2. Construction of the 2/3 mile Thomas J. Butler Freight Corridor to move container truck traffic away from residents along East First Street and portions of Summer Street; and
3. Construction of the new 4.2 acre Thomas J. Butler Memorial Park to serve as a significant oise nd isual uffer.

To our knowledge, no other mixed used Boston Harbor waterfront development has a dedicated truck route running through a section of the parcel. Trucks are the lifeline of Boston's working port and the Dedicated Freight Corridor is the major truck route serving Conley Terminal with heavy industrial traffic at all hours of the day and night. It is essential that, before project plans are finalized and approved, the proponents work with the Massport maritime 16.3

department to ensure that the proposed mixed use development does not impact truck access to Conley Terminal and other working ort usinesses. To minimize potential conflicts of use, future filings should include additional details of truck traffic to and from Conley Terminal as well as truck loading/offloading activities planned on the abutting Coastal Oil site.

16.3

Finally, due to the proximity of the proposed development to marine industrial properties, we suggest exploring a covenant or alternative agreement in roperty ases nd ales to acknowledge baseline levels of noise and other impacts resulting from truck traffic and other marine industrial businesses. Additional opportunities for soundproofing should also be explored.

**Public Benefits**

The redevelopment of this site will make a currently inaccessible waterfront area available for public use and enjoyment. The project will include he ollowing ublic enefits:

- Cleanup and abatement of contaminated project site
- Creation of Arts and Industry space
- Publicly accessible open space
- New retail space
- Outdoor dining areas
- Bicycle and pedestrian oriented streets, nd
- Two additional vehicular access points/driveways into the Site

Figures 3.9a and 3.9b include a dozen examples of outdoor spaces and construction materials used in similar industrial areas around the country. We appreciate the proponent's efforts to present a potentially diverse set of open space experiences for the general public. We are especially encouraged by the focus on arts and culture.

The proposed project will include approximately 104,500 SF of total public open space, a little over 50,000 SF will be located along the waterfront and adjacent to the existing Dedicated Freight Corridor.

We are concerned about the ENF's characterization of current maritime industrial ctivities t DFC and nearby Conley Terminal operations. These areas have active industrial uses that add a significant amount of noise, dust, and vibrations to the area. The design and programming of the public areas along the northern edge of the site must reconcile two very different uses general public use and the continued industrial operations of Conley Terminal and other working port businesses. A successful design and activation plan will minimize negative impacts to existing water dependent industrial uses.

16.4

**Transportation**

We strongly support Mayor Walsh's commitment to a carbon neutral Boston by 2050. This is an ambitious goal that requires significant collaborations between the public sector and private development. This proposal will add a substantial number of new residents and workers to an already overburdened transportation and parking system in South Boston.

Currently, he roject ite has 275 existing parking spaces. The ENF states the proponent will add 712 new spaces for a total of 987 on site parking spaces. Preliminary traffic studies expect an increase from zero trips per day to 20,370 unadjusted/8,780 adjusted vehicle trips per day. Of these new trips, 661 are expected during the morning rush hour and 768 in the evening rush hour.

Table 5 4 of the ENF points o five existing MBTA bus routes within walking distance of the project site. Only one, Route 7, has a stop immediately adjacent to the property along Summer Street and is the only bus option for inbound ervice across the Reserved Channel to the Seaport and Downtown. During peak commuting hours this route consistently operates over capacity and does not operate at all on Sundays. With the nearest T stations more than a 10 minute walk from the site, increased access to public transportation is a critical issue that must also be addressed in future project filings.

Section 5 of the ENF explores a number of options to alleviate transportation related concerns:

- Creation of bicycle accommodations in accordance with the Boston Transportation Department Guidelines.
- Creation of a shared use path along East 1st Street
- Increased eliance n ide haring ervices s n lternative ethod f ransportation
- Shuttle services to and from the Project site
- Enhancements to Route 7 and reinstatement of the Silver Line 3 to City Point, and
- Implementation f obust rogram f DM trategies

After reviewing the Transportation section of the ENF, the collective traffic impacts of the proposed development remain unclear. Addressing the traffic and parking needs are high on the priority list for the South Boston neighborhood. The additional density and daily trips anticipated from the proposed project are likely o xacerbate rowing problem. Moving forward, the project must do more to address transportation concerns.

Future project filings and the DEIR should include traffic impact analysis that acknowledges commercial, truck, public transit and commuter vehicle traffic, especially for intersections that will experience increased congestion at Summer Street and East First Street. 16.5

**Climate Resilient Design**

We note that the ENF discussion of climate preparedness is thoughtful and appropriately conservative. We appreciate the inclusion of climate change data from several sources including the Office of Coastal Zone Management, MassDOT, the Boston Research Advisory Group (BRAG), nd the City's Climate Ready Boston Report. We support the proponent's se of BRAG's more conservative "business as usual" high emissions scenario predicted for late century (2070). As presented in the ENF, the finished floor elevation for the project is proposed at 21.5' BCB, three feet above the FEMA 100 year flood elevation.

As described in the ENF the proponent may also consider the following:

- Movable and permanent flood barriers to protect certain vulnerable sections of the project
- Emergency generators located on the roof

16.6

- Operable windows for residential spaces
- Back up power generation capabilities
- Electrical systems located above the floodplain
- Improvements o tormwater frastructure
- Saltwater tolerant plantings, and
- Installation f ackflow reventers

16.6

Given the significant risk of flooding in South Boston, we encourage the proponent to incorporate number of these resiliency strategies into the final project design. This particular site and building design should consider the possibility that today's 1% storm could have a frequency of 10% by mid century, and that chronic flooding associated with monthly and seasonal high tides will become more and more prevalent during the latter half of the century. According to the BRAG report, the possibility that such flooding will occur several times per week cannot be ruled out.

Thank you for the opportunity to comment.

Sincerely,

Jill Valdes Horwood
Director of Policy

BOSTON PRESERVATION ALLIANCE

**Board of Directors**

Leigh Freudenheim
Chair

Susan Park
President

Christopher Scoville
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Michael LeBlanc AIA

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Catharine Sullivan

Anthony Ursillo

Peter Vanderwarker

**Executive Director**
Gregory J. Galer, Ph.D.

The Otis House
141 Cambridge Street
Boston, MA 02114
617.367.2458
**bostonpreservation.org**

July 7, 2017

Mr. Alexander Strysky
Executive Office of Energy and Environmental Affairs (EEA)
Attn: MEPA Office
100 Cambridge Street, Suite 900
Boston, MA 02114
**Re: L Street Station Redevelopment, South Boston, EEA No. 15692**

Dear Mr. Strysky,

The Boston Preservation Alliance is Boston's primary, non-profit advocacy organization that protects and promotes the use of historic buildings and landscapes in all of the city's neighborhoods. With 40 Organizational Members, 98 Corporate Members, and a reach of 35,000 friends and supporters we represent a diverse constituency advocating for the thoughtful evolution of the city and celebration of its unique character. We appreciate the opportunity to offer comments on projects that impact the historic character of the city.

The Alliance has had the opportunity to visit the power plant site at 776 Summer Street and participate in a recent public meeting. We applaud the proponent's efforts to add vibrancy and energy back to this site through the proposed mixed-use redevelopment, and appreciate their extensive community outreach early in the process.

This large industrial and engineering complex was the site of important developments of the electrical industry not just for Boston but for the nation. The evolution and growth of the site and its buildings reflect the changes and innovation in the technology of power generation as demand grew here in Boston. Evidence of those developments are visible in the buildings themselves both inside and out. From the late 19th to just a decade ago, from early D.C. power to modern generation, this site still speaks to the critical importance of industrial infrastructure to our social and economic development. In an age when so much of our technology exists in small, black boxes it is not surprising that there is great interest in the unique, mechanical, and industrial physicality of places such as this. Additionally, many aspects of this property reflect an age when industrial sites were framed within buildings that paid greater attention to design and detail than they do today. Decorative tiles, lighting fixtures, and other adornments tell an important lesson of how culture embraced technology. Many significant architectural, engineering, and design elements of the existing structures are important parts of the redevelopment of the site, and we believe will play an essential role in the differentiation, marketing, and exuberance for

this property in its new use. We are confident that preservation will play an important and necessary role in the success of this project.

Therefore, while we recognize that redevelopment of the site and its transformation from a heavy industrial use requires significant removal of equipment and demolition of portions of the site, we also encourage the proponent to incorporate as much of the historic fabric into the project as possible. We understand that power plants in particular present unique challenges; structure and mechanical equipment can be integral to each other and the demolition of interior contents to provide available space for new uses may necessitate the loss of exterior walls. However, we also recognize that there are many instances where important, contributing structure can be saved for new uses. 17.1

We agree with the proponent that the most significant features of the site are within the three turbine halls and we greatly appreciate the proposal for their restoration and reuse. We strongly encourage and support the sensitive incorporation of the turbine halls into the project. Doing so not only would integrate the history of the site into the new development, but would salvage many interesting architectural features such as vibrant green tile, arched windows, and several pieces of historically significant machinery. This unique space could be the centerpiece of the development and create a sense of place for the site. We do feel, however, that if the turbine halls are the only buildings of the power plant to remain on the site and were to be engulfed by new development, their context would be lost.

Therefore, we encourage the proponent to rehabilitate the oldest building on the site, the c. 1898 masonry building beside the turbine halls, as well. This would retain visual continuity between the surviving structures and maintain the industrial context that makes this site unique from the exterior. We look forward to dialog with the proponent, review agencies, and the community about how these historic buildings can become an important part of the project and its success. 17.2

The Alliance also has concerns about the proposal to insert an interior street for vehicular traffic through the turbine hall. While we understand that site circulation is important, we are concerned that this intervention may have a significant adverse effect to the historic spaces, their visual continuity, and their use. We encourage the proponent to present more information about why this interior street is necessary and what impacts it will have across the site. Similarly, discussion of new penetrations into the walls of the turbine halls for new windows requires further discussion. With reopening of the windows of the clerestory monitor of the roof we feel there is opportunity to generate significant natural light without disruption of the character-defining tile walls. 17.3

We are encouraged in many ways by the initial proposal and the skilled team working on the project, including members with significant experience adapting industrial sites to modern uses. While we cannot fully embrace all aspects of the initial filing, we look

forward to engaging further as this project evolves. We are confident that our recommendations will be seriously considered and we will have opportunity to discuss them further.

Sincerely,



Greg Galer
Executive Director

CC:
Brona Simon, Massachusetts Historical Commission
Gregory Bialecki, Redgate
Albert Rex, MacRostie Historic Advisors
Elizabeth Grob, VHB

clf
conservation law foundation

For a thriving New England

CLF Massachusetts
62 Summer Street
Boston MA 02110
P: 617.350.0990
F: 617.350.4030
www.clf.org

July 7, 2017

Via email: alexander.strysky@state.ma.us

The Honorable Matthew A. Beaton
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Attn: MEPA Office, Alex Strysky
Boston, MA 02114

Subject: Comments on L Street Station Redevelopment Environmental Notification Form EEA# 15692

Dear Secretary Beaton:

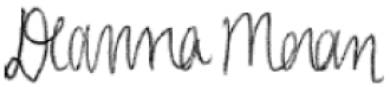
Conservation Law Foundation ("CLF") would like to submit brief comments at this stage concerning the L Street Station Redevelopment project at 776 Summer Street in South Boston. Generally, we are pleased that the proposed project appears to meet the standards of Chapter 91 and that the proponent is taking climate change into consideration for the design of the site. We do believe that the proponent could go further in making the waterfront open space a "world class public space" and should put more consideration into how this space will be accessed and activated. We look forward to seeing new iterations of the proposal in the subsequent permit processes that lie ahead. However, we have chosen to keep our comments brief at this time because we believe that review of the proposal at this stage is premature. The site is in a Designated Port Area ("DPA") and would require de-designation in order for the current proposal to be considered.

It is our understanding that the proponent has submitted a request to the Massachusetts Office of Coastal Zone Management ("CZM") for DPA boundary review with the intention of having the site de-designated. While we do not necessarily disagree with the proponent on the merits of their de-designation request, we are concerned that this process is moving forward prior to CZM rendering a decision on their request. We are also concerned that this request may make way for more site-by-site de-designation requests, which would create an undesirable process for evaluating non-maritime uses in DPAs and have a deleterious effect on this scare and non-renewable resource. 18.1

We will be submitting more in-depth comments to CZM outlining our concerns regarding DPA de-designation and our priorities for assessing alternative non-maritime uses in DPAs. At this time, we request that you delay your review of the Environmental Notification Form ("ENF") for the L Street Redevelopment project until CZM has rendered a decision on the boundary review.

Thank you for your consideration of these comments. Please contact me at dmoran@clf.org with any questions you may have.

Sincerely,



Deanna Moran
Director of Environmental Planning

July 7, 2017

Secretary of Energy and Environmental Affairs Matthew A. Beaton
Executive Office of Energy and Environmental Affairs (EEA)
Attn: MEPA Office, Alex Strysky
100 Cambridge Street, Suite 900
Boston MA 02114

Brian Golden, Director
Boston Planning and Development Agency
Boston City Hall
Boston, MA 02201

Re: EEA No. 15692, L Street Power Station Redevelopment, South Boston
ENF/Expanded PNF

Dear Secretary Beaton and Director Golden:

WalkBoston is pleased to see the proposal for a mixed use development f he rge outh oston waterfront site that will include the re use of the historically and architecturally interesting L Street Power Station. Putting this portion of the City back into a productive use that invites public access is a positive change for the City and for South Boston.

The overall site design will help to integrate this large parcel into the neighborhood, and create new opportunities for people to walk from East 1st Street to the waterfront and help to link he residential portions f outh oston to he ite hich as ng ut ff rom he ommunity y fences and other obstructions. The partial extension of the local street network onto the site and between and around new buildings proposed for the site seems appropriate in scale. With sidewalks that are sufficiently wide and landscaped, both community residents and people living on site will be served by the new connections.

Our comments below are focused on questions that we hope the proponent will respond to in subsequent filings about the project.

1. Waterside Pedestrian and Open Space Environment
We understand that the new dedicated harborside freight corridor that will connect Summer Street to Massport's Conley Terminal and remove heavy truck traffic from East 1st Street will provide very important, and long desired improvements to the South Boston neighborhood. But this shift will also present challenges; the new harborside route will place an access barrier and significant truck traffic (with its accompanying noise and air pollution) between the development site's primary open space and the harbor.

19.1

We urge the developer to consider creative ways to mitigate the truck route's impact on the open space. This could include grade changes that place the open space higher than the truck route (Figure 3.5b may hint at this); ndscaping hat oth asks nd rames iews, soundscapes to mask truck noise, and the addition of viewing platforms that allow open space users to gain unimpeded views of the water. There may also be ways to capitalize on the site's

industrial ast nd n going use through interpretive elements. WalkBoston is concerned that without such special treatment the open space will not be very attractive to the public.

If ossible, he roponent ight lso xplore with Massport whether it would be possible to schedule truck traffic so that is interferes less with daytime and weekend use of the open space.

19.1

2. Encouragement of walking and walking transit trips
   At the direction of the City, the proponent has used South Boston adjusted trip generation rates to develop trip tables for walking/biking, transit and vehicles. However, the site is at a significant distance from other land uses that would seem to justify such significant numbers of walking trips, and to suffer from overused bus lines and significant distances to the Red and Silver Lines. Figure 5 1 illustrate the 5 and 10 minute walking zones, neither of which include a great many retail, job and civic land ses.

   We urge the proponent to develop mitigation measures to make the development a more realistically ixed ode roject. hese ould clude uch hings s: ubsidies o he BTA o provide more frequent bus service, or creation or partnering with other South Boston developments to provide shuttle services to the Silver and/or Red Lines.

19.2

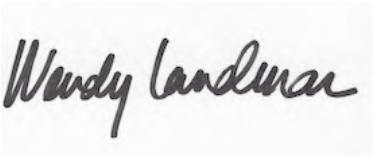
3. Bicycle acilities
   The proponent mentions that Boston has flagged both East 1st Street and Summer Street for protected bicycle facilities, however Figure 3.5a shows an on street bike lane.

   We urge the proponent to work with the City, and perhaps provide funding for, separated bicycle facilities on both East 1st Street and Summer Street. The distance of the site from transit and a mix of retail, job and civic facilities will make bicycling a more likely mode of off site trips than walking.

19.3

We look forward to working with the City and Redgate as the project plans are developed in greater detail.

Sincerely,



Wendy Landman
Executive Director

Cc Ralph Cox, Greg Bialecki, Megha Vadula, Redgate
Elizabeth Grob, VHB

365 West Broadway
South Boston, MA 02127
tel: 617.268.9610
fax: 617.268.4813

July 7, 2017

Matthew Beaton, Secretary
Executive Office of Energy and Environmental Affairs (EEA)
Attn: MEPA Office, Alexander Strysky
100 Cambridge Street, Suite 900
Boston, MA 02114
Re: 776 Summer Street, South Boston (L Street Station Redevelopment)

Dear Secretary Beaton:

Please accept this comment letter regarding the proposal to redevelop the former Boston Edison plant at 776 Summer Street in South Boston. I am a South Boston resident who lives within .2 miles of the site, and I am the Executive Director of the South Boston Neighborhood Development Corporation, a non profit developer of affordable housing .

South Boston has seen dramatic changes over the past several years, as development across the neighborhood has displaced low and moderate income residents. As a long-tem resident of the community, I have seen many neighbors forced to move because of high rents. I have serious concerns about the negative impacts of the proposed development.

**Housing units**:

I personally attended several community meetings for this project. **At no time did the proponent discuss a density of 1500 units and only 900 parking spaces on this site.** Affordable housing should be a much higher percentage of the total development to mitigate the impact on the neighborhood. Both lower income and middle income residents are being displaced in South Boston because of rapidly increasing real estate prices. The City's minimum 13% affordability on this site is not adequate to address this critical neighborhood need.

20.1

**Transportation:**

The proposed number of units will place a huge burden on existing roadways and public transportation. Without sufficient parking on-site, the project residents will park on the existing over-crowded streets. It is unrealistic for the developer to suggest that the traffic and parking challenges will be resolved all by themselves, because people will change their driving habits. That is not a transportation plan! Without adequate public transportation, it is simply not possible for this site to support the proposed number of units. The developer is asking for variances, but proposing little public benefit.

The site has very limited public transportation and is served by only 2 public roads. South Boston is a small peninsula. Because it is surrounded by water, vehicle access is limited. The proposed development would significantly increase the traffic burden on the existing roadways. The developer offers no mitigation for this increase and offers no plan to pay for improved public transportation. Over the past decade, significant increases in development and in the population of the South Boston neighborhood have resulted in the over-burdening the public transportation infrastructure. 20.2

This area of South Boston is located 2 miles from the Red Line and is served only by MBTA buses. While the developer claims proximity to public transportation, that statement is simply incorrect! Bus service is inadequate now, with buses so over-crowded that passengers are stranded every day. The #7 bus route to South Station does not operate on Sundays. The MBTA has very clearly stated to the City of Boston that it does not have the resources to increase service. Therefore, the developer must pay for transportation improvements.

**Open Space:**

The developer proposes a 1- acre park on the site, much too small for the proposed 1500 housing units, hotel and commercial space. The park should be increased in size to 2 acres and should connect pedestrian access to the nearby Massport Thomas Butler Park, on East First Street. While the proposed development will enable public access to the waterfront, the size of the development will continue to wall-off the views to the water from the existing neighborhood, offering little improvement over current conditions. 20.3

Thank you for this opportunity to comment on the proposed L Street Station Redevelopment.

Best Regards,



Donna Brown

Executive Director

**Strysky, Alexander (EEA)**

**From:** Eileen Smith <eileensmith776@yahoo.com>
**Sent:** Friday, July 07, 2017 5:07 PM
**To:** Strysky, Alexander (EEA)
**Cc:** Tim Czerwienski
**Subject:** Edison - L Street Station Redvelopment, South Boston, MEEA No. 15692

July 7, 2017
Alex Strysky
MEPA Office, Mass Dept of Energy & Environmental Affairs

RE: Edison - L. Street Station Redevelopment, South Boston, EEA No. 15692

Dear Mr. Strysky,

In no particular order I would like to make comments as requested by you on June 21, 2017. Never having participated in an IAG I am hopeful that the following suggestions, concerns, needs and wants are workable interests for Redgate and Hilco and to the future of our South Boston community. The community as a whole must be continuously involved and informed with public meetings as to the development stages, plans and potential problems.

The construction/decommission period of 10-15 years will impact City Point for years with additional concerns; traffic, lack of public transportation, noise, dirt and pollution. Measurements must be taken ensuring quality of life. Equally concerning is the Massport/Conley terminal expansion in a densely populated residential area. The added planes coming and going to Logan airport are now flying over our residential areas to runways. Currently, East Broadway (between L&P Streets) has over **225** buses traveling on our streets on a daily basis. With the Edison residential proposal, there must be a plan which provides for additional transportation and the elimination of added buses and or transportation services to the overwhelmed E. Broadway Street. The noise, dirt, traffic, planes and pollution are already at unacceptable levels. Previously, as suggested by members of the IAG, a noise monitoring system should be installed before the initiation of the Edison development. I hope you will support this issue. 21.1

Equally concerning, increased truck traffic, noise and pollution utilizing the Tommy Butler Bridge. We have thousands of trucks travel our streets every day with the possibility of Boston Harbor dredging to facilitate bigger container ships. Traffic,

noise, pollution and parking problems are continuously increasing without a definitive plan and must be addressed before this process proceeds. These environmental issues are once again in a densely populated residential area. Removal of hazardous materials and air quality changes should be publicly posted.

**The proposed parking accommodations for the Edison are unrealistic, appalling and unacceptable**. The Edison proposal includes fifteen hundred eighty eight (1588) residential units (no detail given as to how many bedrooms in each unit), office space, retail space and a hotel with a projected total of 987 parking spaces. On this issue alone the project should be denied as inadequate. Initial discussions included sufficient parking with the potential of residential parking. Community benefit discussions have included the possibility of residential parking as well as access during snow emergency postings for all South Boston residents. The Edison project has to increase their parking space numbers or change their development proposal to be acceptable and equal to the number of residential units. Parking in South Boston is forcing residents to leave the City and affecting quality of life. Parking on private property with such limited access should be structured in a way to mandate parking on Edison land only. Said land is private and residents should have special parking permits reflecting Edison residency and be allowed two hour local parking only permit. This should help satisfy the discussions regarding new residents using alternative transportation. This will guarantee that what City Point currently has for parking and a lack thereof, will not be eliminated to accommodate Edison residents. Otherwise, as discussed, new residents will be ride sharing, biking, skate boarding and should be willing to sign parking permit waivers. I did not see the designated amount of bike parking spaces. Hopefully, these spaces are not included in the 987 allotted parking spaces. There is a greater need for public and community parking than community arts. 21.2

The proposed towers should be lowered and not have offensive lighting that will affect the surrounding residential areas. These proposed high rise buildings are not welcoming to the current residential community. 21.3

I believe that preservation of the buildings histories and structures are relevant. The Edison electric Illuminating Company of Boston is the only plant of its kind in existence dating back to 1886. There is talk of saving the turbine halls which is appreciated. The windows on the L street side of

property should also be saved. It would be helpful to have a complete tour (hard hat style) of all the buildings to review their historical relevance. 21.4

The suggested architecture shown for the new eight (8) building developments is disturbing and has no relation or historical significance to the homes in the City Point area. This will have to be discussed separately. Said proposal does not meet the standards and historical design of the neighborhood. Proposals do not include two and three family homes of which this neighborhood reflects. Proposals do not specify low income housing and or availability of over 55 housing. Development requires further clarification. 21.5

The private development of the Edison is promising access to newly created streets that will remain public. Does this mean that the City will not be responsible for services such a garbage removal, snow removal, police and fire response, ticketing and towing? Therefore, who will be allowed to park on these streets? 21.6

I look forward to working with you regarding the Edison development project. It would be helpful for the IAG members to have a 24 hour contact in place for all matters.

Thank you,

Eileen Smith

## Strysky, Alexander (EEA)

**From:** jcoveno <jcoveno@yahoo.com>
**Sent:** Thursday, July 06, 2017 1:44 PM
**To:** Strysky, Alexander (EEA)
**Subject:** 776 summer street comments

Hello Alexander,

I am writting with a concern and request for action on the part of the contractor/developer for the above mentioned project.

The existing structure (Edison Plant) and its solid fencing along 1st have created an important accoustical buffer for the neighborhood. This buffer blocks a signifigant amount of the noise coming across the channel from the both the concrete batch plant, the engine noises and general amplified music/announcemnts created by the multiple cruise ships and maritime traffic in the channel.

The current plans remove several structures and all the solid fencing along 1st street.....Additionally the design includes the creation of two (2) streets that run perpendicular to the channel. These new street corridors while nice from a traffic and pedestrial stand point, do create massive corridors and quite possibbly amplifiers of the noise generated across the channel. This needs to be fully accoustically modeled. The modeling should include not only the current maritime traffic and vehicles but also the massport projected cruise traffic and frieght traffic following both terminals expansions.

This needs to be done so that the residents of this area can have reasonable assurance that the final buildout of both the edison plant and massports cruise/ frieght terminals noise is not made worse in the area by the creation of the accoustical amplifacation corridors the edison plant project will create. 22.1

I would also request that the report and models contain real data, garnered by the placement of several recording noise meters placed in the nieghborhood for a two - three month period... this will accurately establish the current ambiant noise levels Thus allowing for true noise projections in the future.

There is no dought that the Edison project will create a signifigant accoustical impact, these models will determine just what that impact is and if mitigation or relocation of the structures would be required to mitigate this impact.... Or it could prove that the project as designed will make the accoustics better in the nieghborhood.

Please consider this proposal for inclusionin the ENF order of conditions.

Jim Coveno

151 P Street
Unit #1
Boston, Ma. 02127

(67) 875 - 6673

Sent from my Galaxy Tab® E

# EPNF Comment Letters

**BOSTON REDEVELOPMENT AUTHORITY**
**D/B/A BOSTON PLANNING & DEVELOPMENT AGENCY**

# SCOPING DETERMINATION
# 776 SUMMER STREET

## SUBMISSION REQUIREMENTS
## FOR DRAFT PROJECT IMPACT REPORT ("DPIR")

| | |
|---|---|
| **PROPOSED PROJECT:** | 776 SUMMER STREET |
| **PROJECT SITE:** | 15 ACRE SITE BOUNDED BY SUMMER STREET, EAST FIRST STREET, MBTA LAND, AND THE RESERVED CHANNEL, SOUTH BOSTON |
| **PROPONENT:** | HRP SUMMER STREET LLC |
| **DATE:** | JANUARY 12, 2018 |

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The Boston Redevelopment Authority ("BRA"), d/b/a the Boston Planning & Development Agency ("BPDA") is issuing this Scoping Determination pursuant to Section 80B-5 of the Boston Zoning Code ("Code"), in response to a Project Notification Form ("PNF"), which HRP Summer Street LLC (the "Proponent") filed on May 15, 2017 for the proposed 776 Summer Street project (the "Proposed Project"). Notice of the receipt by the BPDA of the PNF was published in the Boston Herald on May 15, 2017, which initiated a public comment period with a closing date of June 30, 2017. Pursuant to Section 80A-2 of the Code, the PNF was sent to the City's public agencies/departments and elected officials on May 15, 2017. Hard copies of the PNF were also sent to all of the Impact Advisory Group ("IAG") members. The initial public comment period was subsequently extended until August 4, 2017, through mutual consent between the BPDA and the Proponent to allow more time for the general public to provide comments and feedback.

On April 24, 2017, the Proponent filed a Letter of Intent ("LOI") in accordance with the Mayor's Executive Order Regarding Provision of Mitigation by Development Projects in Boston for the redevelopment of the former Boston Edison power plant site at Summer Street and East First Street in the South Boston neighborhood of Boston.

On April 25, 2017, letters soliciting IAG nominations for the Proposed Project were delivered to City Councilor Bill Linehan, State Senator Linda Dorcena Forry, and State

Representative Nick Collins. Additional letters seeking recommendations were delivered to the Mayor's Office of Neighborhood Services ("MONS") and the City Councilors At Large.

Fifteen (15) individuals were nominated and appointed to the IAG and have been invited to participate in advising BPDA staff on the Proposed Project's possible impacts and appropriate mitigation.

The following is a list of the IAG members:

1. David Gifford
2. Nancy Pickup
3. James Coveno
4. Sean Quirk
5. Dave Nagle
6. Christopher Soules
7. John Bennett
8. Eileen Smith
9. Joanne McDevitt
10. David Biele
11. Jerry Tracey
12. Allison Drescher
13. Anna White
14. Robert Allison
15. Joe Lee

The BPDA appreciates the efforts of the IAG and the members should be applauded for their commitment to the review of the Proposed Project.

Pursuant to Section 80B5.3 of the Code, a Scoping Session was held on May 31, 2017 with the City of Boston's public agencies/departments at which time the Proposed Project was reviewed and discussed. IAG members were also invited to attend the Scoping Session.

BPDA-sponsored publicly advertised meetings were conducted on June 7, 2017; June 21, 2017; and July 24, 2017 at the Tynan School located at 650 East Fourth Street in South Boston. IAG meetings were held on June 12, 2017 at 776 Summer Street and on July 31, 2017 at the South Boston branch of the Boston Public Library.

Included in the Scoping Determination are written comments that were received by the BPDA in response to the PNF, from BPDA staff, public agencies/departments, elected officials, the general public, and IAG members. All of which are included in **Appendices A, B, and C and must be answered in their entirety.**

**Appendix A** includes written comments from BPDA staff, public agencies/departments, and elected officials.

Specifically, they are:

- BPDA Transportation, Urban Design, and Planning Departments
- BPDA Climate Change and Environmental Planning Department
- Carrie Marsh: Boston Parks and Recreation Department
- John P. Sullivan: Boston Water and Sewer Commission
- Todd Satter: Boston Landmarks Commission
- Congressman Stephen F. Lynch
- State Senator Linda Dorcena Forry and State Representative Nick Collins
- Boston City Councilor Michael F. Flaherty

Public comments received by the BPDA during the comment period are included in **Appendix B.**

Impact Advisory Group ("IAG") member comments received by the BPDA during the comment period are included in **Appendix C.**

The Scoping Determination requests information that the BPDA requires for its review of the Proposed Project in connection with Article 80 of the Code, Development Review and Approval, and other applicable sections of the Code.

In addition to the specific submission requirements outlined in the sections below, the following points are highlighted for additional emphasis and consideration:

- Throughout this initial phase of review, the Proponent has taken steps to meet with community members, elected officials, abutters, and various City agencies/departments. Regular conversations and meetings with all interested parties must continue through the duration of the public review process, ensuring that what is presented in the DPIR is beneficial to the respective neighborhood and the City of Boston as a whole.

- It is clear in reading through the comment letters that the Proposed Project has simultaneously generated excitement and concern. While many of the letters show desire to see the redevelopment of the former Edison plan site, numerous letters request that additional studies occur in order to evaluate the potential impacts of a project of this magnitude, as well as the potential benefits. The BPDA encourages the Proponent to continue to work with those parties, including the IAG and community members, who have expressed concern, in order to minimize and mitigate the Proposed Project's impacts.

- The general public along with the IAG have expressed concerns with respect to the overall density of the project and the height of some of the buildings being proposed. The BPDA encourages the Proponent to continue to work with the community to address the concerns regarding density and the height of the overall project.

- During the initial review process, residents, elected officials, and other stakeholders raised concerns about the Proposed Project's effect on the continued viability of the Conley Terminal and Raymond Flynn Cruiseport. The BPDA shares these concerns, and encourages the Proponent to continue to work with the various port stakeholders and to keep the long-term sustainability of the port in mind as the design of the Proposed Project evolves.

- The BPDA encourages the Proponent to continue to work with the Boston Police Department ("BPD") and Boston Fire Department ("BFD") to review and address the community's concerns regarding the impacts that this proposal will have on the existing capacity of these departments' facilities and staff, should a project move forward.

- The BPDA encourages the Proponent to provide a range of rental and homeownership opportunities, including income-restricted units of both types. The Proponent should look at ways in which the project can exceed the Inclusionary Development Policy, perhaps through the provision of additional income restricted units at a higher income level, so as to meet the needs of middle-income households who are having a difficulty finding housing in the South Boston neighborhood.

- The Proponent must work with the Boston Transportation Department ("BTD") to address concerns regarding site access, circulation of traffic in and around the Proposed Project site, potential traffic impacts, and appropriate mitigation throughout South Boston.

- The Proponent must work with the Boston Parks and Recreation Department ("BPRD") to address anticipated impacts on South Boston's public parks and open spaces. In addition to working with BPRD, the BPDA encourages the Proponent to continue to engage the IAG and community to help mitigate these impacts and provide new public open space that addresses the needs and goals of the BPRD and overall community.

- As stated in the PNF, the Proponent intends to provide a total of approximately 987 vehicle parking spaces. A better understanding of how these spaces will be allocated must be provided in the DPIR. The Proponent should promote alternative modes of transit to new occupants and visitors to the site.

- All development projects have construction impacts. As with any urban development, there needs to be a balance of construction related inconveniences with the daily activities that will continue to occur adjacent to the Proposed Project site. A detailed approach to the construction management must be included in the DPIR.

- The Proponent must take into account all BPDA approved and under review proposals in the South Boston and South Boston Waterfront neighborhoods, scheduled infrastructure improvements in the general area, and nearby large scale developments in the City of Boston while conducting the DPIR's required studies (transportation, infrastructure, open space, etc.).

- The Proponent must clearly describe the overall demolition and phasing of the Proposed Project. The buildings to be demolished and constructed in each phase of the Proposed Project should be specified along with an anticipated timeline for each phase. The BPDA acknowledges that project timelines are subject to change due to market conditions and other factors.

## I. PROJECT SITE

The site of the Proposed Project is an approximately 15 acre site bound by the Reserved Channel to the north; land owned by the Massachusetts Port Authority (MassPort) and the Massachusetts Bay Transportation Authority (MBTA) to the east; East First Street to the south; and Summer Street to the west (the "Project Site"). The site currently houses the former Boston Edison L Street Power Station, consisting of several buildings of various ages, ranging in height from one (1) story to 330 feet.

## II. PROJECT DESCRIPTION

The Proposed Project, as described in the PNF, consists of 2.1 million square feet of development, including 1.5 million square feet of residential use (totaling approximately 1,588 units), 339,639 square feet of office use, 68,077 of retail space, and a 150-room hotel. Approximately 987 parking spaces will be provided in several parking structures to support the Proposed Project, with the potential for some on-street parking. The Proponent seeks to retain and rehabilitate the existing historic turbine halls one through three that run the length of the Project Site, adapting them for retail, arts, and cultural uses. The Proponent also intends to preserve some equipment associated with the site's historical energy production and industrial uses.

The Proposed Project includes several outdoor public spaces totaling 104,500 square feet, including 1.15 acres of open space along the waterfront. The Proponent seeks to expand

the existing street grid by extending the east-west Elkins Street and the north-south M Street into the Project Site. The Proposed Project will also create a new shared street on the north edge of the Project Site and two pedestrian-only streets running north-south and linking East First Street to the waterfront. This street network will divide the Proposed Project into eight (8) development blocks. Building heights will range from 60 feet to 220 feet, with taller buildings being located along Summer Street and the interior of the site, and shorter buildings along East First Street. Active ground floor uses will be located along Summer Street, in the turbine hall buildings, and in the interior of the site. The hotel and office uses will also be confined to the interior of the site.

**III. PREAMBLE**

The Proposed Project is being reviewed pursuant to Article 80, Development Review and Approval, which sets forth a comprehensive procedure for project review of the following components: transportation, environmental protection, urban design, historic resources, infrastructure systems, site plan, tidelands, and Development Impact Project applicability. The Proponent is required to prepare and submit to the BPDA a Draft Project Impact Report ("DPIR") that meets the requirements of the Scoping Determination by detailing the Proposed Project's impacts and proposed measures to mitigate, limit or minimize such impacts. The DPIR shall contain the information necessary to meet the specifications of Section 80B-3 (Scope of Large Project Review; Content of Reports) and Section 80B-4 (Standards for Large Project Review Approval), as required by the Scoping Determination. After submitting the DPIR, the Proponent shall publish notice of such submittal as required by Section 80A-2. Pursuant to Section 80B-4(c) (i) (3), the BPDA shall issue a written Preliminary Adequacy Determination ("PAD") within ninety (90) days. Public comments, including the comments of public agencies, shall be transmitted in writing to the BPDA no later than fifteen (15) days prior to the date by which the BPDA must issue its PAD. The PAD shall indicate the additional steps, if any, necessary for the Proponent to satisfy the requirements of the Scoping Determination. If the BPDA determines that the DPIR adequately describes the Proposed Project's impacts and, if appropriate, propose measures to mitigate, limit or minimize such impacts, the PAD will announce such a determination and that the requirements of further review are waived pursuant to Section 80B-5.4(c) (iv). Section 80B-6 requires the Director of the BPDA to issue a Certification of Compliance indicating the successful completion of the Article 80 development review requirements before the Commissioner of Inspectional Services can issue any building permit for the Proposed Project.

**IV. REVIEW/SUBMISSION REQUIREMENTS**

In addition to full-size scale drawings, ten (10) copies of a bound booklet and an electronic copy (PDF format) containing all submission materials reduced to size 8-1/2" x 11", except where otherwise specified, are required. The booklet should be printed on both sides of the page. Bound booklets should be mailed directly to all of the IAG members. A copy of

this Scoping Determination should be included in the booklet for reference. The electronic copy should be submitted to the BPDA via the following website: https://attachments.bostonredevelopmentauthority.org/

## A. General Information

1. Applicant/Proponent Information

   a. Development Team
      (1) Names
         (a) Proponent (including description of development entity and type of corporation, and the principals thereof)
         (b) Attorney
         (c) Project consultants and architect(s)
      (2) Business address, telephone number, FAX number and e-mail, where available for each
      (3) Designated contact person for each

   SD.1

   b. Legal Information
      (1) Legal judgements or actions pending concerning the Proposed Project
      (2) History of tax arrears on property owned in Boston by Applicant
      (3) Evidence of site control over project area, including current ownership and purchase options, if any, for all parcels in the Proposed Project, all restrictive covenants and contractual restrictions affecting the Proponent's right or ability to accomplish the Proposed Project, and the nature of the agreements for securing parcels not owned by the Applicant.
      (4) Nature and extent of any and all public easements into, through, or surrounding the site.

   SD.2

2. Project Area

   a. An area map identifying the location of the Proposed Project
   b. Description of metes and bounds of project area or certified survey of the project area.
   c. Current zoning

   SD.3

3. Project Description and Alternatives

a. The DPIR shall contain a full description of the Proposed Project and its components, including its size, physical characteristics, development schedule, costs, and proposed uses. This section of the DPIR shall also present analysis of the development context of the Proposed Project. Appropriate site and building plans to clearly illustrate the Proposed Project shall be required. SD.4

b. A description of alternatives to the Proposed Project that were considered shall be presented and primary differences among the alternatives, particularly as they may affect environmental and traffic/transportation conditions, shall be discussed. SD.5

4. Public Benefits

a. Anticipated employment levels including the following:
   (1) Estimated number of construction jobs
   (2) Estimated number of permanent jobs
b. Current and/or future activities and programs which benefit the host neighborhood, adjacent neighborhoods of Boston and the city at large, such as; child care programs, scholarships, internships, elderly services, education and job training programs, public realm/infrastructure improvements, grant programs, etc.
c. Other public benefits, if any, to be provided. SD.6

5. Community Process

a. A list of meetings held and proposed with interested parties, including public agencies, abutters, elected officials, businesses, and community groups. SD.7

b. Names and addresses of project area owners, abutters, and any community or business groups which, in the opinion of the applicant, may be substantially interested in or affected by the Proposed Project. SD.8

**B. REGULATORY CONTROLS AND PERMITS**

An updated listing of all anticipated permits or approvals required from other municipal, state or federal agencies, including a proposed application schedule shall be included in the DPIR. SD.9

A statement on the applicability of the Massachusetts Environmental Policy Act ("MEPA") should be provided. If the Proposed Project is subject to MEPA, all required documentation should be provided to the BPDA, including, but not limited to, a copy of the Environmental SD.10

Notification Form, decisions of the Secretary of Environmental Affairs, and the proposed schedule for coordination with BPDA procedures. SD.10

**C. TRANSPORTATION COMPONENT**

In addition to the information required to meet the specifications of Section 80B-3 and Section 80B-4 of the Code, the Proponent must also refer to the BTD "Transportation Access Plan Guidelines" in preparing its studies.

The Proponent must address the comments outlined by the BPDA's Transportation, Urban Design and Planning Departments, included in **Appendix A**. SD.11

Proposed transportation network and infrastructure improvements/mitigation in the impacted area should also be listed and explained in this component.

**D. ENVIRONMENTAL PROTECTION COMPONENT**

The DPIR must address the comments of the BPDA Climate Change and Environmental Planning Department, included in **Appendix A** and must include the most up to date documents required by the Article 37/ Interagency Green Building Committee ("IGBC"). SD.12

The DPIR should include the most up to date Article 37 Interagency Green Building Committee ("IGBC") documentation.

<u>Shadow</u>

A shadow analysis shall be required for existing and build conditions for the hours 9:00 a.m., 12:00 noon, and 3:00 p.m. for the vernal equinox, summer solstice, autumnal equinox, and winter solstice and for 6:00 p.m. during the summer and autumn. It should be noted that due to time differences (daylight savings vs. standard), the autumnal equinox shadows would <u>not</u> be the same as the vernal equinox shadows and therefore separate shadow studies are required for the vernal and autumnal equinoxes.

Particular attention shall be given to existing or proposed public open spaces, plazas, park areas, sidewalks, pedestrian areas and walkways, adjacent to, and in the vicinity of the Proposed Project. Design or other mitigation measures to minimize or avoid any adverse shadow impact must be identified. SD.13

The above shadow analysis shall be required for any alternative to be studied in accordance with Scoping Determination as well as the preferred development option.

Wind

A qualitative analysis of the potential pedestrian level wind impacts shall be required for the DPIR. This analysis shall determine potential pedestrian level winds adjacent to and in the vicinity of the project site and shall identify any areas where wind velocities are expected to exceed acceptable levels, including the BPDA's guideline of an effective gust velocity of 31 mph not to be exceeded more than 1% of the time. SD.14

For areas where wind speeds are projected to exceed acceptable levels, measures to reduce wind speeds and to mitigate potential adverse impacts shall be identified.

Noise

The Proponent shall be required to conduct a noise assessment to analyze the potential noise impacts that may occur during construction and as well as during the subsequent occupancy/operation of the Proposed Project. The noise assessment shall include monitoring of the existing sound levels as well as calculations of future sound levels associated with the Proposed Project's mechanical equipment including, but not limited to exhaust fans, cooling towers and emergency generators. Additionally, an evaluation of the study area shall identify sensitive receptor locations, locations with outdoor activities, which may be sensitive to noise associated with the Proposed Project. SD.15

The Proponent shall be required to demonstrate that the Proposed Project complies with all applicable City of Boston, Massachusetts and Federal (including Housing and Urban Development noise standards) regulations and guidelines.

Solar Glare

An evaluation of potential solar glare impact on streets, public spaces shall not be required at this time, as the Proponent has stated that the building materials will include brick, painted brick, concrete, stone, wood, metal, tile, fiber cement clapboards and panels, glass, and metal canopies, and not a facade of reflective coated glass or other highly reflective materials. SD.16

Air Quality

The BPDA requires that project-induced impacts to ambient air quality be addressed. An air quality analysis shall be conducted to determine the impact of pollutant emissions from combustion and mobile source emissions generated by the Proposed Project. SD.17

The Proposed Project is expected to generate just over 10,000 total daily (24- hour) vehicle trips, 4,864 trips by public transportation and 8,780 trips by walking, biking or other

means. Accordingly, the Proponent shall be required to conduct a mesoscale analysis to determine whether and to what extent the Proposed Project will increase the amount of ozone precursors in the area, as well as to determine if the Proposed Project is consistent with the Massachusetts State Implementation Plan (SIP).

SD.17

The mesoscale analysis is required to ensure that the Proposed Project will not adversely impact the existing SIP, which tracks how the state intends to maintain compliance with National Ambient Air Quality Standards (NAAQS) or plans for reductions in emissions to attain compliance in the future.

The Proponent shall be required to conduct a microscale analysis to determine the effect of Proposed Project generated traffic on air quality. Additionally, the Proponent shall be required to conduct a cumulative impact analysis for comparison to the NAAQS for SO2, NOx, PM-10, and PM-2.5. This analysis shall address emissions from the Proposed Project's heating boilers, emergency generators, cooling towers, etc.

SD.18

Solid and Hazardous Wastes

Below are the seven reported releases of oil and/or hazardous materials regulated under the M.G.L. Chapter 21E, the Massachusetts Contingency Plan ("MCP"), together with the respective assigned Release Tracking Numbers (RTN):

RTN 3-12817: Sulfuric acid
RTN 3-13007: Fuel oil containing Total Petroleum Hydrocarbon (TPH), Extractable Petroleum Hydrocarbon (EPH), volatile organic compounds (VOC) and polycyclic aromatic hydrocarbons (PAH)
RTN 3-14575: Sulfuric acid
RTN 3-17596: Petroleum with EPH and Volatile Petroleum Hydrocarbons (VPH)
RTN 3-22165: Lubricating oil
RTN 3-26342: Sulfuric acid
RTN 3-28038: Weathered oil stains containing EPH and polychlorinated biphenyls (PCB)

SD.19

Per the PNF, all of the above listed releases have been addressed in compliance with the MCP. In order to achieve closure on the portion of the Proposed Project site associated with RTN 3-13007 an additional measure was required to maintain a Permanent Solution and a condition of No Significant Risk (pursuant to 310 CMR 40.0000). The remediation of the portion of the Proposed Project site associated with RTN 3-13007 required the inclusion of an Activity and Use Limitation ("AUL") restriction. The AUL allows for industrial and commercial uses, including but not limited to parking, port and maritime operations; manufacturing; assembling, storage; warehousing, and distribution uses and all activities customarily incidental thereto, and/or activities associated therewith, including but not limited to, pedestrian and vehicular traffic.

The following Activities and Uses are inconsistent with the maintenance of a Permanent Solution and a condition of No Significant Risk (pursuant to 310 CMR 40.0000) and thus are prohibited: residential dwellings; parks, playgrounds or other recreational areas; schools, inclusive of day care centers, kindergarten, or similar uses; gardening or other agricultural uses for the cultivation of edible plants destined for human consumption as defined by 310 CMR 40.0006.

The Proposed Project includes uses that have been deemed to be inconsistent with the AUL. A modification to the AUL to allow currently prohibited uses would require a determination of No Significant Risk (NSR) of harm to human health. Per, the MassDEP, additional remediation of the affected area shall be required to achieve an NSR. If capping the area of the contaminated soil is proposed to achieve an NSR, at least three feet of clean soil shall be placed over the contaminated area in unpaved areas, or one foot of clean soil in areas to be paved. Contaminated soil left in place under the cap must be separated from the clean material by a geotextile or other marker, and an AUL would be required to identify the maintenance requirements of the cap. Construction activities involving excavating or removing contaminated soil or groundwater must be conducted in accordance with the MCP, and would require additional sampling, analysis, and mitigation measures, such as dust control, all of which must be documented and submitted to the MassDEP. SD.19

The MassDEP also identified a release associated with a fuel tank (RTN 3-4519) that was located near the Proposed Project site's northeast property line. An AUL prohibiting residential dwellings; parks, playgrounds or other recreational areas; schools, inclusive of day care centers, kindergarten, or similar uses; gardening or other agricultural uses for the cultivation of edible plants destined for human consumption (as defined by 310 CMR 40.0006), was placed on the portion of land now owned by the Massachusetts Port Authority.

The Proponent shall be required to provide a comprehensive description of the proposed remediation strategy (designed to achieve a No Significant Risk (NSR) condition), including a Draft Soils Management Plan (or at a minimum generally describe how the excavation of the contaminated soils at the Proposed Project site will be conducted), so as to protect human health during the construction period. Additionally, the Proponent shall be required to provide a comprehensive description of the on-site storage, the process for determining the extent of the contamination, disposal options, measures to ensure the safe transfer of material to disposal sites and coordination with The Massachusetts Port Authority, so as to ensure that the AUL associated with RTN 3-4519 is properly maintained.

Sustainable Design

The Proponent must analyze project impacts on the surrounding environment that are attributable to forecasted climate conditions over the full duration of the expected life of the project. Utilizing the best available science, identify changes in the climate and environment and how such changes will affect the project's environmental impacts including the survivability, integrity and safety of the project and its inhabitants. Climate change conditions may include, but not be limited to, sea-level rise, higher maximum and mean temperatures, more frequent and longer extreme heat events, more frequent and longer droughts, more sever freezing rain and heavy rainfall events, and increased wind gusts. Include analysis of secondary and cascading impacts including more frequent and longer interruptions of utility services including electrical, gas, and telecommunication systems, and disruptions of transportation systems and networks.

SD.20

The Proponent must incorporate Climate Change Preparedness and Resiliency strategies into all relevant components of the project such as Transportation, Infrastructure Systems, Environmental Protection, Urban Design, Landscape, Sustainable Development, Historic Resources, and Tidelands.

The Proponent must submit an updated and final Climate Change Preparedness and Resiliency Checklist along with a written response to the IGBC. The Final Climate Change Preparedness and Resiliency Checklist and Response must be submitted in conjunction with the submittal of the Final Design and Approval package for review by the IGBC. No Final Design Approval/Article 80 documents shall be authorized by the BPDA until the final Climate Change Preparedness and Resiliency Checklist and Response have been reviewed by the IGBC.

SD.21

## E. URBAN DESIGN COMPONENT

In addition to the information required to meet the specifications of Section 80B-3 and Section 80B-4 of the Code, the Proponent must address the comments outlined by the BPDA's Transportation, Urban Design and Planning Departments, included in **Appendix A**.

SD.22

## F. INFRASTRUCTURE SYSTEMS COMPONENT

An infrastructure impact analysis must be performed. The Proponent should continue to work with the City of Boston Public Works Department ("PWD"), Boston Water and Sewer Commission ("BWSC"), and the Boston Groundwater Trust ("BGWT") (if applicable) on infrastructure impacts.

The standard scope for infrastructure analysis is outlined in the comment letter submitted by John P. Sullivan, Chief Engineer and Operations Officer, BWSC, submitted to the BPDA on June 30, 2017, included in **Appendix A**.

SD.23

Any proposed or anticipated infrastructure improvements/mitigation in and around the Project Site should also be listed and explained in this component. SD.23

## G. PUBLIC NOTICE

The Proponent will be responsible for preparing and publishing in one or more newspapers of general circulation in the City of Boston a public notice of the submission of the DPIR to the BPDA as required by Section 80A-2. This notice shall be published within five (5) days of the receipt of the DPIR by the BPDA. Therefore, public comments shall be transmitted to the BPDA within seventy five (75) days of the publication of the notice. A draft of the public notice must be submitted to the BPDA for review prior to publication. A sample of the public notice is attached as **Appendix D**. SD.24

Following publication of the public notice, the Proponent shall submit to the BPDA a copy of the published notice together with the date of publication.

## H. INCLUSIONARY DEVELOPMENT POLICY/AFFORDABLE HOUSING COMPONENT

The Proposed Project must comply with the Mayor's Executive Order regarding the Inclusionary Development Policy ("IDP") executed on December 10, 2015 ("IDP"). The DPIR should include the approximate number of IDP or income restricted units to be created, the incomes of the households, and the anticipated unit mix. SD.25

## I. ACCESSIBILITY CHECKLIST

As part of the DPIR, the Proponent must include an up to date and completed Article 80 Accessibility Checklist for the Proposed Project. An Accessibility Checklist is attached as **Appendix E**. SD.26

***APPENDIX A***

*COMMENTS FROM BPDA STAFF, PUBLIC AGENCIES/DEPARTMENTS AND ELECTED OFFICIALS*

**MEMORANDUM**

**TO:** Tim Czerwienski, Project Manager
**FROM:** BPDA Urban Design and Planning Staff
**SUBJECT:** 776 Summer Street Redevelopment
776 Summer Street, South Boston
Expanded Project Notification Form
Scoping Determination Comments

**BACKGROUND**

The site of the former Boston Edison L Street Power Station was purchased in 2016 by the team of Redgate Capital Partners and Hilco Real Estate, LLC for redevelopment. The site is 15 acres surrounded by the South Boston residential neighborhood, the Reserved Channel, the Summer/L Street corridor, and the Conley Freight Terminal. The site is cut off from the Reserve Channel by the newly complete Dedicated Freight Corridor that connects Summer Street to the Conley Freight Terminal. The site currently holds a number of former power plant buildings ranging from 1898 South Boston Station to the 1967 turbine facility in addition to open space and outbuildings/structures.

Beginning in January 2017 the Boston Planning & Development Agency (BPDA) conducted a planning process for the site. That process included public tours of one of the turbine halls on site and several public meetings, including two workshops. The Planning Process Report is included in the Expanded Project Notification Form (EPNF) dated May 2017.

The proposed project broadly comprises seven new blocks of development, retention of the three historic turbine buildings and open space along the Reserve Channel. M Street and Elkins Street are extended into the site as the major vehicular ways. The uses proposed include commercial, residential and some hotel/commercial and creative office use.

**TRANSPORTATION**

776 Summer Street is a significant redevelopment opportunity in the South Boston neighborhood. This site provides both an opportunity to connect the South Boston neighborhood to the Waterfront and Downtown and also enhance the neighborhood's transportation connectivity.

The BPDA's comments are a detailed analysis of technical issues, incorporate comments from community feedback, and provide context for the next round of public review. The sections are divided between Transportation/Site Access and Urban Design/Architecture; however, there are points of overlap between the two sections.

**A. <u>Transportation & Site Access</u>**

Transportation and site access will be critical factors for determining the future success of the 776 Summer Street project. Existing transportation networks in the South Boston neighborhood are burdened and site access is constrained by existing industrial and residential uses on either side. However, the site also represents the potential to improve neighborhood connectivity to Downtown Boston and the broader region while providing excellent site access.

The Transportation and Site Access chapter includes sections on modeling methodology, Transportation Demand Management (TDM), Site Access and Internal Circulation, Parking and Loading, Transit Network and Accommodations, and Bike Network and Accommodations. Additional transportation related elements such as pedestrian networks and building design features are included in the Urban Design and Architecture chapter.

**Modeling Methodology**

The proponent utilizes BTD mode splits for South Boston (BTD Area 13) for transportation trip generation analysis. This mode share assumption assumes a high vehicular mode split and low transit and walk/bike/other trips. SD.27

In addition to this analysis, the proponent should conduct a Transit Capacity Analysis with mode splits developed for the South Boston Waterfront District which present a more realistic mode split for a mixed-use development of this size in this area. The proponent should further analyze mode splits based on transportation enhancements that are anticipated with the development. This analysis should be prepared in concert with BPDA and BTD staff input. The goal of this analysis is to present realistic mode splits for the 776 Summer Street site. The analysis should also include Massport's new freight corridor traffic analysis. SD.28

**Transportation Demand Management Overview**

The proponent should create a TDM program for the 776 Summer Street development. The proponent should outline steps to improve the transportation network through a TDM system, including Alternative Mode Benefits, providing information on public transit and bike options, bike parking and sharing locations, electric vehicle parking, ridesharing options, and commitment to join the local Transportation Management Association. In addition to these elements, the proponent should consider the following options: SD.29

- Demand Reduction Programs
- Mobility microHUBs (Go Boston 2030)
- Designated Bus / Shuttle / Ride-share pick-up/drop-off areas
- Real-time transit and mobility information within buildings
- Consolidated bicycle parking, showers, and repair facilities

These elements will ensure the 776 Summer Street community has a comprehensive set of transportation options and will help to ease the burden on the South Boston and South Boston Waterfront transportation networks. SD.29

**Site Access & Internal Circulation**

The proponent outlines a comprehensive system of internal streets and improvements to surrounding streets which include smart signals, pedestrian and bicycle projects, and neighborhood mobility hubs. Additional key elements that should be considered include:

- Summer Street/L Street
    - The proponent should provide further details for the Summer Street/L Street corridor in the vicinity of the 776 Summer Street development site. This should include cross sections with street and sidewalk width. Proponent should consider the possibility of curb extensions on Summer Street to provide additional pedestrian sidewalk space.
    - Proponent should evaluate transit-only (inbound and outbound) lanes on Summer Street between East Second Street and the Reserved Channel. This will enable efficient bus operations and speed transit movement to Downtown Boston and Seaport District.
    - Proponent should evaluate providing resources for other transit priority infrastructure on Summer Street and L Street from the Boston Convention and Exhibition Center to L Street/Broadway. Additionally, the proponent should evaluate providing resources to design transit improvement lane striping for East Broadway (M Street to L Street) and L Street (East Broadway to East Second Street).
    - Proponent should consult with Go Boston 2030 about bike infrastructure on Summer Street.

SD.30

- East First Street
    - Proponent should provide details for plans for East First Street in the vicinity of the 776 Summer Street Site. This should include cross sections with street and sidewalk width. Proponent should consider the possibility of additional sidewalk space without reducing the road width, and consider strategies to do so in the area along East First Street where historic structures are proposed to be maintained, and the existing sidewalks will continue to be constricted.
    - Proponent should evaluate transit priority infrastructure on East First Street between Summer/L Streets and the City Point Terminal site. This could include signal enhancements, enhanced bus stations, and bus lanes.

SD.31

- Internal Site Streets

    - Proponent should provide details on both proposed plans and sections for streets that are internal to the site, including paving materials, curb lines, drop off/pick up locations, and pedestrian/bicycle accommodations.
    - Additionally, describe how bus or shuttle traffic will utilize the internal street network. Alternatively, describe how pedestrians will reach buses or shuttles if they are located on public roads adjacent to the site.

SD.32

- Dedicated Freight Corridor
    - The proponent should clarify access rights to the Dedicated Freight Corridor, including use and hours of operations, commercial vehicles, MBTA vehicles, and use by vehicles other than those affiliated with Conley Terminal.

SD.33

**Parking & Loading**

Parking and loading are key considerations for internal circulation, access to city streets, and pedestrian/bike networks. Key consideration should be given to the following items:

- Proponent should provide additional details on parking and loading access points. This should include details on parking garage entrances, loading dock points, and any other vehicular access points. Proponent should minimize parking and loading dock entrances by having consolidated loading and parking access where possible.

SD.34

- Proponent should provide a transportation analysis for parking ratios for office and residential uses. The South Boston neighborhood experiences peak congestion and additional parking will add to this congestion and pollution levels. In consideration of parking ratios, the proponent should consider alternative modes that will be supported on the site, such as car share, transit, Mobility microHUBs, enhanced pedestrian facilities, and bike networks and accommodations. The parking ratios that the proponent should consider should incorporate market research, transportation impact, and ratios currently found in the existing residential/commercial stock of the South Boston neighborhood and Seaport District.

SD.35

**Transit Network & Accommodations**

Transit will be a key element for the success of the 776 Summer Street site. Additionally, adequate transit upgrades have the potential to provide substantial benefits to the surrounding neighborhood. The transit section describes the key bus, shuttle, and water service to the site.

The transit improvements that should be evaluated for the 776 Summer Street program include:

- MBTA City Point Terminal - The City Point Bus Terminal is a key bus layover facility for five existing bus routes. The proponent should evaluate potential improvements to the terminal. Potential improvements include:
    - A new light bus maintenance garage, refueling facility, crew quarters, and overnight storage capacity. This will enable the MBTA to better service the South Boston neighborhood and 776 Summer Street development site.
    - Further improvements to the passenger waiting/drop off area currently in planning by the MBTA. This could include additional covered waiting areas, real-time arrival/departure information, public wifi, heating elements for use in winter, public art celebrating the area's history, and ticket vending machines.
    - Bus service access from the MassPort Dedicated Freight Corridor to the City Point Terminal. The proponent should evaluate this in coordination with the MBTA, MassDOT, and MassPort.
    - Long-term maintenance and funding for the City Point terminal, including upkeep of passenger areas and/or funding for MBTA operations at maintenance facilities.

SD.36

- Enhanced Bus Station on Summer Street (at East First Street) - The proponent should analyze a bi-directional enhanced bus station on Summer/East First Street with real time countdown clocks, covered waiting areas, public art, and sufficient space to allow for multiple buses to pick up passengers. This station should be designed to serve both MBTA and shuttle buses.

SD.37

- MBTA Bus Services - Efficient and frequent bus services to the site will enable residents, employees, and visitors to quickly access the development site. Additionally, expanded bus services will potentially allow additional transportation mobility options for South Boston residents. Key consideration should be given to the following concepts:
    - First Street Bus - Working with the MBTA, the proponent should evaluate an MBTA or shuttle route along First Street from the City Point Bus Terminal to Broadway Station with the potential to continue service along A Street to South Station or over the Traveler Street Bridge to the South End/Back Bay. The proponent should assume this service operates daily with peak and off peak service.
    - Silver Line 3 Extension - The proponent should evaluate extending the Silver Line 3 Bus service from South Station to City Point Bus Terminal via Summer Street. The proponent should assume this service operates daily with peak and off peak service.
    - MBTA 7 Bus - The MBTA 7 bus will be a key resource for the development site by allowing access from Downtown Boston and the Seaport District to the site. The proponent should:

SD.38

        - Consider providing resources for the MBTA 7 Bus to operate with extended Monday through Saturday hours.
        - Consider providing resources for Sunday services, operating 14 hours per day.
        - Consider routing options for the 7 Bus if the SL3 is extended to City Point Terminal.
    - The proponent should study the feasibility of a long-term operating subsidy with the MBTA regarding future bus service. This operating subsidy might also gain support from other users on the Summer Street corridor as development projects begin.

SD.38

- Bus Equipment - The proponent should evaluate the feasibility of purchasing additional bus equipment for the MBTA to operate between the 776 Summer Street development site, Downtown Boston, and other transit hubs. The technical specifications for this should be based on consultation with the City and MBTA.

SD.39

- Water Taxi Infrastructure - The proponent should carefully consider water transportation to the site. The proponent should present an analysis that determines demand, capital requirements, and operating support necessary for water transportation to the site.

SD.40

**Bicycle Network & Accommodations**

Proper bike infrastructure will enable residents, employees, and visitors to access the site by bicycle. This will enable users to have access to an active transportation mode that is safe, reliable, and convenient. Key elements for consideration include:

- Proponent should carefully consider Go Boston 2030 bike plans and guidelines and show how these specifically impact the project.
- Proponent should have bike parking for each unit and sufficient bike parking for employees and visitors on the site that are in excess of existing BTD minimums.
- Carefully consider bike connections from Summer Street to Butler Park. This bike connection will be a critical element in allowing bike connections from Castle Island/South Boston to Downtown Boston. Access should be explored across the proponent's site rather than East First Street.

SD.41

**Transportation Financing**

The proponent should consider innovative financing options for transportation-related improvements. Depending on the scale of transportation improvements, the federal government and infrastructure investment firms offer transportation financing options.

## B. Urban Design & Architecture

The opportunity to bring a formerly industrial waterfront site, now cut off from the water by development, into the vital neighborhood of South Boston is an extraordinary one that deserves thoughtful questions, planning, and review. The opportunity to address the project at an early stage of development is invaluable. Urban Design and Architecture comments generally engage the proponents' project while asking for more detail about phasing, landscape, use, and massing. The BCDC voted review and saw a presentation at their meeting on June 6, 2017. Minutes from that portion of the meeting are excerpted at the end of this document.

### Project Phasing & Zoning

As the project is seeking approval as a Planned Development Area Master Plan (PDA Master Plan), the DPIR should include information on proposed phasing and timeline for implementation. Consultation with BPDA staff is encouraged for this part of the DPIR. Also, note that the residential neighborhood of South Boston has recently gone through a community planning process and rezoning. While a PDA Master Plan will not fall under that zoning, awareness of the community process and explicit engagement with the concerns of the community that developed during that process will be constructive. SD.42

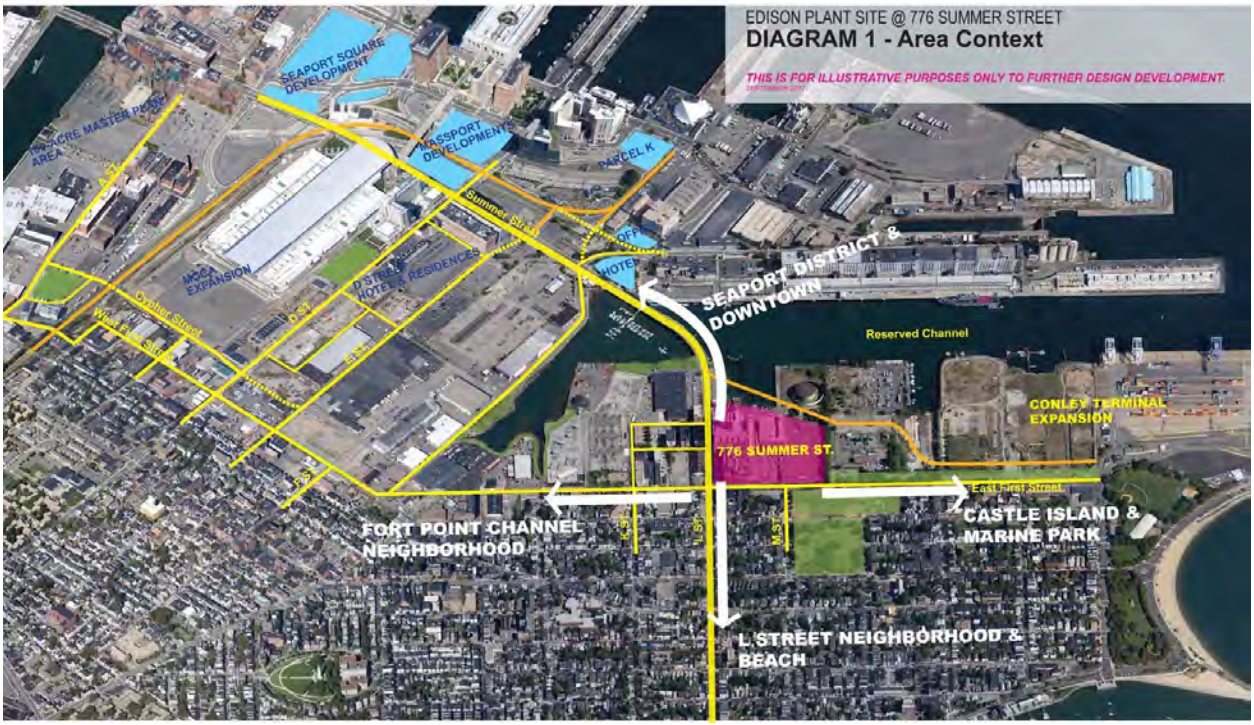
BPDA staff believe phasing is critical to this project, and a detailed phasing should be drafted for the DPIR including, but not limited to, preliminary timeline for demolition, construction, and discussion of intermediate steps. With a planned build out of ten or more years, there may be long periods of time after existing structures have been demolished but before new buildings are constructed. Will demolition also be strategically phased or done at one time? Is there an interim use strategy for temporarily vacant sites? Will they be planted or used to provide temporary amenity spaces for the neighborhood? Of particular interest is the timing of the opening of the turbine hall and waterfront, and auxiliary open spaces. While understanding the complexity of a project of this size, and the potential for future changes to the phasing, making the road and green space connections from the existing neighborhood to the waterfront is anticipated as one of the major contributions of the project and should be included in the DPIR. This will be key to the review of the PDA Master Plan. SD.43 SD.44

### Open Space Network & Connections Beyond the Site

The proponent has begun developing a series of open spaces on the site; it is critical that the project facilitate connections to the larger, existing open space network in both the South Boston Waterfront District and South Boston neighborhood. The site offers a unique opportunity to extend the Harborwalk south to open spaces in the South Boston

neighborhood that are currently cut off by the Conley Freight Terminal and the existing Edison Power Plant. Understanding how open space on the site can and will make meaningful connections to both adjacent and more distant opens spaces is needed. Butler Park, along East First Street, is instrumental in extending the Harborwalk from Marine Park past the Conley Terminal to Medal of Honor Park, the Christopher Lee Playground and City Point. Extending open space connections through the site to the proposed waterfront open space and beyond should be studied in the next phase of design. SD.45

See Diagram 1 Area Context for open space connectivity comments.

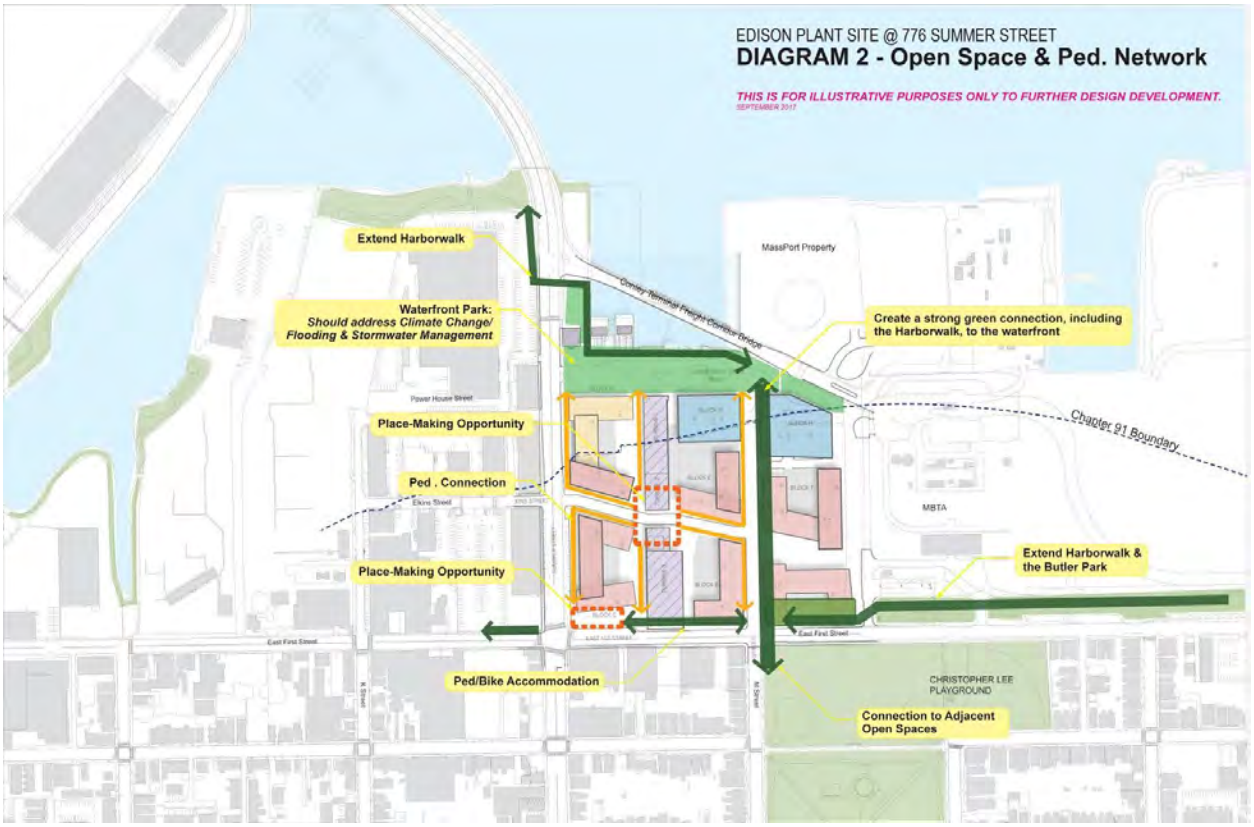



The BPDA recognizes that facilitating this open space link is challenging from both a resiliency and grading standpoint. Existing and proposed grading should be shown on the site plans to help explain the complex terrain and how the project proposes to work with it. SD.46 Consider how smart grading can be used to hide uses like parking or service, while also anticipating and addressing climate change. SD.47 Consider ways to mitigate or embrace the visual impact of the Dedicated Freight Corridor on the proposed waterside open space or to signal the presence of the public open space to areas of increasing density like the Raymond L. Flynn Marine Park. SD.48 Begin to define the programming uses for the open spaces, for example tot lots or dog parks that will serve the resident population on site, as well as in the surrounding neighborhood, including where these and other proposed program ideas might be located. Diagramming both the site and connection to the larger context will help clarify ideas around these issues. SD.49

In tandem with the development of a more detailed open space plan, the proponent should clarify the relationship of open space to Chapter 91 requirements and their specific SD.50

impact on the proposed project. As the Climate Ready Boston Report makes clear, this is an area that is highly vulnerable to environmental impacts. The next phase of Climate Ready neighborhood planning is currently getting underway in the South Boston waterfront, and the proponent should expect to collaborate with the Environment and BPDA staff, as well as their consultants, to develop strategies for anticipated coastal flooding. SD.50

See Diagram 2 Open Space & Ped. Network for comments on connectivity from the site. SD.51




Furthermore, the internal network of streets should also act as green infrastructure, connecting open spaces to each other, as well as performing a resiliency function. The introduction of a new shared street at the northern edge of the site should be considered to enhance access into the site near Powerhouse Street (between the proposed buildings and the open space along the channel). It could help to create an animated edge, provide placemaking amenities for local and future residents, and provide opportunities to service the commercial/retails needs proposed on the ground floors (not including loading). SD.52 SD.53

**Neighborhood Context and Scale**

Understanding the scale of the project and its relationship between the finer-grained density of the neighborhood to the south and the South Boston Waterfront District to the north, should be studied through three-dimensional massing and a physical model. This SD.54

will be one of the important ways that the BPDA and community will be able to understand and assess the proposed project in context.

Understanding the physical connections between the neighborhood and the development site will also include more development of the internal transportation network. This should include diagrammatic understanding of primary and service routes. Currently the block sizes proposed are quite large, essentially similarly sized superblocks. Look at breaking these down into smaller units of more varied size. Note that blocks in South Boston are typically shorter in the north south direction. Breaking up the site along Summer Street into three blocks might blend the development into the neighborhood more. It could also allow more opportunity for a varied and interesting streetscape along Summer Street. Orienting new buildings with the long face to the south would have some energy advantages that would be worth exploring. SD.55 SD.56

Currently there are only two vehicular roads shown in the development plans. This may not be sufficient for the build out proposed. Additional service streets or mixed service/non-automobile use streets would be a useful addition. More mixed use roadways would allow the site to be broken down into more legible units. Diagrams of proposed automobile, service, pedestrian, and bicycle routes through the site and to the waterfront should be included in the DPIR. While main routes from the neighborhood to the waterfront should be welcoming and direct, there should also be secondary routes that will take up some of the use pressure. SD.57

Provide information on how the location where Elkins Street passes through the turbine building was chosen and any other options. Is the connection to Elkins Street the most important element that should be controlling how the Summer Street length is broken up? Would Elkins Street would be more useful if it were to be extended through to connect directly with the City Point Bus Terminal (see diagram 3)? The exact location of this important east-west connection should be further considered to address all of these goals. SD.58

The proposed A block has important adjacencies to Butler Park, the City Point Bus station and a potential north-south MBTA bus connection to the Dedicated Freight Corridor. With the transit and open space potential at this site edge, this block may need to make accommodations for a number of different uses. The termination of the M Street extension is another location where it would be better to have a through connection. Would a connection to a limited use street at the south of the proposed waterfront open space be more useful? As a general strategy it will be important to see the project's internal streets contribute to through connections beyond the site and connect to the larger network of streets in the area, which is typical for the neighborhood. SD.59

Look at the street walls explicitly, not only along Summer and East First Streets, but also on the internal street of the site. This should be explored through digital and physical models. Currently the corner of Summer and East First Street is not well defined by buildings so the SD.60

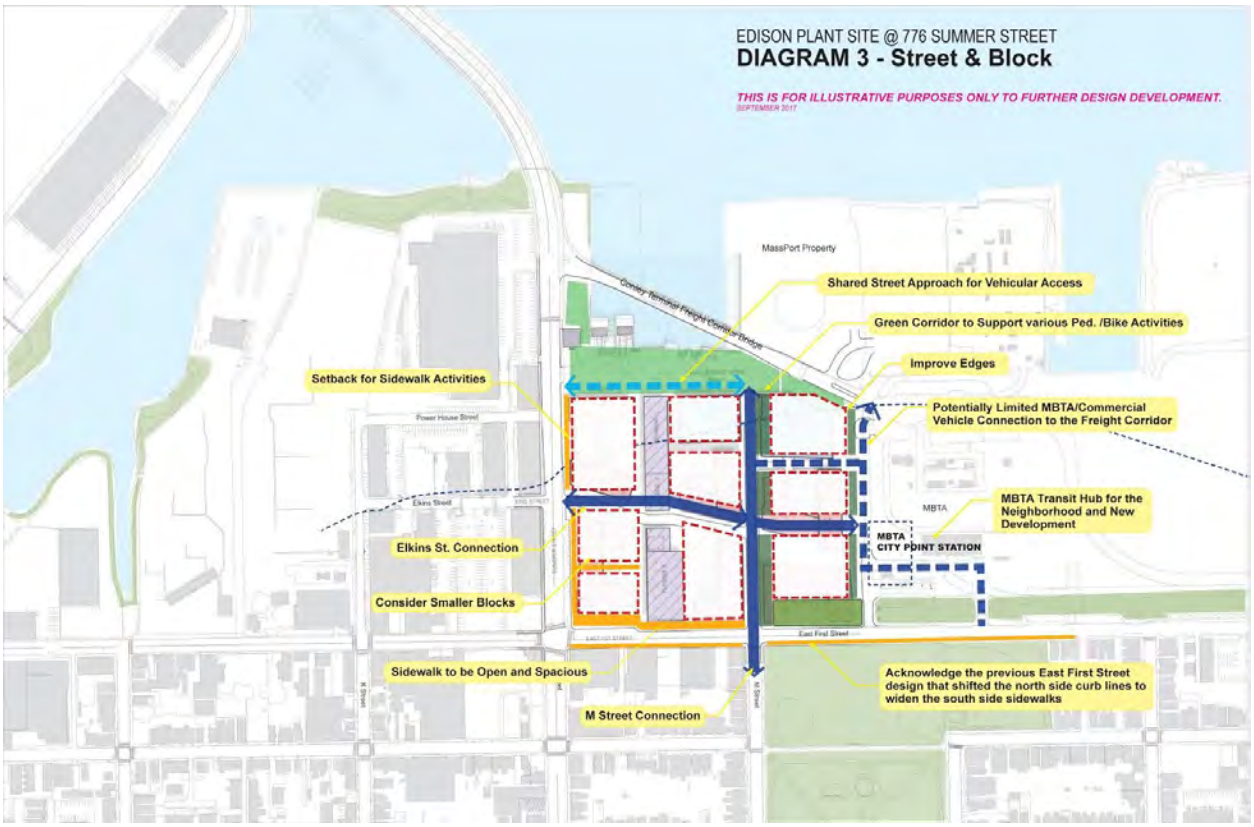
development has the potential to set up a relationship with the neighborhood that will guide future development. Likewise, the poorly defined edge on the north side of East First Street is likely to remain, so understanding how to bridge between a dense development and an open bus yard and terminal will require looking at the street wall in its context beyond the site. SD.60

The first block of Summer Street south of the Reserved Channel currently feels narrow and constrained. The removal of the 1960s era power plant building and the high brick wall along Summer Street has the potential to create a welcoming pedestrian connection between the South Boston Waterfront and the traditional South Boston Neighborhood.

In addition to the street walls of the buildings, the sidewalks are an important part of how the development bridges into the neighborhood. The Boston Complete Streets guidelines should be the basis for developing sidewalk design at the edges and within the site. Look to the newer areas along East First Street and how to tie into those to create a consistent street edge and tie into the systems that have been already created, as this is could be another desire line to the South Boston beaches and Castle Island. Comfortable sidewalks with trees and furnishing zones could go a long way to blending the edge of the proposed development. Is there a way that the idea of an Arts and Industry district can be carried into the edge condition? SD.61

The entrance off of Summer Street into the proposed waterfront open space needs to be open and welcoming to the general public. The proposed site plans show an idea about a wide opening to the site at that location; more development of the waterfront plan showing what might happen there is needed to understand if that really is an open and welcoming space. Likewise, what happens in the area between the small document building and the Dedicated Freight Corridor. There are significant grade changes there that could be used to make a special area along the Summer Street Bridge. SD.62

See Diagram 3 Street & Block for comments on layout. SD.63




**Architecture**

As noted above, at least one physical site model of the development area and context will be needed. We encourage an additional larger scale study model more closely showing the development area and immediate context to help explore ideas about massing and understand grade issues. Provide finer grain information about the site layout including diagrams of proposed retail frontage, building entrances and lobbies, subsurface parking entrances, and loading entrances. SD.64

Provide more information about the proposed retail mix. Is there enough neighborhood demand to support retail along Summer Street and in the turbine building or will this need to be destination retail? What studies have been done on the amount and type of retail and the type of demand? How will the retail support the Arts and Industry District idea? SD.65

Provide more information about the redevelopment of the turbine halls. While this is structured as the physical and conceptual center of the development, information on how to reuse this large building is still needed in the DPIR. See the comment section on phasing for questions about when in the development this piece will fit. Is there an alternative to saving all three turbine halls? For example, would removing the middle building offer more opportunity for east-west movement on the site and the possibility of a different kind of open space on the site (see Diagram 2)? Is there a specific subsidy in the pro-forma SD.66

required to finance the retention of the turbine halls? It appears that this opportunity to create an open space somewhere in the center of the turbine halls has been explored in figure 3.9b in the EPNF. A central open space could help open up the most densely built part of the site, contribute to the publicly oriented programming imagined for turbine hall, and allow for flexibility in locating the Elkins street extension. SD.66

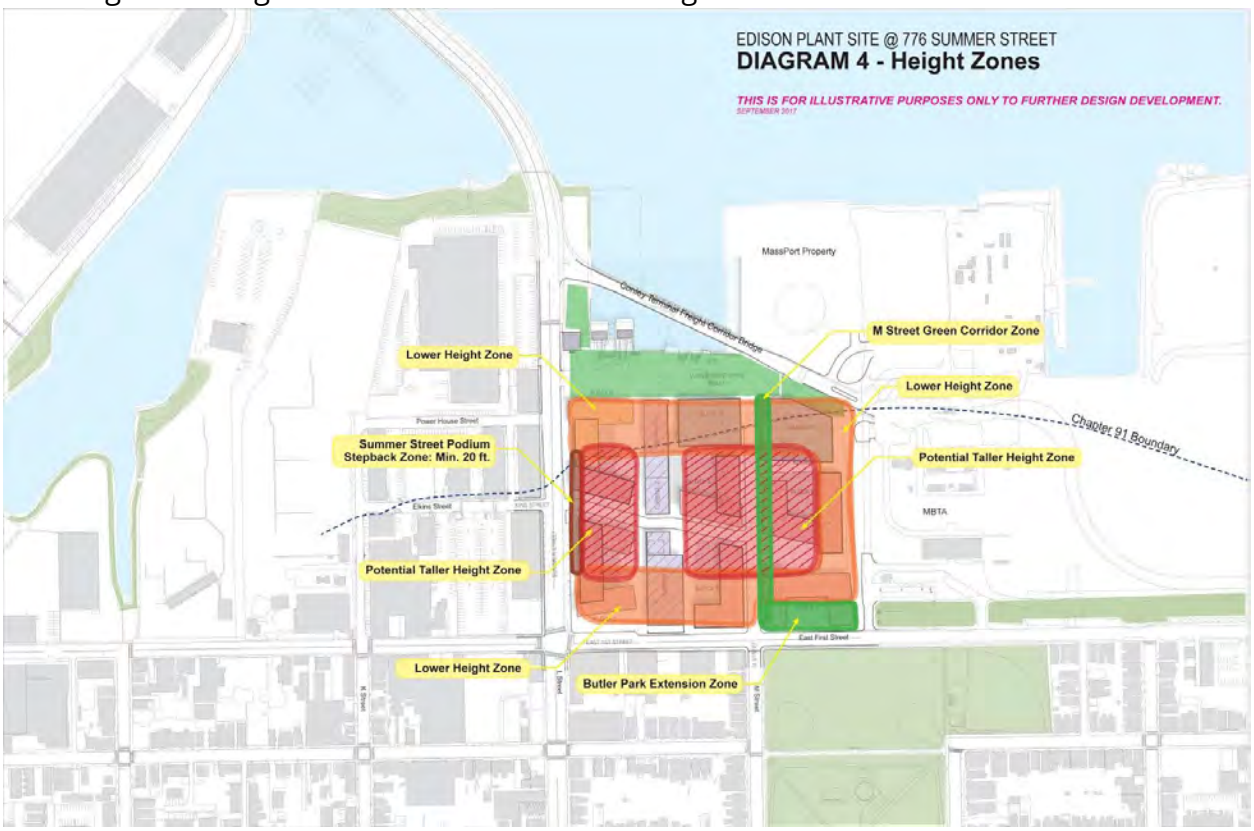
More information about the existing buildings and site will be useful. Reviewing the Historic Resources section of the PNF, it seems likely that the turbine halls were built as complete buildings with exterior walls before the additions were added to the sides. Has there been any investigation as to the condition of those exterior walls? Does the exterior masonry exist or will it have to be reconstructed? It is noted that additional structural exploration is being done, particularly of the original buildings at the northeast of the site. Providing that report would be useful for further understanding of the decisions driving which buildings to keep and which to demolish. There is an interesting and important history of energy generation on the site. What opportunities are there in the development for continuing this history? Does the site lend itself to wind, solar, geothermal, or other power generation in a way that would support the Arts and Industry District idea? SD.67

Many of the planning process comments noted an interest in the development scaling up as it moves away from the existing neighborhood. The DPIR should address massing of the buildings along East First Street as they relate to the existing residential neighborhood and to the rest of the development. This could be done with digital models, physical models, and/or diagrams. Look at adding complexity to the massing strategy that can be built upon in the architectural design. It might be useful to include the massing of the existing buildings to compare the proposed project to. SD.68

Provide more explanation and modeling of the proposed massing including renderings from Columbia Point, South Boston Waterfront, and I-93. The existing 1960s era power plant is very visible from quite a distance and acts as a locator/landmark for South Boston. What does the group of proposed high rise buildings look like from a distance (as well as closer to the site)? SD.69 Comments during the public planning process mentioned wanting a variety of heights on the site, not exceeding the height of the existing 1960s power plant. Currently the PNF shows three high-rise buildings at around 200 feet and another at 170 feet. This is more height than was anticipated in the planning process. Look at bringing more variety to the site to avoid a “flat-top” appearance. Use long distance views and shadow studies to help guide where height should be on the site. Include these views and studies in the DPIR. SD.70 Note that any tall residential building should be set well back from the east edge of the site to provide a buffer from the industrial uses. SD.71 Would concentrating the height closer together work better? Would a reduction in units allow for buildings more in scale with what is on the site now? SD.72 Further variation in the building podiums should also be explored. The current new building designs are fairly regularized, with similar geometries in most of the buildings, with similar relationships between podium and tower. Many of the new buildings and blocks are similar in size, and where minor variation in block size does

exist, the buildings have been designed to be proportionally consistent with the rest of the blocks. It is the hope of the BPDA that a wider variety of block sizes will help contribute to a wider variety of building types and therefore to the liveliness and interest of the area.

See Diagram 4 Height Zones for comments on height and setback. SD.73




As noted above, more information on the site grades is needed. Provide more information on the relationship of the turbine hall and Blocks E and G. What is the connection shown in the sections? How does it help or hinder passage through the site? Are raised open spaces, private or otherwise, planned on the site? Locations should be clearly located in open space plans. SD.74

## C. Environmental Impacts

### Shadow

The results of the shadow impact analysis, as presented in the EPNF, do not allow for an adequate assessment of the potential net new shadow. Accordingly, the Proponent shall be required to generate new illustrations, one to a page, clearly depicting the net new shadows as well as the existing shadows. Net new shadows shall have a clear graphic distinction and for purposes of clarity, new shadows shall be shown in a dark, contrasting tone distinguishable from the existing shadows. This shall be required for both the existing and build conditions for the hours 9:00 a.m., 12:00 noon, and 3:00 p.m. for the vernal SD.75

equinox, summer solstice, autumnal equinox, and winter solstice and for 6:00 p.m. during the summer and autumn.

The shadow impact analysis must examine the existing shadow and incremental effects of the Proposed Project on existing and proposed open spaces, plazas, park areas, sidewalks, pedestrian areas and walkways, adjacent to, and in the vicinity of the Proposed Project, including but not limited to Christopher Lee Playground, Medal of Honor Park, the Flynn Cruiseport (all of which must be clearly identified on the above described illustrations). If deemed necessary, design or other mitigation measures to minimize or avoid any adverse shadow impacts must be identified and described. SD.75

The shadow analysis results shall be provided in both animation and graphic representations, so as to best understand the extent to which shadows from the Proposed Project are anticipated to affect the overall shadow conditions both on the Proposed Project site as well as within the surrounding area.

**Wind**

A quantitative (wind tunnel) analysis of the potential pedestrian level wind impacts shall be required, as the Proposed Project buildings are designed to be up to 220 feet in height. The analysis shall determine potential pedestrian level winds adjacent to and in the vicinity of the Proposed Project and shall identify wind velocities expected to exceed acceptable levels, including the Boston Planning and Development Agency's (the "BPDA") guideline of an effective gust velocity of 31 miles per hour (mph) not to be exceeded more than 1% of the time.

The quantitative analysis ("the analysis") shall determine the suitability of particular locations for various activities (e.g., walking, sitting, eating, etc.) as appropriate. Particular attention shall be given to public and other areas of pedestrian use, including, but not limited to, entrances to the Proposed Project and adjacent buildings, sidewalk adjacent to and in the Proposed Project buildings, and parks, including but not limited to the Christopher Lee Playground, Medal of Honor Park, the Flynn Cruiseport, plazas, and other open spaces and pedestrian areas near the Proposed Project.. SD.76
The analysis shall evaluate the following conditions:

1. No-Build: The existing condition of the Proposed Project site and environs to establish a baseline condition.
2. Build Condition-The Proposed Project as described in the EPNF.
3. As-of-Right-The Zoning Compliant Configuration.
4. Alternative Build Condition-Any alternative development concept to the Preferred Build Condition required to be studied.

Winds shall be measured in miles per hour (mph) and for areas where wind speeds are projected to be dangerous or to exceed acceptable levels, measures to reduce wind speeds and to mitigate potential adverse impact(s) shall be identified and, if appropriate, tested.

The Proponent shall be required to submit a proposed wind sensor point plan to the BPDA for review and approval before the wind studies are performed. Areas of particular interest shall include the streets at the edge of and within the Proposed Project development as well as along the preserved turbine buildings and waterfront area. SD.76

**Noise**

The Proponent shall be required to conduct a noise assessment to analyze the potential noise impacts that may occur during construction and as well as during the subsequent occupancy/operation of the Proposed Project. The noise assessment shall include monitoring of the existing sound levels as well as calculations of future sound levels associated with the Proposed Project's mechanical equipment including, but not limited to exhaust fans, cooling towers and emergency generators. Additionally, an evaluation of the study area shall identify sensitive receptor locations, locations with outdoor activities, which may be sensitive to noise associated with the Proposed Project. As the Proponent has indicated that the Proposed Project is in the early stages of the design process, specific technical specifications of mechanical equipment are likely not to be available and thus the manufacturer's sound level data for mechanical equipment shall be substituted. Reference sound levels for the exhaust systems shall be based on data of equipment of similar type and size. SD.77

The Proponent shall be required to demonstrate that the Proposed Project complies with all applicable City of Boston, Massachusetts and Federal (including Housing and Urban Development noise standards) regulations and guidelines.

**Solar Glare**

An evaluation of potential solar glare impact on streets, public spaces shall not be required at this time, as the Proponent has stated that the building materials will include brick, painted brick, concrete, stone, wood, metal, tile, fiber cement clapboards and panels, glass, and metal canopies, and not a facade of reflective coated glass or other highly reflective materials.

However, should the Proposed Project design change and include the use of reflective coated glass or other highly reflective materials which have the greatest potential for the creation substantial solar heat gain and/or solar glare, the Proponent shall be required to conduct a solar glare analysis. SD.78

The analysis shall measure potential reflective glare from the Proposed Project buildings onto streets and public open spaces and sidewalk areas adjacent to and in the area surrounding the Proposed Project, so as to determine the likelihood of visual impairment or discomfort resulting from reflective spot glare. Additionally, mitigation measures to eliminate any adverse reflective glare shall be identified.

**Air Quality**

The BPDA requires that project-induced impacts to ambient air quality be addressed. An air quality analysis shall be conducted to determine the impact of pollutant emissions from combustion and mobile source emissions generated by the Proposed Project. SD.79

The Proposed Project is expected to generate just over 10,000 total daily (24- hour) vehicle trips, 4,864 trips by public transportation and 8,780 trips by walking, biking or other means. Accordingly, the Proponent shall be required to conduct a mesoscale analysis to determine whether and to what extent the Proposed Project will increase the amount of ozone precursors in the area, as well as to determine if the Proposed Project is consistent with the Massachusetts State Implementation Plan (SIP). SD.80

The mesoscale analysis is required to ensure that the Proposed Project will not adversely impact the existing SIP, which tracks how the state intends to maintain compliance with National Ambient Air Quality Standards (NAAQS) or plans for reductions in emissions to attain compliance in the future. The analysis predicts the change in regional ozone precursor emissions (i.e., oxides of nitrogen, [NOx] and volatile organic compounds [VOC]) generated by Proposed Project-generated vehicular traffic).

The Proponent shall be required to conduct a microscale analysis to determine the effect of Proposed Project generated traffic on air quality. Thus, the Proponent is required to analyze local effects of the potential increase in traffic on ambient air quality near specific roadway intersections. This microscale analysis is required at intersections where (1) Proposed Project traffic would impact intersections or roadway links currently operating at LOS D, E, or F or would cause LOS to decline to D, E, or F, (2) Proposed Project traffic would increase traffic volumes on nearby roadways by 10% or more (unless the increase in traffic volume is less than 100 vehicles per hour) or (3) the Proposed Project will generate 3,000 or more new average daily trips on roadways providing access to a single location.

The microscale analysis involves modeling CO emissions from vehicles idling at and traveling through both signalized and unsignalized intersections. Predicted ambient concentrations of CO for the build and no-build cases are compared with federal (and state) ambient air quality standards for CO.

In addition to the microscale analysis, the Proponent shall be required to conduct a cumulative impact analysis for comparison to the NAAQS for SO2, NOx, PM-10, and PM-2.5.

This analysis shall address emissions from the Proposed Project's heating boilers, emergency generators, cooling towers, etc. Worst case maximum predicted impacts from these source groups shall be added to monitored background values obtained from MassDEP and compared to the NAAQS.

The Proponent shall be required to conduct a stationary source analysis to ensure that the Proposed Project will not adversely impact air quality in the area. The stationary sources that may contribute to impacts are typically combustion sources such as heating boilers, emergency generators, cooling towers, and garage vents. SD.81

**Solid and Hazardous Wastes**

The Proposed Project site is not currently regulated under the Massachusetts Contingency Plan ("MCP"), as the seven release tracking numbers ("RTNs") associated with the Proposed Project site have been closed. Only one of the eight RTNs (3-13007) was closed using an Activity and Use Limitation ("AUL").

| Release Tracking Number | Status |
|---|---|
| RTN-3-0012817 | Closed Site |
| RTN-3-0013007 | Closed Site with an AUL |
| RTN-3-0014575 | Closed Site |
| RTN-3-0017596 | Closed Site |
| RTN-3-0022165 | Closed Site |
| RTN-3-0026342 | Closed Site |
| RTN-3-0028038 | Closed Site |

An AUL is not a permanent limitation on future development of contaminated property. Instead, an AUL serves to transmit the knowledge of the appropriateness of a site cleanup for specific activities. Use of an AUL allows deferral of the evaluation of future uses that are considered to be unlikely for a site until the time (if at all) that such uses are proposed.

The Proponent shall be required to provide a comprehensive description of the proposed remediation strategy (designed to achieve a No Significant Risk (NSR) condition), including a draft Soils Management Plan (or at a minimum generally describe how the excavation of the contaminated soils at the Proposed Project site will be conducted), so as to protect human health during the construction period. Additionally, the Proponent shall be required to provide a comprehensive description of the on-site storage, the process for determining the extent of the contamination, disposal options and measures to ensure the safe transfer of material to disposal sites. SD.82

## D. Green Buildings & Climate Change Resiliency

**Green Buildings**

Green buildings promote communities, reduce site impacts, save water, energy, and natural resources, support human health and wellbeing. The Proponent should establish a long term sustainability plan that includes a green building commitment of LEED Gold for the majority of the buildings with at least one building achieving LEED Platinum and no more than one building achieving LEED Silver or less. Current filings should utilize the LEED v4 Rating System. Given the scale of the project, multitude of buildings, and impact on the surrounding neighborhood, the project shall also achieve LEED for Neighborhood Development (LEED ND) Gold. SD.83

At the initiation of individual building review and coinciding with initial building urban design discussions, the Proponent is to provide a building specific Article 37 Green Building "Initial Filing" including a Sustainability Narrative, LEED Checklist, and Climate Change Checklist. While the Proponent may employ the LEED Campus and Multiple Building approach, a separate submission must be provided for each building. Please review all Article 37 Submission and Review requirements. SD.84

Reducing greenhouse gas emissions is critical to avoiding more extreme climate change conditions. Mayor Martin Walsh has set a goal for Boston to be carbon neutral by 2050. New buildings should be planned and designed to minimize greenhouse gas emissions. The Proponent and project team should employ a comprehensive approach to site and building design including integrated project planning and delivery. SD.85

Initial building designs should, at minimum, target low carbon performance and anticipate any future adaptations necessary for achieving net zero and net positive carbon performance. The Proponent should prioritize passive strategies including building siting, orientation, massing, and envelope design. Active systems should be sized for present and future climate conditions and readily adaptable to performance upgrades. SD.86

The building and site design should include new products and innovative strategies for engaging residents and occupants in reducing adverse project impacts including energy and water use awareness, consumer waste reduction, use of low and no emission travel modes, and environmental stewardship. SD.87

The Proponent should include onsite clean and renewable energy solutions including combined heat and power systems which offer improved energy efficiency, cost savings, and reliability during hazard events and interruptions in service from larger grid outages. SD.88

Given the scale and use mix of the proposed development, the Proponent should assess the opportunities and benefits of smart street infrastructure including distributed thermal and electrical energy, and central energy facilities. The proponent should also consult with SD.89 SD.90

Massport to determine if there is potential for energy solutions that could service both the Conley Terminal and the 776 Summer Street project. SD.90

**Climate Change**

In June 2017, in conformance with the Mayor's 2014 Climate Action Plan and the 2016 Climate Ready Boston recommendations, the BPDA updated the Climate Change policy to require all development projects subject to Article 80 Large Project, Planned Development Area, and Institutional Master Plan review, including modifications and updates, to consider and analyze the impacts of future climate conditions and to incorporate measures to avoid, eliminate, or mitigate greenhouse gas emissions and impacts related to climate change in project planning, design, and construction.

The City's *Climate Ready Boston Report* functions as Boston's strategic plan for assessing hazards associated with climate change and identifies the South Boston Seaport District as highly exposed to future inundation from coastal storms and sea level rise primarily due to its low-lying elevation. Under the 2070 projections of 40" of sea level rise the waterside portions of the project area could be chronically inundated by monthly high-tides. It should be noted that the 40" future sea-level-rise projection is based on *likely* global greenhouse gas emission scenarios and does not reflect worst-case conditions. Inland flooding is also a concern with anticipated heavier precipitations events. Project landscaping and stormwater infrastructure should assess potential impacts from the 10-year 24-hour design storm event. SD.91

The development provides a unique opportunity to integrate resilient design at the building and district scale and establish the project as a climate resilient district. Resiliency measures implemented as 776 Summer Street is built out can assist in preventing and limiting impacts from climate hazards, ensuring building occupant safety, continuity of building tenant business operations and improved building service life and value.
The Proponent's intent to raise the finished floor elevation in areas vulnerable to inundation to 21.5' BCB will greatly assist in reducing impacts from coastal flood conditions and consistent with the updates to the Article 80 Climate Preparedness and Resiliency Checklist which will require property owners to address up 40" of sea level rise. Project planning should identify immediate (design condition) and future adaptation strategies for managing at least 40" of sea level rise and *include an additional* 12" of freeboard for all buildings and *include an additional* 24" of freeboard for any critical facilities and infrastructure and ground floor residential uses. SD.92

As the project will be functional through 2100, and given further anticipated increases in sea level rise beyond the end of the century, the proponent should review options for designing flexibility into new buildings and public realm infrastructure to accommodate future changes in extent of climate hazards, such as allowing greater floor to ceiling height on ground floors to allow for additional ground floor elevation, or designing the second SD.93

floor as a possible, future first floor to accommodate potential increases in area grade elevation. SD.93

Open space resources, tree canopy, and building materials should also be evaluated and discussed in relation to mitigating heat island effect and managing extreme precipitation events and stormwater. A robust and extensive tree planting and preservation program, aligned with the goals of Urban Forestry, should be included in the Project design, as the Urban Forest is an important part of the City's landscape. It is made up of all the public trees in Boston, along with the City's shrubs, grasses, ground cover, soil, and waterways. SD.94

The Urban Forest serves an important stormwater management function by intercepting rainfall that would otherwise run off of paved surfaces and be transported into local waters though the storm drainage system, picking up various pollutants along the way. The Urban Forest also reduces the urban heat island effect, reduces heating/cooling costs, lowers air temperatures, reduces air pollution, increases property values, provides wildlife habitat, and provides aesthetic and community benefits such as improved quality of life.

**Smart Utility Technologies**

Over the last year, working in close collaboration with an engineering consultant and other City Departments (Public Works, DoIT, EEOS, BWSC, and BTD), the BPDA has spearheaded the development of the Boston Smart Utilities Vision. The Smart Utilities Vision is aimed at improving the planning for and coordination of utilities—telecommunications, water/sewer, gas, electrical, roadways—so that these services can be made more affordable, equitable and sustainable. The fundamental mission of Boston Smart Utilities is to transform the business-as-usual model of utility design, planning and coordination into an approach that results in greater efficiency, equity, resiliency and sustainability.

The key products of the year-long study leading up to the Smart Utilities Vision include a Baseline Report, an Assessment of Costs and Benefits, and the Smart Utility Standards. In particular, the Smart Utilities Standards establish a guide for improved coordination, efficiency and sustainability in utility planning and installation. All of these documents can be found at http://www.bostonplans.org/planning/planning-initiatives/boston-smart-utilities-project.

Based on the recommendations of the Smart Utilities Vision, by early 2018, the BPDA Planning Department anticipates BPDA Board adoption of Smart Utility policies for new development, to be memorialized as part of the BPDA's Development Review Guidelines. In anticipation adoption of these guidelines, the Planning team is now advising Article 80 proponents about these prospective new policies.

*Applicable Smart Utility Technologies*

Going forward, it will be BPDA's objective that all projects comply with the Smart Utility Standards. In addition, depending on the project size, BPDA will expect to see Smart Utility Technologies (SUT's) incorporated into new developments. The SUT's include Adaptive Signal Technology, District Energy Microgrid, Green Infrastructure, Rainwater Reuse, a Telecommunications Utilidor, and, electrical connections and data services access for street lights. Definitions of these technologies are provided below for reference*.

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* **Definitions**

**Microgrid-** A microgrid is a localized arrangement of electricity sources and loads that typically operate in a connected and synchronous manner with a traditional centralized grid, but also have the ability to disconnect and function autonomously as the need arises. Microgrids provide many operational and business opportunities that give more control to communities aiming to improve "resilience" and power distribution reliability, use higher concentrations of alternative energy supplied from within the community and participate in strategies to reduce electric consumption and improve load characteristics. There are five primary components required for a functioning microgrid which include: 1) a power source, 2) a power management system, 3) an energy storage system, 4) electricity consuming devices, and 5) a utility connection. The platform can be used for numerous other smart city deployments concerning street light management, security, public Wi-Fi, and operational sensors and in conjunction with distributed generation systems and electrical vehicle charging stations.

**Adaptive Signal Technology-** Smart traffic management utilizes intelligent signals and traffic cameras to manage traffic flow in real-time. These technologies are used to facilitate vehicle progression and reduce wait time which improves fuel efficiency and reduces GHG emissions. Smart traffic management can be coupled with autonomous vehicles, vehicles equipped with the capabilities to sense the surrounding environment and navigate without human input. Combined, such a traffic system provides advantages of improved pedestrian safety and fewer associated traffic accidents. Lastly, Electric Vehicle charging stations promote the use of environmentally friendly vehicles. Additional information regarding Electric Vehicle charging stations, intelligent signaling and traffic cameras, smart sensors, and smart meters can be found in Boston Complete Streets Guidelines 2013.

**District Energy -**A District Energy Microgrid refers to a system for distributing heat or chilled water from a centralized location to meet community space heating and water heating needs. Hot water, or chilled water produced at a central plant is piped via an underground distribution network to individual buildings for use. As a result, individual buildings served by a district energy microgrid do not need their own boilers, furnaces, chillers, and/or air conditioners. A district energy microgrid provides opportunities to reduce energy use, energy cost, and green house gas (GHG) emissions especially when combined heat and power (CHP) generation is feasible. The systems are able to provide higher efficiencies and better pollution control than localized boilers. It increases the building's useable floor area and reduces the building's capital costs. Furthermore, the adoption of centralized heating and cooling strategies has one of the lowest carbon footprints of fossil generation plants and allows for implementation of more efficient technologies, such as easier conversion to zero carbon fuel sources in the future.

**Green Infrastructure -** Green infrastructure is an approach to water management that includes policies, planning activities and infrastructure implementation that assists in absorbing, delaying, and treating stormwater in order to reduce flooding risk and pollution downstream. Boston Complete Street Guidelines 2013 provides additional information on various green vegetated stormwater management systems (stormwater/bioretention planters, rain gardens, street trees, etc.), as well as information on permeable pavements. Green Infrastructure considered in the Smart Utilities Vision include: bioretention basins and planters, downspout disconnections, as well as permeable pavement.

**Rainwater re-use-** Rainwater and greywater can be directed and collected using a drainage/plumbing system that is separate from the building wastewater plumbing system and the storm drainage system. The re-use process consists of two steps: the diversion system and the filtration/purification system. Rainwater use is the accumulation of rainwater from roofs. Greywater is gently-used water from bathroom sinks, showers, tubs, and washing machines. Greywater does not contain any fecal contamination. Although greywater may contain traces of food and grease, it is still considered "clean" and is a beneficial source of water for irrigation and toilet use. Re-using rainwater and greywater for these purposes reduces water main demands, particularly in growing urban communities. By re-using this water, it is kept out of the sewer and storm drainage systems, ultimately reducing the chance of polluting local water bodies as well.

**Telecommunications Utilidor -** The Telecom Utilidor is an underground passageway that will contain all telecommunication utility assets. By unifying all the telecom assets in one "Utilidor", surface street disruptions will be decreased construction costs, as well as future operation and maintenance costs will be reduced.

Applicable Smart Utility Technologies for each project will depend on (a) the floor area of the Project and/or (b) the Project's required mitigation of traffic, street lighting, and surface water runoff.

***For large-scale projects:***

1. **For any projects at or above 1.5 million square feet of floor area**, the project will be required to incorporate a District Energy Microgrid, to the extent that the project buildings located on contiguous properties or clustered close together. For projects that are primarily residential, complying with this requirement may entail cooperation with a district energy provider that can sub-meter individual residential units.

2. **For projects at or above 1.5 million square feet of floor area, and/or adding or altering road surface in excess of .5 miles of roadway,** the project will be required to incorporate a Telecommunications Utilidor.

***For all Projects at or above 100,000 square feet of floor area:***

3. The project will be required to incorporate **in-building rainwater capture and reuse.**

SD.95

4. **For all projects that are subject to BWSC stormwater mitigation requirements,** require Green Infrastructure installation.

5. **For all projects where traffic signals need to be installed or phasing and timing changes are required due to traffic mitigatio**n, include Adaptive Signal Technology as part of the TAPA agreement.

6. **For all projects making right-of-way improvements which are responsible for Street Light installation or a contribution toward the same**, all street lights should have additional electrical connection and data service access.

Given that the L Street Station Redevelopment exceeds all of these thresholds, the BPDA looks forward to working with the proponent to explore how the project can address each of these Smart Utility Technologies.

**Port and Port Related Activities**

<u>Mitigating Port Impacts</u>

The project proponent should specify the use and design measures that will be implemented to prevent conflicts between the development project and the adjacent Massport Conley Terminal and the Designated Port Area. Massport has recently invested $75 million dollars to expand the terminal and buffer port related activity from the surrounding community through the Butler Memorial Park and Dedicated Freight Corridor (DFC). The development must function to limit conflicts with port related operations and

SD.96

not diminish or encumber the long-term viability of Conley Terminal, the Raymond Flynn Cruiseport, and port-related activities.

The proponent should address several measures to buffer the development from port related operations. Residential uses on the site should be located on parcels away from the DFC on the north side of the property and appropriate consideration should be given to uses adjacent to the industrial and MBTA transit related parcels to the east. Further use-related mitigation measures for residential components of the project should be discussed, including apartment-only units with one-year lease provisions, or condominium ownership units restricted to residential buildings adjacent to existing residential and non-port related property along the East First Street and Summer Street corridors. Use restriction language should also be discussed, which provides notice as part of all property deeds and leases that tenants or those purchasing property at the subject site recognize they are located adjacent to a state established Designated Port Area with cruise ship, cargo, and waterfront industrial activities, which produce vehicular, mechanical, and vessel noise, vibration, and odors, as well as lighting and hours of operation consistent with 24/7 waterfront commerce and industrial activities. Design elements to mitigate impacts such as noise reducing windows and landscape buffering should also be addressed. The proponent should also more fully discuss buffering elements along the waterside park to address visual and noise impacts associated with the DFC. Elevation of the park element could assist with buffering as well as improving the site's capacity to limit inundation for sea level rise and future coastal storm events. SD.97

<u>Turbine Hall</u>

Through the early public planning process for the project site the adaptive reuse of Turbine Hall has been an area of strong community interest. The proponent has emphasized the rehabilitation of Turbine Hall as a primary objective of the project due to its architectural significance and capacity to provide for many civic, arts, cultural, and local retail uses. Given the intent of having the structure serve as a public destination and focal point of the project, more thought should be given to how the spaces will be organized and potentially programmed, both within and around the hall buildings. Given the size and scale of Turbine Hall the proponent should discuss whether it is feasible to rehabilitate all the component buildings or phase the restoration as the project site is developed. SD.98

*Excerpted from the minutes of the BCDC June 6, 2017 meeting:*

The next item was a presentation of the **L Street Station Project (776 Summer Street)**. John Sullivan (JS) of SGA presented the design, first introducing the SGA design team, and Greg Bialecki (GB) of Redgate. JS noted the Proposed Project stats, then the site in the area context. JS: This is one of the sites noted in IB2030. (Shows the site in the context of the area's green spaces, shows the site bounds on an aerial slide.) There is NO connection to the community now. What's on the site, notably some early 20th-century buildings (3-4) that have wonderful character - we want to uncover that hidden history. They have glazed tiles, ornate masonry, and industrial light fixtures.
We developed some Guiding Principles. These include: Clean Up, Open Up, Live/Work/Play, Preserve Conley Operations, Include Unique Retail, Make a Commitment to Arts & Culture, Preserve Significant Building Elements, Minimize Cars, and Practice Green/Sustainable Design. (Shows precedent images.) The open space vision is that of the industrial waterfront experience. In preserving the Turbine Halls, we are creating a destination. The array of uses includes not just retail, but also the arts, and cultural activities/events. JS then showed a series of diagrams looking at the site plan: the Turbine Hall, connections to the community, use zones, waterfront open space, stepping the height down toward the neighborhood edge and at the Chapter 91 line, and the FAA height overlay. He showed the site plan that resulted from overlaying the diagrams, noting pedestrian paths as well as vehicular one; the overall block plan was next, with blocks A to G and the Turbine Hall. Then oblique aerial views with the existing heights noted, and preliminary street sections. JS: We are creating a pedestrian-first approach. We are thinking about zones - 'districts' with different feels, like 'Turbine,' 'Water,' etc. Programming thoughts inform the precedents for the open space. (Shows a circulation diagram, Project statistics, and neighborhood sections. Shows perspective views along Summer and East First streets.) KS: You mentioned less truck traffic - what does that mean? JS noted Massport's planned Haul Road which will bypass directly to the Conley Terminal. DH: I have a question about process. What are we looking at here? DAC: This is an initial submission. It's large enough, and so should be like New Balance, if it's a Master Plan PDA. We would look at the whole and focus on the first phase in any case. DH: We'll need a model - this is the size of Bay Village - and time to consider the Project. JS showed two more views - the interior of the Turbine 'neighborhood,' then along the waterfront. KS asked about the truck road - the freight corridor. DM noted that it's built already (shows at the left in the waterfront view). GB, going back to the plan view, showed the location of the Freight Corridor (Haul Road) on Massport property. GB: The Massport property now includes Coastal Oil. Next door, the MBTA uses five acres as a bus layover area. The back area includes an emergency back-up power facility. We are working to improve the available transportation and bus services. WR: The bridge is built? GB: Yes. WR: It's unclear from the recent press. GB: Massport is moving trucks on a route back away from the neighborhood residential. They did not want us moving residential back up to it.

AL: What about the buildings on the site? GB used an aerial site shot to explain the various building conditions and character. He noted the (3) Turbine Hall building(s) and then the corner building, which is a boiler plant filled with equipment. Once the equipment is removed, the building is *not* preservable. The switchgear station [small, to the west] is still owned by Eversource. AL: I'm just asking the question. Rather than the token retention of Turbine Hall, these structures often have extraordinary character. Have you explored [saving more]? DM: I agree with Andrea. I would suggest an unusual thing - that we go to the site and walk through the buildings. It's amazing on the interior. Your team is to be congratulated. This is an extraordinary site; I would like to examine all the possibilities. MD: I agree with the notion of a site visit. I have no idea what the vision is. Can your program fit on the site? I'm not sure it's all gelled yet. Take a 10,000-foot view; we'd like you to consider more. KS: Consider all the development in the area; help us get up to speed. DH: Like if development is intended for those parking lots [to the west]. MD: At New Balance, once we understood the context and considered the urban vision, we understood the development much better. GB talked briefly about the context and requested that the BPDA send the planning (charrette) document. With that, and hearing no public comment, the 776 Summer Street Redevelopment Project was sent to Design Committee.

STEPHEN F. LYNCH
8TH DISTRICT, MASSACHUSETTS

COMMITTEE ON FINANCIAL SERVICES
SUBCOMMITTEE ON CAPITAL MARKETS, SECURITIES, AND INVESTMENTS
SUBCOMMITTEE ON TERRORISM AND ILLICIT FINANCE

COMMITTEE ON OVERSIGHT AND GOVERNMENT REFORM
RANKING MEMBER, SUBCOMMITTEE ON NATIONAL SECURITY
SUBCOMMITTEE ON GOVERNMENT OPERATIONS

ASSISTANT DEMOCRATIC WHIP

# Congress of the United States
## House of Representatives
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LYNCH.HOUSE.GOV

August 3, 2017

Mr. Brian Golden, Director
Boston Planning & Development Agency
One City Hall Square
Boston, MA 02201

**Re: 776 Summer St., South Boston (Edison Power Plant) Proposal**

Dear Director Golden:

I am writing to you regarding the proposed 15.2 acre project located at 776 Summer St., South Boston, formally the site of the L St. Plant. As the Congressman from the Eighth Massachusetts District, I represent the families of South Boston.

This proposal raises many serious neighborhood concerns including density, traffic, public safety and parking. There are also overarching maritime and environmental issues that need to be addressed.

Notably, this proposal would add approximately 1,500 additional housing units as well as retail and commercial shops and a possible hotel, it would introduce approximately 10,000 to 20,000 additional vehicle trips to this area each day and completely overwhelm the neighboring residential area unless thoughtful and careful countermeasures are included. Currently such mitigation has not been suggested. 1.1

Moreover, as Conley Terminal has expanded, we have worked with Massport over several years to create a Dedicated Freight Corridor (DFC) to relieve East First Street of over 1,000 daily tractor-trailer truck trips. As part of this process, Thomas Butler Park was created to act as a buffer zone mitigating noise and carbon emissions from the truck traffic which will soon be redirected onto the DFC.

As noted above, and according to the proponents PNF and MEPA filings, this project would entirely negate the neighborhood's efforts at traffic mitigation by generating an additional 10,000 to 20,000 vehicle trips through the South Boston Neighborhood. This would reverse the progress that has been made in this area and leave the neighborhood in far worse condition after all the work and investment by the Commonwealth of Massachusetts and Massport. From a neighborhood standpoint, this simply cannot be allowed to happen. 1.2

Neighborhood parking has become a major concern to residents, and this proposal would contribute to an already unmanageable situation. Other issues of concern include public safety and environmental issues during the demolition and cleanup process, with potential health risks of contaminants drifting into the surrounding homes as well as onto the public parks and playground directly across the street. 1.3

Importantly, over a billion dollars has been invested through Federal and State partnerships for the dredging of Boston Harbor and the Reserved Channel to increase the international shipping industry and make the Port of Boston more competitive. This development would negatively impact all the advancements made to the Port of Boston and to Conley Terminal by further harming traffic flow and air quality by adding vehicular traffic onto local streets which are not able to sustain the additional traffic flow in and out of the South Boston community. 1.4

While the people of South Boston have been very cooperative and supportive of the many developments in our neighborhood, that support and cooperation has been the result of a two way conversation between the developer, local leaders and community groups.

Recently, I have been reassured and encouraged by the news that the developer has agreed to conduct a full community-wide meeting with more accurate descriptions and renderings of the proposed project and hopefully including some measures to address the concerns raised by the South Boston community. Therefore, while I remain firmly opposed to this project in its current form, I also respectfully request that the comment period be extended by 90 days, so that the developer will have more time to refine the proposed project and meet with the neighborhood residents.

Director Golden, thank you for your time and consideration in this matter.

Sincerely,

**STEPHEN F. LYNCH**
Congressman
8th District
Massachusetts

cc Tim Czerwienski, BPDA

THE GENERAL COURT OF MASSACHUSETTS
STATE HOUSE, BOSTON 02133-1053

August 4, 2017

Brian Golden, *Director*
Boston Planning and Development Agency
1 City Hall Square, 9th Floor, Room 900
Boston, MA 02201

**Re: 776 Summer Street / Edison Plant**

Dear Director Golden:

We are writing to you with serious concerns regarding the proposed project located at 776 Summer St. in South Boston, also known as the Edison Plant proposal. As the state elected officials, we represent the people of South Boston and cannot support this proposal in its current form. We firmly believe the comment deadline should be extended by 90 days to provide ample opportunity for the residents of South Boston, in particular the City Point neighborhood, to analyze this proposal.

After careful review, it is clear that the density proposed is simply unfeasible. According to their PNF and MEPA filings, this project would generate between 10,000 and 21,000 new car trips in and out of the neighborhood daily. Our roads, buses, and transit options are already over saturated. Significant investments made by the MBTA recently are only designed to catch up to the current levels of ridership, not projected growth. This project would completely overwhelm our transportation infrastructure, negatively affect our air quality, and further exacerbate the gridlock on our streets. 2.1

Currently, the Massachusetts Port Authority (Massport) is wrapping up a $75 million investment in the Thomas J. Butler Haul Road and Buffer Zone Park. This was done in preparation of the expansion of Conley Terminal to get roughly 1,000 commercial trucks off of East First Street to alleviate the environmental and noise impacts on area residents. To follow that effort, Massport, the Federal Government, and the Commonwealth of Massachusetts have joined forces to invest roughly $1 billion to dredge Boston Harbor and expand Conley Terminal to make Massachusetts more competitive in the international shipping industry. The current proposal is simply incompatible with that significant public investment, and would negatively impact the port of Boston, all while replacing much of the noise and pollution that we originally sought to mitigate. 2.2

We have additional concerns about public access to the waterfront and green space. Any and all green space and open space on the waterfront should be publicly owned and protected in perpetuity to ensure preservation and access for generations to come. With that in mind, we feel that 'Project Alternatives' outlined in the project filing were not fully explored. In concurrence with Secretary Beaton's ENF Certificate, (EEA #15692, pg.7), we strongly encourage the proponents to more wholeheartedly explore viable alternatives in order to ensure that the final product is truly one that best fits the site's location within the community. 2.3

Finally, this project has a significant number of review processes underway, including Coastal Zone Management Designated Port Area review, MEPA residential approval, Ch. 91 usage and an agreement with the Massachusetts Historic Commission. Due to these factors as well as the size, scope, and complexity of this project, we respectfully request the comment deadline be extended 90 days so each agency, and the public, can fully absorb every aspect and make informed decisions regarding this development.

Thank you for your consideration of these concerns and requests, and please do not hesitate to reach out to our offices should you have any questions.

Sincerely,

Linda Dorcena Forry
*State Senator*

Nick Collins
*State Representative*

cc: Tim Czerwinski, *Project Manager*
Mike Christopher, *Deputy Director for Development Review / Government Affairs*

# MICHAEL F. FLAHERTY
## BOSTON CITY COUNCIL AT-LARGE

August 3, 2017

Mr. Tim Czerwienski, Project Manager
Boston Planning & Development Agency (BPDA)
One City Hall Square
Boston, MA 02201

Dear Mr. Czerwienski:

I am writing to you today to express my concerns to a development project located at 776 Summer Street, South Boston, formerly known as the Boston Edison Plant. The project, which proposes to be 15.2 acres, has raised serious concerns from the surrounding neighbors. Based on the project's PNF, the project would generate a multitude of quality-of-life issues that need to be addressed (density, affordability, and transportation to name a few) beforehand through an exhaustive neighborhood engagement process.

The proposal calls for 1,500 residential housing units and retail space to be developed in an already dense area. As we have seen over the past decade, the rapid development in South Boston has overwhelmed the neighborhood tremendously. Further, 10,000 to 21,000 new vehicle trips are projected to take place in an area that is already at capacity with vehicular traffic. Given that this site used to be a power plant, there are serious environmental, health and safety concerns that need to be acknowledged. If this project is approved, there is potential for contaminants affecting the surrounding community during the demolition and cleanup process. Lastly, there needs to be preservation of and access to the surrounding greenspaces and waterfront particularly the continuance of the street grid from M street and N Street right down to the waterfront. 3.1

The South Boston Community have been supportive and accommodating to the many developments that have taken place in the neighborhood. Support and accommodation is reached as a result of a thorough and extensive community process. It is for the above-mentioned reasons that I respectfully request that the BPDA oversee and ensure the community's overall concerns are addressed and alleviated. Thank you for your time and consideration.

Regards,

Michael F. Flaherty

Michael F. Flaherty, Boston City Councilor At-Large

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**Massachusetts Port Authority**
One Harborside Drive, Suite 200S
East Boston, MA 02128-2090
Telephone (617) 568-5000
www.massport.com

July 6, 2017

Matthew A. Beaton, Secretary
Executive Office of Energy and Environmental Affairs
Attn: Alex Strysky EEA 15692
100 Cambridge Street
Boston, MA 02114

**Subject: L Street Station -776 Summer Street (EEA #15692) ENF Comments**

Dear Secretary Beaton:

On behalf of the Massachusetts Port Authority (Massport), we are pleased to have the opportunity to review and provide comments on the *Environmental Notification Form* filed by HRP 776 Summer Street LLC (the Proponent) to commence joint review of the proposed L Street Station redevelopment at 776 Summer Street in South Boston under both MEPA and the City of Boston's Article 80B process. As outlined in the ENF/EPNF, this project proposes to build a total of 2.1 million sf on the 15 acre site, including 1.4 million sf of residential development (±1,500 units), 987 structured parking spaces hotel, retail and office space.

As a major landowner in the South Boston Waterfront, and the owner and operator of the Conley Container Terminal which abuts the 776 Summer Street property, Massport appreciates the opportunity to comment on this filing and to provide context on the critical port operations that occupy 2 sides of the site. We recognize the unique urban and economic redevelopment opportunity this project represents and the community's strong interest in replacing the former power plant and remediating this site. Massport's primary interest is ensuring the long-term viability of the Conley terminal and The Port of Boston's over 7,000 jobs as this project moves ahead.

**Proposed Project's Context on the Port of Boston**

Conley Container Terminal, which is located immediately adjacent to the project site, and maritime uses in the Port generally have a significant regional economic impact; over 1,600 businesses throughout New England rely on Conley to import and export raw materials and finished products. It is a critical link in both the region's supply chain and the overall economy.

Container activity at Conley processed a record high mark of over 250,000 TEUs (Twenty Foot Equivalent Units, a standard industry measurement of throughput) in FY2017, coming off back to back record volume in both FY15 and FY16. In conjunction with the Commonwealth and the federal government, Massport is now embarking on a comprehensive Conley Terminal modernization and harbor dredging project to accommodate the new, larger post-Panamax ships that are already beginning to call on Boston following expansion of the Panama Canal. In addition to the Boston Harbor dredging project, Massport has been particularly focused on improving and expanding Conley's landside terminal and transportation facilities to increase terminal capacity and efficiency necessary to remain

competitive as a regional port. Critical among these projects are the Butler Dedicated Freight Corridor (DFC) which is scheduled to open in 2017, improvements to Berths 11/12, and creation of a new deepwater berth, Berth 10, to allow Conley to receive the larger container vessels now servicing the East Coast. A key motivation for Massport's construction of the DFC was to move Conley truck traffic off East First Street and away from the adjacent residential neighborhoods.

The landside improvements will also include the purchase of three new ship-to-shore cranes to be located between the current cranes and the proposed project site, and the expansion of the Conley container yard on the former Coastal Oil site, which Massport invested in cleaning up. Also, although not in the immediate terminal plans, Massport is preserving a 5-acre site immediately adjacent to the 776 Summer Street site for future maritime industrial use to support Conley operations. These projects, and others not detailed in this letter, are all part of the large scale investment in Conley Terminal that collectively represent an investment in the Port of over $850 million by Massport, the Commonwealth, and the Federal government to continue to support this regional economic asset, while also minimizing its impact on existing residential neighbors. These projects are illustrated on the attached map.

The 776 Summer Street project site is also immediately across the Reserved Channel from the Raymond L. Flynn CruisePort Boston at Black Falcon Terminal. The terminal hosts a robust and growing cruise ship industry each season from April to November. This year, the CruisePort will set a record with more than 150 ships visiting and docking in close proximity to 776 Summer Street, another example of the level of maritime activity that occurs in this area of the Port of Boston.

Several of Massport's improvements listed above, particularly the DFC and upcoming Berth 10 work, will move essential Conley operations west, away from Logan airspace restrictions, and closer to the 776 Summer Street site. When it opens in the fall of 2017, the DFC will carry approximately 900 container trucks a day past the project site.

It will be critically important to evaluate the 776 Summer Street redevelopment in the context of these existing and planned maritime activities. Conley Terminal operates 24/7. Container ships regularly call Conley Terminal on nights and weekends, leading to active unloading activities throughout the facility outside of typical work hours.

In light of Massport's work to protect and grow these Maritime assets, we are pleased to provide the following specific comments on the ENF:

***Buffering Conley Terminal Operations***. Due to the 24/7 nature of activity at Conley Container Terminal and on the DFC, Massport believes that this development must be designed to minimize conflicts between the site and the adjacent industrial port. The allocation of land uses should be designed to buffer and protect Conley operations from potential development that is incompatible with adjacent maritime industrial uses. Massport understands that there is strong interest in accommodating residential units on the site. Particularly given the close proximity to certain 24/7 Conley Terminal activities, a thoughtful review of specific residential proposals in the context of an overall plan will need to be assessed. In particular, we recommend the following:

4.1

- Residential uses should be limited to portions of the site that do not abut the Butler Dedicated Freight Corridor or adjacent industrial uses. We concur with the current proposal to buffer the port by avoiding residential uses on blocks D, G, and H. We also have concerns that any residential units in Block F, particularly along the property line, could be too close to the industrial activities at Conley.
- Condominium ownership should be restricted to interior blocks and along East First Street.
- Massport's standard Residential Use Restriction Language, which describes the adjacent freight corridor and active industrial uses, should be included in all legal documentation signed for any residential units

- Construction of any residential units should be designed to meet noise standards (not to exceed 45 dBA day-night average interior sound level).
- Additionally, we recommend minimizing active lower level commercial use on the ground floors of office and hotel blocks fronting on the Butler Dedicated Freight Corridor, which will likely generate noise and vibrations from the more than 900 truck trips per day that may be incompatible with commercial activities. 4.1

***Limit Public Access near Secure Zones and Terminal Operations.*** Once opened and under Massport Police surveillance, the DFC will be a restricted access roadway, providing critical freight access between Conley Terminal and nearby truck routes such as Summer Street, Massport Haul Road, and the South Boston Bypass Road. The proponent has the right to construct and use a single driveway connecting to the DFC into the project site for delivery and service access to the site only; this connection is shown on plans included in the ENF. It is imperative that this connection remains gated to maintain the security of the DFC and that it is used only for service purposes. 4.2

***Limit Transportation Impacts.*** Mixed use development of the L Street Station site will increase multi-modal traffic and bring 10,250 new vehicle trips in the East First Street/Summer Street neighborhood and the surrounding community. The ENF form on page 3 lists 8,780 vehicle trips. However, we understand from the ENF's data tables that this is the number of new bicycle and pedestrian trips, not vehicle trips. We understand that this development intends to create a grid of streets on the parcel and to provide above ground on-site parking on several parcels. As part of the continued environmental review process, Massport will look forward to reviewing a more detailed analysis of the project's projected traffic impacts and operating characteristics to ensure they will not negatively impact Conley operations. In particular, we will be seeking to maintain the safe, efficient, and timely operations of the new signalized intersection at the DFC and Summer Street. It is imperative that freight movement on Summer Street is not adversely impacted by the additional vehicle trips generated by the project. 4.3

***Open Space and Waterfront Access.*** The ENF describes a concept for a highly programmed active waterfront open space along the northern edge of the site. Due to the need to maintain security of the DFC, Massport requests that waterfront open space be designed with landscaped buffer to provide separation from the DFC in all locations. Public recreation plans should be evaluated for their compatibility with the noise, light, and truck traffic of the active port. Additionally, Massport is soon to open the 4.5-acre Thomas Butler Memorial Park along East First Street to the east of the 776 Summer Street site, which will buffer the community from Conley Terminal noise and will include many amenities for the local community. We support the developers' plans to continue the spine of public access along East First Street through the development site to the intersection of East First Street and Summer Street and would support additional connections leading from the interior of the site to the park. 4.4

**Building Heights**. In coordination with the Federal Aviation Administration (FAA), Massport has prepared and widely circulated the *Logan Airspace Map* that defines the critical airspace around Boston Logan International Airport to protect the flight corridors in and out of the Airport (see attached map). Created by Massport, with input from airlines, pilots, city officials, and the FAA, it helps guide developers and regulatory authorities to safely build to maximum structure heights without compromising air travel safety. The map aids developers in their planning and assists the FAA in its review of individual projects to determine if they present a potential hazard to air navigation. 4.5

As noted above, the ENF describes an increase in the maximum building heights surrounding the L Street Station site. The project building heights presented in the ENF are based on Boston Zoning Code rather than an elevation of the tallest building structure compared to elevation above mean sea level (AMSL – NAVD88). Accordingly, additional information on the proposed building heights using the *Logan Airspace Map* baseline is needed to determine if the Project is consistent with the Airspace Map. We are pleased to hear that the project will involve removal of the two

stacks that have historically penetrated Logan's protected airspace and that all site buildings will remain below the critical FAA surfaces, thereby removing an obstruction to Logan Airspace.

Massport recommends that the Proponent coordinate closely with FAA and Massport during the remainder of the design process to ensure that individual building heights remain consistent with the *Logan Airspace Map* and also early in the construction phase, which is particularly important to minimize the extent and duration of impacts of the crane(s) on the airspace. The Proponent will be required to submit multiple Form 7460s to the FAA, one for each permanent building and a separate filing for construction cranes. 4.5

Thank you again for your consideration of our comments. We look forward to continued collaboration as the L Street Station proceeds. Please feel free to contact me at (617) 428-2815 or at lwieland@massport.com if you wish to discuss any of our comments.

Sincerely,

**Massachusetts Port Authority**

Lisa Wieland
Port Director

CC: T. Glynn, J. Doolin, G. Carr, A. Hargens, S. Dalzell, H. Morrison, L. Gilmore, F. Leo, M. Gove/Massport
B. Golden/Boston Planning & Development Agency
D. Koh/Office of Mayor Martin Walsh
R. Cox/Redgate Capital Partners

Enclosures: Logan Airspace Map
Conley Terminal Master Plan

# Boston – Logan International Airport
# Composite of Critical Airspace Surfaces

## Legend

### Surface Elevations (MSL)

- 801' to 1,000'
- 601' to 800'
- 401' to 600'
- 201' to 400'
- up to 200'
- Downtown Zone Area

Dashed lines identify transition from "Flat" to "Sloping" surface.

Contour Interval = 25 FT

Notes:

1. This Composite Map is intended for informational and conceptual planning purposes only and does not represent actual survey data nor should it be used in the development of a FAA Form 7460. Massport does not certify the accuracy, information or title to the properties contained in this plan nor make any warranties of any kind, express or implied, in fact or by law, with respect to boundaries, easements, restrictions, claims, overlaps, or other encumbrances affecting such properties.

2. This Composite Map does not replace the FAA's 7460 review process. Consistency with the surfaces shown on this map does not ensure that the proposal will be acceptable to the FAA and air carriers. Massport reserves the right to re-assess, review and seek modifications to projects that may be consistent with this Composite Map but that through the FAA 7460 process are found to have unexpected impacts to Boston Logan's safety or efficiency.

3. Surface elevations are referenced in feet Above Mean Sea Level (AMSL - NAVD88)

**COMPOSITE MAP PARAMETERS**

| SURFACE TYPES | RUNWAYS |
|---|---|
| C RCLE-TO-LAND | ALL RUNWAYS (EXCEPT 14) |
| ICAO/AC ONE ENG NE INOP. | 4R, 4L, 9, 14, 15R, 22L, 22R, 27, 33L |
| IFR STND DEPARTURE | 4R, 9, 14, 15R, 22L^, 22R^, 27^, 33L |
| IFR NON-STND DEPARTURE | 4L |
| ILS APPROACH | 4R, 15R, 22L, 27, 33L |
| ILS MISSED APPROACH | 4R*, 15R, 22L, 27, 33L*^^ |
| LOCALIZER APPROACH** | 4R, 15R, 22L, 27, 33L |
| LNAV APPROACH** | 4R, 15R, 22L, 27, 32, 33L |
| LNAV MISSED APPROACH | 4R, 15R, 22L, 27, 32, 33L |
| PART 77 - STANDARD | EAST OF 4R/22L |
| PART 77 - VFR ONLY | WEST OF 4R/22L (N. OF DOWNTOWN) |
| VIS BILITY (CIRCL NG) | ALL RUNWAYS (EXCEPT 14) |
| VIS BILITY (STRAIGHT- N) | 4R, 15R, 22L, 27, 32, 33L |
| VNAV APPROACH | 4R, 15R, 27, 33L |
| VNAV MISSED APPROACH | 4R, 15R, 27, 33L |

* INCLUDES TRANSITION FROM PREVIOUS CRITERIA
^ CAT 1 AND CAT 3
^^ CAT 3 SHIFTED 200 NW
** ACCOUNTS FOR 7 1 DRIFT DOWN

N W E S

massport

**VERSION 2.0** **December 2011**

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**Massachusetts Port Authority**
*Real Estate & Asset Management*
*April 2017*

0′ 500′ 1000′ 2000′

# Conley Terminal Master Plan
## (2018-2023 Implementation)
*South Boston*

# CITY OF BOSTON
# THE ENVIRONMENT DEPARTMENT

Boston City Hall, Room 709 • Boston, MA 02201 • 617/635-3850 • FAX: 617/635-3435


June 29, 2017

**BOSTON LANDMARKS COMMISSION**

Mr. Gary R. Uter
Project Manager
Boston Planning & Development Agency
One City Hall Square
Boston, MA 02201

RE: Edison Power Plant - Project Notification Form

Dear Mr. Uter:

Staff of the Boston Landmarks Commission (BLC) has reviewed the Project Notification Form (PNF) submitted for the Edison Power Plan project referenced above and have the following comments:

Thank you for the opportunity to comment on the L Street Station Redevelopment, a proposed development of a complex of industrial buildings bordered by Summer Street, E. 1st Street, and the Reserved Channel. Staff commends the mixed-use proposal, which has great potential to revitalize an area of South Boston that will benefit from new housing, an arts area, and other proposed uses. BLC staff is aware of the challenges inherent in adaptively re-using power plants and similar large-scale utilitarian structures. BLC staff particularly commends the effort to restore and incorporate the historic turbine hall, an outstanding, and relatively well-preserved, example of the Powerhouse Renaissance style.

However, it is worth noting that the entire complex is historically significant and individually eligible for listing on the National Register. The complex contains three unique "blocks". The block in the northeast corner of the plan contains an austere neo-Romanesque building from 1898, which constitutes a rare example of a nineteenth-century power plant in Boston. The middle block, built between 1904 and 1908, contains the turbine hall, which is the most ornamental of the site's buildings, as well as other buildings that have been altered but which have some remaining historic features. The largest-scale block at the northwest corner dates from 1962-1967. While this block has been repeatedly altered and is lacking in adornment, it reflects post-War utilitarian aesthetics and is a key part of the "New Boston" development plan. Perhaps most importantly, as a whole, the complex represents an evolution of a building typology, technological innovations, and a century of transformations within electrical power generation and distribution.

According to the Massachusetts Historical Commissioner (inventory form BOS.12943):

> *Architecturally, the L Street Station displays the full developmental range of American architectural solutions to the large enclosed spaces of electrical generating stations, a new building type which were extremely functional and rationally-organized engineering works. The 1898 section was built in the Romanesque or "basilica" style and form typical of late nineteenth-century shop and foundry buildings, and derivative of the Richardsonian Romanesque style popular at that time. The 1904-1908 Winslow and Bigelow sections show the powerful influence of the Neoclassical as popularized by McKim, Mead and White at the 1893 Chicago World Columbia Exposition, which derived not just its Classical order but its sense of scale from massive Roman public works such as the Baths of Caracalla. This choice, according to a contemporary critic, "succeeded in making [it] imposing and even ornate without making it incongruous with its purpose". (Power 1905:389). The 1922 south*

*boiler house addition represents the transition of utility architecture to the more severe appearance referred to as stripped classicism, which retained materials and organizational schemes of the Renaissance Revival idiom and combined them with the abstract aesthetics of Art Deco or Moderne. The succeeding mid-nineteenth century design with its four identical stacks, polychrome palette and prominent federally-mandated rooftop emissions superstructure has been shrouded by the mantle of the contemporary treatment which covers the entire structure in a massive rectilinear metal sheath* [sic].

Because of the buildings' historic importance, BLC staff encourages the applicant to pursue every possible means of preserving the complex, its key and defining features, its utilitarian aesthetic and history, and especially its industrial scale. Realizing that preservation of the entire complex is costly and challenging, especially to accommodate much-needed housing, staff is concerned that the current proposal sanitizes the site of its industrial texture and narrative. 5.1

Staff recommends the strategic re-use of select features. A few of the features that could be preserved include outbuildings, the intact facades of the 1898 building (northwest corner), and the intact western façade from the boiler room at the southwestern corner of the site. Most importantly, preserving one or more of the smokestacks - even as a symbolic reminder of an historic narrative - will help connect the current proposal to the site's past. 5.2

Staff recommends a strategic use of an industrial palette of materials and tectonics within the new proposal in a manner that acknowledges (without directly imitating) the industrial aesthetic and history of the site. Staff also encourages the applicant to consider building and restoring at a scale that reflects the existing industrial scale of the site. A larger scale will acknowledge the site's history and will distinguish this project from similar programs and developments elsewhere, 5.3

Finally, it is important to note that the proposed demolition of buildings will entail Article 85 review. Since the site is eligible for National Register listing, the project will likely require an Article 85 community meeting and hearing. BLC staff encourages the applicant to submit an Article 85 application as early in the process as possible. The community meeting can be done in concert with other community meetings and staff encourages this to minimize the number of community meetings, as well as ONS's workload. The Article 85 community meeting also requires the presentation of alternatives to demolition, which affords an opportunity to consider comments above or other approaches that help preserve integral facets of a key part of South Boston's history. 5.4

Please do not hesitate to contact BLC staff at (617) 635-3850 if you have any questions.

Sincerely,



Todd Satter
Staff Architect

# BOSTON

Martin J. Walsh, Mayor

August 4, 2017

Ms. Teresa Polhemus
Boston Redevelopment Authority
One City Hall Square
Boston, MA 02201

RE: 776 Summer Street

Dear Ms. Polhemus:

The Boston Parks and Recreation Department (BPRD) has reviewed the ENF/EPNF for the redevelopment of the L Street Station at 776 Summer Street in South Boston. This project is across the street from, and within 100' of Christopher Lee Playground / Medal of Honor Park. This active recreational space will serve as an amenity to the new development.

The project is subject to design review by the Boston Parks and Recreation Commission under Municipal Code Section 7-4.11. In addition, BPRD provides the comments below in order to inform the BPDA's Scoping Determination and a future Draft Environmental Impact Report.

**Impact Mitigation**

In summary of the below, the scale and proximity of the project will have a significant impact on Christopher Lee Playground / Medal of Honor Park. BPRD respectfully requests that mitigation commensurate to the impact of the development be provided in the form of a contribution to the City's Fund for Parks, to be used for public open space in South Boston. 6.1

BPRD further requests that the proponent enter into a maintenance agreement to provide turf management and other services at Christopher Lee Playground / Medal of Honor Park.

**Project Description**

The project includes the redevelopment of a 15 acre site with 2.1 million sf of residential, office, hotel, retail, and restaurant use, and ancillary parking. Of this, there will be five blocks with 1.5 million sf of residential use. The ENF/EPNF does not detail the unit size or mix. However, the document notes there will be 1588 units and 2220 bedrooms. BPRD therefore estimates the proposed project will accommodate approximately 2000-3000 residents. These residents will utilize existing and limited public parks and playgrounds in South Boston for active recreation.

**Onsite Open Space**

The ENF/EPNF notes that the 15 acre project site will include 104,500 sf (2.4 acres) of open space including a publicly accessible waterfront area (1.15 acres). Further detail is needed to understand the proposed open space, as the submittal provides conceptual ideas and narrative. 6.2

The waterfront area appears to be Chapter 91 310CMR9.51(30(d) open space mitigation, including the provision of the required Harbor Walk. The narrative further describes a small park next to the Turbine Hall at Elkins Street Extension. It also describes an open space at the terminus of Elkins Street and M Street, between Block A and Block F. Finally, an open space will be provided at the corner of Summer and East 1st Street. The remainder of the onsite open space appears to include rooftop decks and spaces located between building blocks.

**Open Space Requirements Under Zoning**

The underlying zoning for this 15 acre site appears to be Article 42A Harborpark District, which requires that a project devote at least 50% of the lot area to open space. The project will seek a Planned Development Area (PDA) approval to allow the project to receive relief from zoning for height, density and open space requirements. It will be important in negotiating the PDA, to understand how the project will meet the base open space requirements under the current zoning.

It is not clear how the open space is being counted under zoning. Public realm features such as streets, sidewalks, plazas, retail corridors and pedestrian ways have limited open space value and are not a substitute for park land available for recreational use. Greater detail is needed to understand how the open space will meet the recreational needs of the residents and the public. 6.3

**Open Space and Recreation Plan**

BPRD has advocated for permanently-protected, publicly-accessible park land in South Boston, to serve the active recreational needs of this rapidly growing neighborhood and to balance significant new development that is dense in scale and often lacking in on site open space. This project should detail how it intends to meet the goals and needs for South Boston as identified in the *Open Space and Recreation Plan 2015-2021*. 6.4

**Parks Needs Analysis**

A parks needs analysis should be completed based on projected residents, workers and visitors. This analysis should include an estimate of the demand for active recreational needs, the ability to accommodate those needs onsite, and/or the reliance on existing public open space in the neighborhood. In the event that active uses cannot be accommodated onsite, the equivalent amount of park land should be mitigated nearby. This need could also be addressed by contributing to a fund for development of future public park land in the neighborhood. 6.5

**Public Realm**

The public realm should include inviting, vibrant, public spaces that can provide civic functions in addition to retail plaza functions. This can be achieved by fronting these spaces on the public rights of way, or broadening the points of connection. Public spaces could also be transferred to public ownership, ensuring that their future design and uses will be informed by the public. 6.6

**Protection in Perpetuity**

Parks should ideally be permanently protected to ensure that they remain open in perpetuity. 6.7

**Dog Recreation Space**

The project should include a Dog Recreation Space onsite. Though it is adjacent to a dog park, the high density of development would burden one of the few dog parks available in the city. The project should therefore plan to accommodate the needs of its canine residents onsite. 6.8

**Construction Impacts**

The proponent should detail any potential construction impacts (noise, air quality, traffic impacts, etc.) that may impact Christopher Lee Playground / Medal of Honor Park. 6.9

**Conclusion**

The scale and proximity of the project will have a significant impact on Christopher Lee Playground / Medal of Honor Park and should be mitigated as appropriate. BPRD looks forward to meeting with the proponent and the BPDA to discuss the provision of park land as a critical amenity to serve the residents of this development as well as the public.

Sincerely,

Carrie Marsh

Carrie Marsh, Executive Secretary
Boston Parks and Recreation Commission

cc: Christopher Cook, Commissioner, Boston Parks and Recreation Department
Liza Meyer, Chief Landscape Architect, Boston Parks and Recreation Department
Jon Greeley, Director of Development Review, Boston Redevelopment Authority
Tim Czerwienski, Project Manager, Boston Planning and Development Agency

**Boston Water and Sewer Commission**

980 Harrison Avenue
Boston, MA 02119-2540
617-989-7000

June 30, 2017

Secretary Matthew A. Beaton
Executive Office of Energy and Environmental Affairs
Attention: MEPA Office
Alex Strysky, EEA No. 15692
100 Cambridge Street, Suite 900
Boston, MA 02114

and

Mr. Gary R. Uter
Project Manager
Boston Planning and Development Agency
One City Hall Square
Boston, MA 02201

Re: L Street Station
Environmental Notification Form /
Expanded Project Notification Form

Dear Secretary Beaton and Mr. Uter:

The Boston Water and Sewer Commission (Commission) has reviewed the Environmental Notification Form (ENF) and the Expanded Project Notification Form (EPNF) for the proposed redevelopment project located at 776 Summer Street in the South Boston neighborhood of Boston.

The proposed project is located on a 15-acre site bordered by the Reserve Channel, Summer Street and East First Street. The site was formerly occupied by Boston Edison's electric generating facility and has several buildings and support structures that were used for electric generation. The ENF/EPNF summarizes an alternative development scenario to the preferred scheme. The project proponent HRP 776 Summer Street, LLC's (HRP), proposed preferred alternative is to raze the existing structures with the exception of the Turbine Hall and construct a mixed use development over a ten year period. The project will include rehabilitation of the exiting Turbine Hall and construction of eight buildings totaling 2.1 million square feet (sf). The building heights will vary from 44 to 220 feet. The eight buildings will have approximately 339,639 sf. of office space, 68,077 sf. of retail space, 1,588 residential unit, a 150 room hotel and parking spaces for 987 vehicles. Site improvements include approximately 104,500 sf of outdoor public space.

For water service, the Commission owns and maintains a 12-inch water main in East First Street and a 12-inch water main in Summer Street. The water mains are part of the Commission's Southern Low Pressure Zone.

Sewer and drainage of the site is provided by a 12-inch sanitary sewer and an 18-inch storm drain in East First Street. Summer Street has an 30- inch by 24-inch combined sewer overflow pipe that increases to a 30-inch pipe and an 15-inch sanitary sewer that increases to an 18-inch pipe.

The ENF/EPNF states water demand for the proposed development is estimated to be 329,890 gallons per day (gpd) and wastewater generation is estimated to be 299,900 gpd.

The Commission has the following comments regarding the proposed project:

General

1. Prior to demolition of any buildings, all water, sewer and storm drain connections to the buildings must be cut and capped at the main pipe in accordance with the Commission's requirements. The proponent must then complete a Termination Verification Approval Form for a Demolition Permit, available from the Commission and submit the completed form to the City of Boston's Inspectional Services Department before a demolition permit will be issued. 7.1

2. All new or relocated water mains, sewers and storm drains must be designed and constructed at HRP's expense. They must be designed and constructed in conformance with the Commission's design standards, Water Distribution System and Sewer Use Regulations, and Requirements for Site Plans. To assure compliance with the Commission's requirements, the proponent must submit a site plan and a General Service Application to the Commission's Engineering Customer Service Department for review and approval when the design of the new water and wastewater systems and the proposed service connections to those systems are 50 percent complete. The site plan should include the locations of new, relocated and existing water mains, sewers and drains which serve the site, proposed service connections as well as water meter locations. 7.2

3. The Department of Environmental Protection (DEP), in cooperation with the Massachusetts Water Resources Authority and its member communities, is implementing a coordinated approach to flow control in the MWRA regional wastewater system, particularly the removal of extraneous clean water (e.g., infiltration/inflow (I/I)) in the system. In April of 2014, the Massachusetts DEP promulgated new regulations regarding wastewater. The Commission has a National Pollutant Discharge Elimination System (NPDES) Permit for its combined sewer overflows and is subject to these new regulations [314 CMR 12.00, section 12.04(2)(d)]. This section requires all new sewer 7.3

connections with design flows exceeding 15,000 gpd to mitigate the impacts of the development by removing four gallons of infiltration and inflow (I/I) for each new gallon of wastewater flow. In this regard, any new connection or expansion of an existing connection that exceeds 15,000 gallons per day of wastewater shall assist in the I/I reduction effort to ensure that the additional wastewater flows are offset by the removal of I/I. Currently, a minimum ratio of 4:1 for I/I removal to new wastewater flow added is used. The Commission supports the policy, and will require proponent to develop a consistent inflow reduction plan. The 4:1 requirement should be addressed at least 90 days prior to activation of water service and will be based on the estimated sewage generation provided on the project site plan. 7.3

4. The design of the project should comply with the City of Boston's Complete Streets Initiative, which requires incorporation of "green infrastructure" into street designs. Green infrastructure includes greenscapes, such as trees, shrubs, grasses and other landscape plantings, as well as rain gardens and vegetative swales, infiltration basins, and paving materials and permeable surfaces. The proponent must develop a maintenance plan for the proposed green infrastructure. For more information on the Complete Streets Initiative see the City's website at http://bostoncompletestreets.org/ 7.4

5. For any proposed masonry repair and cleaning HRP will be required to obtain from the Boston Air Pollution Control Commission a permit for Abrasive Blasting or Chemical Cleaning. In accordance with this permit HRP will be required to provide a detailed description as to how chemical mist and run-off will be contained and either treated before discharge to the sewer or drainage system or collected and disposed of lawfully off site. A copy of the description and any related site plans must be provided to the Commission's Engineering Customer Service Department for review before masonry repair and cleaning commences. HRP is advised that the Commission may impose additional conditions and requirements before permitting the discharge of the treated wash water to enter the sewer or drainage system. 7.5

6. The Commission will require HRP to undertake all necessary precautions to prevent damage or disruption of the existing active water and sewer lines on, or adjacent to, the project site during construction As a condition of the site plan approval, the Commission will require HRP to inspect the existing sewer lines by CCTV after site construction is complete, to confirm that the lines were not damaged from construction activity. 7.6

7. It is HRP's responsibility to evaluate the capacity of the water, sewer and storm drain systems serving the project site to determine if the systems are adequate to meet future project demands. With the site plan, HRP must include a detailed capacity analysis for the water, sewer and storm drain systems serving the project site, as well as an analysis of the impacts the proposed project will have on the Commission's water, sewer and storm drainage systems. 7.7

8. HRP should be aware that the US Environmental Protection Agency issued the Remediation General Permit (RGP) for Groundwater Remediation, Contaminated Construction Dewatering, and Miscellaneous Surface Water Discharges. If groundwater contaminated with petroleum products, for example, is encountered, HRP will be required to apply for a RGP to cover these discharges. 7.8

Water

1. HRP must provide separate estimates of peak and continuous maximum water demand for residential, commercial, industrial, irrigation of landscaped areas, and air-conditioning make-up water for the project with the site plan. Estimates should be based on full-site build-out of the proposed project. HRP should also provide the methodology used to estimate water demand for the proposed project. 7.9

2. The Commission supports HRP's commitment to explore opportunities for implementing water conservation measures in addition to those required by the State Plumbing Code. In particular, HRP should consider outdoor landscaping which requires minimal use of water to maintain. If HRP plans to install in-ground sprinkler systems, the Commission recommends that timers, soil moisture indicators and rainfall sensors be installed. The use of sensor-operated faucets and toilets in common areas of buildings should be considered. 7.10

3. HRP is required to obtain a Hydrant Permit for use of any hydrant during the construction phase of this project. The water used from the hydrant must be metered. HRP should contact the Commission's Meter Department for information on and to obtain a Hydrant Permit. 7.11

4. The Commission is utilizing a Fixed Radio Meter Reading System to obtain water meter readings. For new water meters, the Commission will provide a Meter Transmitter Unit (MTU) and connect the device to the meter. For information regarding the installation of MTUs, HRP's should contact the Commission's Meter Department. 7.12

Sewage / Drainage

1. In conjunction with the Site Plan and the General Service Application HRP will be required to submit a Stormwater Pollution Prevention Plan. The plan must: 7.13

   - Identify specific best management measures for controlling erosion and preventing the discharge of sediment, contaminated stormwater or construction debris to the Commission's drainage system when construction is underway.

   - Include a site map which shows, at a minimum, existing drainage patterns and areas used for storage or treatment of contaminated soils, groundwater or stormwater, and

the location of major control structures or treatment structures to be utilized during the construction.

- Specifically identify how the project will comply with the Department of Environmental Protection's Performance Standards for Stormwater Management both during construction and after construction is complete. 7.13

2. As stated in the ENF/EPNF, a NPDES General Permit for Construction from the Environmental Protection Agency and the Massachusetts Department of Environmental Protection is required. A copy of the permit and any pollution prevention plan prepared pursuant to the permit must be provided to the Commission's Engineering Services Department, prior to the commencement of construction. The pollution prevention plan submitted pursuant to a NPDES Permit may be submitted in place of the pollution prevention plan required by the Commission provided the Plan addresses the same components identified in item 1 above. 7.14

3. The Commission encourages HRP to explore additional opportunities for protecting stormwater quality on site by minimizing sanding and the use of deicing chemicals, pesticides, and fertilizers. 7.15

4. The discharge of dewatering drainage to a sanitary sewer is prohibited by the Commission. HRP is advised that the discharge of any dewatering drainage to the storm drainage system requires a Drainage Discharge Permit from the Commission. As stated previously, if the dewatering drainage is contaminated with petroleum products, HRP will be required to obtain a Remediation General Permit from the Environmental Protection Agency (EPA) for the discharge. 7.16

5. HRP must fully investigate methods for retaining stormwater on-site before the Commission will consider a request to discharge stormwater to the Commission's system. The site plan should indicate how storm drainage from roof drains will be handled and the feasibility of retaining their stormwater discharge on-site. Under no circumstances will stormwater be allowed to discharge to a sanitary sewer. 7.17

6. Sanitary sewage must be kept separate from stormwater and separate sanitary sewer and storm drain service connections must be provided. The Commission requires that existing stormwater and sanitary sewer service connections, which are to be re-used by the proposed project, be dye tested to confirm they are connected to the appropriate system. 7.18

7. The Commission requests that HRP install a permanent casting stating "Don't Dump: Drains to Boston Harbor" next to any catch basin created or modified as part of this project. HRP should contact the Commission's Operations Division for information regarding the purchase of the castings. 7.19

8. If a cafeteria or food service facility is built as part of this project, grease traps will be required in accordance with the Commission's Sewer Use Regulations. HRP is advised to consult with the Commission's Operations Department with regards to grease traps. 7.20

9. The enclosed floors of a parking garage must drain through oil separators into the sewer system in accordance with the Commission's Sewer Use Regulations. The Commission's Requirements for Site Plans, available by contacting the Engineering Services Department, include requirements for separators. 7.21

10. The Commission requires installation of particle separators on all new parking lots greater than 7,500 square feet in size. If it is determined that it is not possible to infiltrate all of the runoff from the new parking lot, the Commission will require the installation of a particle separator or a standard Type 5 catch basin with an outlet tee for the parking lot. Specifications for particle separators are provided in the Commission's requirements for Site Plans. 7.22

Thank you for the opportunity to comment on this project.

Yours truly,

John P. Sullivan, P.E.
Chief Engineer

JPS/rja

C: R Cox, Redgate
M. Connolly, MWRA via e-mail
M. Zlody, BED via e-mail
P. Larocque, BWSC via e-mail

# BOSTON PRESERVATION ALLIANCE

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**Executive Director**
Gregory J. Galer, Ph.D.

August 4, 2017

Mr. Tim Czerwienski
Boston Planning and Development Agency
One City Hall Square
Boston, MA 02201
Via email: tim.czerwienski@boston.gov
**Re: 776 Summer Street, South Boston**

Dear Mr. Czerwienski,

The Boston Preservation Alliance is Boston's primary, non-profit advocacy organization that protects and promotes the use of historic buildings and landscapes in all of the city's neighborhoods. With 40 Organizational Members, 98 Corporate Members, and a reach of 35,000 friends and supporters we represent a diverse constituency advocating for the thoughtful evolution of the city and celebration of its unique character. We appreciate the opportunity to offer comments on projects that impact the historic character of the city.

The Alliance has had the opportunity to visit the power plant site at 776 Summer Street and participate in a recent public meeting. We applaud the proponent's efforts to add vibrancy and energy back to this site through the proposed mixed-use redevelopment, and appreciate their extensive community outreach early in the process.

This large industrial and engineering complex was the site of important developments of the electrical industry not just for Boston but for the nation. The evolution and growth of the site and its buildings reflect the changes and innovation in the technology of power generation as demand grew here in Boston. Evidence of those developments are visible in the buildings themselves both inside and out. From the late 19th to just a decade ago, from early D.C. power to modern generation, this site still speaks to the critical importance of industrial infrastructure to our social and economic development. In an age when so much of our technology exists in small, black boxes it is not surprising that there is great interest in the unique, mechanical, and industrial physicality of places such as this. Additionally, many aspects of this property reflect an age when industrial sites were framed within buildings that paid greater attention to design and detail than they do today. Decorative tiles, lighting fixtures, and other adornments tell an important lesson of how culture embraced technology. Many significant architectural, engineering, and design elements of the existing structures are important parts of the redevelopment of the site, and we believe will play an essential role in the differentiation, marketing, and exuberance for

The Otis House
141 Cambridge Street
Boston, MA 02114
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bostonpreservation.org

this property in its new use. We are confident that preservation will play an important and necessary role in the success of this project.

Therefore, while we recognize that redevelopment of the site and its transformation from a heavy industrial use requires significant removal of equipment and demolition of portions of the site, we also encourage the proponent to incorporate as much of the historic fabric into the project as possible. We understand that power plants in particular present unique challenges; structure and mechanical equipment can be integral to each other and the demolition of interior contents to provide available space for new uses may necessitate the loss of exterior walls. However, we also recognize that there are many instances where important, contributing structure can be saved for new uses. 8.1

We agree with the proponent that the most significant features of the site are within the three turbine halls and we greatly appreciate the proposal for their restoration and reuse. We strongly encourage and support the sensitive incorporation of the turbine halls into the project. Doing so not only would integrate the history of the site into the new development, but would salvage many interesting architectural features such as vibrant green tile, arched windows, and several pieces of historically significant machinery. This unique space could be the centerpiece of the development and create a sense of place for the site. We do feel, however, that if the turbine halls are the only buildings of the power plant to remain on the site and were to be engulfed by new development, their context would be lost.

Therefore, we encourage the proponent to rehabilitate the oldest building on the site, the c. 1898 masonry building beside the turbine halls, as well. This would retain visual continuity between the surviving structures and maintain the industrial context that makes this site unique from the exterior. We look forward to dialog with the proponent, review agencies, and the community about how these historic buildings can become an important part of the project and its success. 8.2

The Alliance also has concerns about the proposal to insert an interior street for vehicular traffic through the turbine hall. While we understand that site circulation is important and that there is significant concern about traffic in the neighborhood, we are concerned that this intervention may adversely effect to the historic spaces, their visual continuity, and their use. We encourage the proponent to present more information about why this interior street is necessary and what impacts it will have across the site. Similarly, discussion of new penetrations into the walls of the turbine halls for new windows requires further discussion. With reopening of the windows of the clerestory monitor of the roof we feel there is opportunity to generate significant natural light without disruption of the character-defining tile walls. 8.3

We are encouraged in many ways by the initial proposal and the skilled team working on the project, including members with significant experience adapting industrial sites to modern uses. While we cannot fully embrace all aspects of the initial filing, we look

forward to engaging further as this project evolves. We are confident that our recommendations will be seriously considered and we will have opportunity to discuss them further.

Sincerely,



Greg Galer
Executive Director

CC:

Gregory Bialecki, Redgate
Albert Rex, MacRostie Historic Advisors
Elizabeth Grob, VHB

July 7, 2017

Secretary of Energy and Environmental Affairs Matthew A. Beaton
Executive Office of Energy and Environmental Affairs (EEA)
Attn: MEPA Office, Alex Strysky
100 Cambridge Street, Suite 900
Boston MA 02114

Brian Golden, Director
Boston Planning and Development Agency
Boston City Hall
Boston, MA 02201

Re: EEA No. 15692, L Street Power Station Redevelopment, South Boston
ENF/Expanded PNF

Dear Secretary Beaton and Director Golden:

WalkBoston is pleased to see the proposal for a mixed use development of the large South Boston waterfront site that will include the re use of the historically and architecturally interesting L Street Power Station. Putting this portion of the City back into a productive use that invites public access is a positive change for the City and for South Boston.

The overall site design will help to integrate this large parcel into the neighborhood, and create new opportunities for people to walk from East 1st Street to the waterfront and help to link the residential portions of South Boston into the site which was long cut off from the community by fences and other obstructions. The partial extension of the local street network onto the site and between and around new buildings proposed for the site seems appropriate in scale. With sidewalks that are sufficiently wide and landscaped, both community residents and people living on site will be served by the new connections.

Our comments below are focused on questions that we hope the proponent will respond to in subsequent filings about the project.

1. Waterside Pedestrian and Open Space Environment
   We understand that the new dedicated harborside freight corridor that will connect Summer Street to Massport's Conley Terminal and remove heavy truck traffic from East 1st Street will provide very important, and long desired improvements to the South Boston neighborhood. But this shift will also present challenges; the new harborside route will place an access barrier and significant truck traffic (with its accompanying noise and air pollution) between the development site's primary open space and the harbor. 9.1

   We urge the developer to consider creative ways to mitigate the truck route's impact on the open space. This could include grade changes that place the open space higher than the truck route (Figure 3.5b may hint at this); landscaping that both masks and frames views, soundscapes to mask truck noise, and the addition of viewing platforms that allow open space users to gain unimpeded views of the water. There may also be ways to capitalize on the site's

industrial past and on going use through interpretive elements. WalkBoston is concerned that without such special treatment the open space will not be very attractive to the public.

If possible, the proponent might also explore with Massport whether it would be possible to schedule truck traffic so that is interferes less with daytime and weekend use of the open space.

9.1

2. Encouragement of walking and walking transit trips
   At the direction of the City, the proponent has used South Boston adjusted trip generation rates to develop trip tables for walking/biking, transit and vehicles. However, the site is at a significant distance from other land uses that would seem to justify such significant numbers of walking trips, and to suffer from overused bus lines and significant distances to the Red and Silver Lines. Figure 5 1 illustrate the 5 and 10 minute walking zones, neither of which include a great many retail, job and civic land uses.

   We urge the proponent to develop mitigation measures to make the development a more realistically mixed mode project. These could include such things as: subsidies to the MBTA to provide more frequent bus service, or creation or partnering with other South Boston developments to provide shuttle services to the Silver and/or Red Lines.

9.2

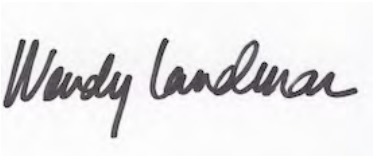
3. Bicycle facilities
   The proponent mentions that Boston has flagged both East 1st Street and Summer Street for protected bicycle facilities, however Figure 3.5a shows an on street bike lane.

   We urge the proponent to work with the City, and perhaps provide funding for, separated bicycle facilities on both East 1st Street and Summer Street. The distance of the site from transit and a mix of retail, job and civic facilities will make bicycling a more likely mode of off site trips than walking.

9.3

We look forward to working with the City and Redgate as the project plans are developed in greater detail.

Sincerely,



Wendy Landman
Executive Director

Cc Ralph Cox, Greg Bialecki, Megha Vadula, Redgate
Elizabeth Grob, VHB

Received 8/21/17

Mr. Tim Czerwienski, Project Manager
Boston Planning & Development Agency
1 City Hall Square, 9th Floor
Boston, MA 02201

Dear Mr. Czerwienski:

We are writing on behalf of the Boston Marine Park Business Association, located in the Raymond L Flynn Marine Park, Summer Street, South Boston, Massachusetts. The Association is committed to maintain and promote our member businesses within the maritime, industrial and commercial character of the Park.

As a group, we wish to express our concerns re the proposed development of 776 Summer Street (Boston Edison Plant).

Firstly, the proposed project is predicted to generate over 10,000 vehicle trips per day. Much of this newly generated traffic will pass immediately in front of the Park, competing on the very limited capacity roadways, with the already heavy truck, employee and business traffic presently serving our businesses within the Park. In particular, the increase of vehicle trips competes directly with existing truck traffic along authorized truck routes designed to serve the needs of the Park and Conley terminal. Existing traffic and mass transit concerns are presently under duress and the addition of over 10,000 vehicle trips per day, along with proportionate increases in pedestrian traffic and parking demand are issues that urgently need to be well investigated. 10.1

Secondly, the proposed project would require removing the site from its present status within the Designated Port Area (DPA). This change in designation would be in advance of completion of $1 billion dollars in infrastructure improvements to the dredging of Boston Harbor and landside improvements to Conley Terminal. It is likely that these investments in the Working Port will lead to additional maritime dependant business activities looking to locate within the DPA in anticipation of location and competitive advantages. Careful analysis should be required to determine that, with infrastructure investments, suitable land area remains available to accommodate these needs. 10.2

Thank you for your kind attention and consideration of our concerns in this matter. The Boston Marine Park Business Association would welcome the opportunity to be more involved in this discussion.

Sincerely,

Tom Caterino
BMPBA President

365 West Broadway
South Boston, MA 02127
tel: 617.268.9610
fax: 617.268.4813

August 1, 2017

Tim Czerwienski
Boston Planning & Development Agency
One City Hall Square
Boston, MA 02201
bostonplans.org

Re: 776 Summer Street, South Boston (L Street Station Redevelopment)

Dear Mr. Czerwienski:

I am writing to express my concerns about the proposal to develop the former Boston Edison plant at 776 Summer Street in South Boston. I am the Executive Director of South Boston Neighborhood Development Corporation and a long time neighborhood resident. Over the last 10 years, many of our friends and neighbors have been displaced from the community because of the dramatic increase in housing costs. The proposed development of the Edison Plant will have serious negative impacts on our neighborhood and fails to address the urgent need for affordable housing for working families and the elderly.

Hilco/Redgate, the developer, is proposing to build a dense development with a hotel, commercial/retail and nearly 1,600 units of housing. Their plan to include only the minimum 15% affordable units on the site should be increased to at least 30% of the units to address the community need for affordable housing. Too often with past developers, the South Boston neighborhood has settled for only the minimum in affordability. This site should be developed in an inclusive manner, to offer housing opportunities to a wide range of residents. 11.1

In addition to increasing the percentage of affordable units, the proposed development should include units that are affordable to the elderly and working families. The City's Inclusionary Development requirement is not adequate to address this critical neighborhood need because the income levels for IDP units are not low enough to address the needs of low income workers who earn less than $50,000 annually. Elderly residents are most at risk of displacement because their income is usually below $25,000 annually. 11.1

South Boston deserves a greater percentage of affordability to mitigate the impacts of this project. We do not need more luxury housing; we need ownership and rental opportunities for working families and deeply affordable housing for the elderly.

Thank you for this opportunity to comment.

Best Regards,



Donna Brown

Executive Director

Tim Czerwienski <tim.czerwienski@boston.gov>

# 776 Summer Street proposals

Dan McCole [redacted] Fri, Aug 4, 2017 at 9:41 PM
To: tim.czerwienski@boston.gov

August 4, 2017
Tim Czerwienski
Project Manager
Boston Development and Planning Agency

Statement by the South Boston Board of Directors … (SBAA)

In March of last year (2016) officers of the South Boston Arts Association contacted the officers of Redgate/Hilco, developers of the former Boston Edison power plant at 776 Summer Street, and proposed an arts and cultural community center in their redevelopment plans. Since then the developers held four well advertised sessions at the Tynan School auditorium. The Boston Planning and Development Agency also held four sessions … all advertised and promoted and open to the public.

Highlighted among the many subjects addressed were:

Traffic Issues : Traffic on First and Summer especially during the drive time 7:30 to 9:30 and 3:30 to 6:30 in the afternoons has been a problem for many years. It was made plain to the developers that this is a must concern for the people who took the time to attend the meetings.

Environmental Issues: Questions were asked and concern stressed that any residue environmental hazards need to be addressed.

Parking: Lack of convenient parking spaces for residents is the perennial problem in today's South Boston.

Affordable Housing: We need more housing for our seniors at affordable rent.

We have seen redevelopment change the physical nature of South Boston without any apparent interest in the wishes and life style of its residents.

The developers have said they will consider all aspects of the resident's concerns.

The SBAA commends the redevelopers, Redgate/Hilco, for their openness and transparency regarding their proposed plans and their wise decision to ask for suggestions from all South Boston residents through their many publicly advertised meetings. The Redgate/Hilco people listened and we are fully confident that they have learned of the wishes and needs of our community.

The officers, board of directors and the membership of the South Boston Arts Association have listened to the developer and the residents who took the time to attend these meetings and at this time we stand firmly behind the developer's proposals.

Since our beginning the SBAA has been seeking a site to establish a South Boston Arts and Cultural Community Center. The need for this was apparent as the public schools had abandoned any serious need for Arts Programming in the adoption of their core curriculum for the city's youth. This need was also visible during the 15 years the SBAA has been in operation. Many adult residents (working residents and retired seniors) who had sought to accommodate their suppressed art talents late at night … in their kitchens, basements and attics became members of the SBAA and found a second home … and many new friends who nourished and encouraged their talents. Quite a few have progressed as writers, painters, photographers, performers and many others as friends of the arts.

And as the membership grew it became apparent that the latent need for many in our membership ranks grew into a definite must for space in support of their needs.

Eight years ago the city announced they were accepting proposals for the use of the abandoned D Street Police station (Station 6) by the City of Boston Neighborhood Development Agency for redevelopment. The SBAA joined with associated residents and produced an RFP for plans for an arts and community center. Apparently we were too late … the plans for a small housing development had already been arranged and we lost out.

We then went after the closed St Augustine Church on Dorchester Street. It was up for sale and redevelopment. We partnered with a development firm who would purchase the church, rectory and the school and then sell the church back to the SBAA for an Arts and Cultural Community Center. This development opportunity was eventually denied by the Archdiocese.

The SBAA has been partnering with the South Boston Community Health Center in their youth program since 2006 in youth art programs, including the Lighthouse street art programs … murals, and basic community sessions, such as street cleaning, and for 12 years cosponsored spring break traveling work teams to disaster areas: New Orleans, and Mississippi. For Katrina Hurricane rebuilding, Tuscloosa, Alabama for severe Tornado damage … Long Island for Hurricane damage … and Detroit, Michigan for 2015 Flood disaster.

We seek a small Arts and Cultural Community Center in this new proposal because it would serve all residents … young and old … male and female … long time and newer residents … talented artists and not so much … art-lovers and just plain people.

12.1

One more thing ... Where have these latecomers been for the past 15 months? And what stirred the nest?

Thank you for this opportunity.

Dan McCole, president
South Boston Arts Association

August 4, 2017

Tim Czerwienski
Project Manager
Boston Planning & Development Agency (BPDA)
One City Hall Square
Boston, MA 02201

**Re: Comments on Edison Proposal**

Dear Tim:

This letter is intended to identify impacts the IAG members perceive as well as document the additional impacts identified by residents of the area during the community meetings held or expressed by other means to the IAG members.

We understanding that at this phase of the process, the primary responsibility of the IAG is to identify possible impacts the project will create or conditions of the project that may worsen existing contributors, thus impacting the overall quality of life and rights of the existing residents for "quiet enjoyment of their properties." The undersigned IAG members have been present at the numerous community meetings and have endeavored to reflect the general theme, and in some cases the specific concerns, of those who spoke, as well as cite any perceived impacts that were not necessarily raised during the community meetings.

The undersigned IAG members are of the opinion that Alternative B has not been given the appropriate amount of attention. Although the impacts listed here are somewhat transferable to both options, the IAG has the sense from the community that the preferred option described in the L Street Station Redevelopment document provided by the proponent, is the singular plan being pursued. The IAG requests that Alternative B be given due diligence and attention. We also feel that the responses provided in the scoping document must include this alternative, to address the community impression that only one project type is being pursued. Those community members that did not attend the Charrettes and other community meetings, must have their concerns addressed, and the record documents should include a full chronological telling of just how the preferred option was established. 13.1

We also recognize that some of the issues raised in the community meetings are far beyond the project scope, and will require additional approvals and authorizations from the Commonwealth before the IAG and City processes can begin to play out. The city planners (BPDA, etc.) must do a better job communicating with their own departments, collaborating with state agencies (and federal agencies, if necessary), and must do a better job communicating with the South Boston community on how this multifaceted process can efficiently move forward. This theme has been expressed at every community meeting held for this project and for nearly every other project being considered in South Boston. To paraphrase resident comments "South Boston is unique as it is a peninsula with limited access points. It is of vital importance we keep traffic flow open for residents." With three access points on and off this site, this conservatively equates to 3,000 trips daily through each one. We are encouraged that the BPDA appears to be taking a more holistic "Southie" view of the impacts of this project and hope future the planning process will incorporate this "big picture" approach. It is unfortunate that this particular project is being saddled with correction of mistakes made by previous BPDA approval of large scale projects elsewhere in the area. However, developments do not exist in a vacuum and it incumbent on the City of Boston and the BPDA to look at the bigger picture as it moves forward in planning for South Boston and the rest of our city.

The issues we have heard most fervently from members of the neighborhood at the community meetings and through word of mouth (simply speaking with neighbors) are **DENSITY and TRAFFIC**. These issues are foremost in people's minds and have a dependent, symbiotic relationship: higher density means more traffic. These two topics have direct correlations and are intertwined in the minds of the community. These broad-based terms are segmented out into several different categories delineated below as well as a listing of other impacts cited by our neighbors:

**(1) DENSITY:** This is a difficult impact to quantify. There is a general sense that 1,500 residences is much too dense. It certainly would be the highest density in the City Point neighborhood. Although Article 68 in 2015 was geared to attracting residential uses along the 1st corridor, that planning effort did not fathom or anticipate a project of this scale anywhere in City Point or along First Street. Moreover, the recently completed Dorchester Avenue Corridor was intended to absorb larger developments in South Boston--this project, although mirroring the dimensions of the Dot Ave Corridor-- is no where near the growth zone. A development of this size is more appropriate for the SB Waterfront--it is out of place in traditional South Boston. We feel strongly that 1,500 units is too high a number of units. We also recognize that there is a balance that must be struck between less residential units and the numbers associated with impacts like traffic/air quality and public transportation obligations. Most South Boston residents who have attended the meetings have voiced this sentiment. We feel it is up to HRL & BPDA to propose a lower alternative number that meets the project needs and is more in line with housing densities in the immediate surrounding area. 13.2

**(2) TRAFFIC MANAGEMENT:** The problems associated with traffic management are sevenfold. The current traffic along L /Summer Street and 1st street is already over-capacity. The project's projected final buildout (either alternate) will only exacerbate the traffic problems. This project requires a traffic study. The suggested area of study for traffic should be at a minimum, Summer/L beginning at D Street and ending at Columbia road. This is a significant stretch of roadway with multiple intersections, some controlled by lights some not. The current traffic signals along this primary artery are inadequate to handle the current traffic volume, let alone the addition of this project. This project coupled with the (7) other large scale buildings slated for the convention Center area, Seaport District/Fort Point Channel & GE. The traffic Study must take a holistic approach and take into the account the projected vehicle volume of these projects, as no single development exists in a silo. The Day Boulevard/Summer Street/L Street corridor has historically been utilized by South Shore commuters to cut through I-93 traffic to reach the city or the Waterfront. With the growth of Waterfront area and the anticipated growth of Fort Point with GE and Amazon, this route has become clogged and nearly impassable at certain hours of the workday. This is the primary road for many areas of South Boston. The signaling and efficient movement of vehicles along this route is the key to a successful project whatever its configuration on the former Edison plant site. All the intersections from D to Columbia that have traffic signals or are slated to have signals installed via this project or through other City/highway improvement projects must be fully integrated, synchronized, and if possible technologically equipped to be responsive to volume on the roadway. Additionally of concern and adding to the increasing traffic in this area is the growth along 1st street from A st to P st all of these small projects have increased vehicular volume on this east/west corridor onto Summer/L. Those impacts must be factored into the study parameters as well. The foundation has already been set for this study with the South Boston Waterfront Sustainable Transportation Plan, which examined these corridors, and traffic along Summer Street, which is the location of this project. However, that plan did not anticipate the added volume from the GE and Amazon relocations, so further study is necessary. This mandatory traffic study must be fully coordinated and integrated into the City and Transportation agencies ongoing comprehensive transportation plans. Adding to the traffic problems the issue of freight truck traffic in and out of Conley 13.3

terminal is of major concern. The terminal has been able to remain competitive in the freight market due to its current level of efficiency getting trucks in and out of the terminal faster than the majority of the industry. This bypass road has been a long fought for issue for the residents. 2,700 truck trips a day on a residential street was not sustainable or safe. This project's addition of 10,000 vehicular trips a day to the intersection of 1st and Summer Street quite possibly will undo some of the gains made by the construction of the bypass road. The study of traffic should begin immediately and not wait until issuance of the scoping document. To establish a baseline with the trucks still on 1st street, an interim traffic study following the truck route relocation and that impact on the neighborhood. Then expand to include its own contribution and the adjoining area's added vehicular impacts. 13.3

**(3)** **<u>PUBLIC TRANSPORTATION</u>** it is understood that the developer is not responsible for public transportation, but this development will exacerbate substantially the ongoing public transportation problems in the area. Those are in part, overcrowded busses, inconsistent schedules, routes not serving more than one rapid transit interface. The Edison project must engage in dialog with the MBTA to get these issues resolved, especially as the development project sits at the start of the South Boston bus service and will impact service for the rest of the neighborhood and because the HRL development team is relying on MBTA usage for the number of car trips per day in and out of the site. If the MBTA does not deliver on their promises there most certainly will be a greater number of personal car ownership than anticipated. (See parking impact). The BPDA should be requiring of the developer to have contingency plans that if at time of Construction, MBTA service is not functioning according to the numbers presented in the study, then the Edison site parking spot number shall be increased by "X". This increase should be in addition to the parking levels previously discussed. Whether or not the base parking space numbers are above the actual zoning requirements. That excess parking slot number shall not be utilized in any way to meet this surplus commuter parking penalty. The project should include some sort of a covered structure at the corner of 1st and L/Summer. This can either be provided by MBTA or the project, but the intersection must contain a covered structure. The reasoning for this is even if 50% of the residential unit occupants use the MBTA there would be an estimated 300 + people during commuting hours at this corner. The project should also consider establishing a stronger connection to the MBTA platform planned for 1st street. This connection would presumably split the pedestrian traffic coming from the new residences. Again we cite the comprehensive transportation study currently underway as the mechanism to effect real change through cooperative measures with MBTA and roadway administrators. 13.4

**(4)** **<u>AIR QUALITY:</u>** The air quality in this area of South Boston is being assaulted on many levels. Cruise & freight ship traffic, *projected increase beyond the current levels*. Air traffic is *projected to increase beyond current levels*, freight truck *numbers are scheduled to increase*. With this project and the general growth of the area vehicular *levels are also rising*. There must be comprehensive study of these increases and the effects on the health of South Boston residents. Previous studies have noted there is markedly increased levels of Lupus, certain respiratory ailments and cancers in South Boston. The direct cause has yet to be definitively determined. Most certainly the previous abuses by the heavy industrial/marine use of the surrounding area is a major contributing factor of these heightened rates of disease. This project's study of its true impact on the air quality in the area will be overshadowed by the aforementioned abuses and inaction by local, state and federal agencies. The studying of the air quality impacts cannot just simply be a snapshot in time. The study must include long-term time lapse impacts. The areas general growth must be factored into the numbers. Many residents have cited the need for (some have been demanding for decades) a cumulative air-quality study to be performed. Many in the area feel that air monitors must be installed in the community to accurately establish the true particulate levels and contentment. This is by far the largest long-term health impact to the residents. All the 13.5

aforementioned traffic issues play a large role in air quality. Many residents feel proper signal and revised roadway configuration will play a key part in air quality management. Others have expressed that movement of all vehicles in and out of the project area and "Southie" as whole will certainly assist in the management of air quality. (Moving traffic creates less air born particulates than sitting and idling traffic). 13.5

**(5)** **PARKING:** Parking levels as current proposed are wholly inadequate. The current ratio contained in South Boston's current zoning is 1.5 space per unit. This ratio must not be decreased with-in the project area. Most residents feel that this 1.5 is inadequate for this project and should be increased to a ratio of 2.0 spaces per residential unit. The requested 2.0 ratio should not be allowed to include the on street parking slots in the project area. These parking slots should be designated as transient in nature. (i.e. commercial use and consumer use for the multiple community based retail establishments currently envisioned). The streets as currently proposed have raised the subject of what the parking restrictions are and who will enforce those regulations. Additionally who will benefit from the enforcement revenue stream? HRL should clarify this because the streets within the project area are currently proposed as "private ways" In this context the term private ways indicates that the roads will be owned and maintained by the project owners as they are privately held assets. It is not indicated at this time if the roads will contain any access restriction, this also needs to be defined. Residents have also expressed that in a majority of city neighborhoods with similar density levels as South Boston there exists access to a garage (some private some publically owned) during snow events. The South Boston residents have long been requesting such equal treatment. The project must include a snow emergency plan for the project site and parking access plan for the area residents during such emergency at a reduced rate when compared to the general rates during non-emergency events. It is a generally held opinion of the area residents that parking problems cannot be addressed without dramatically increasing the number of parking slots included in the project. Note: All the above parking issues must also be evaluated for: either relief from or overall repeal of the current parking ban imposed by federal statute. 13.6

**(6)** **NOISE:** The current building orientation and site layout is to create two new roads traveling North + South. A concern has been raised that these two roads ways will be creating acoustical conduits directly into the neighborhood from the new Conley terminal truck route and the larger cruise port terminal. There should be a comprehensive noise study (including acoustical modeling) of the project's final configuration. Residents presented anecdotal testimony about an incident. Last year there was work being performed across the channel at the concrete aggregate plant which created a massive noise issue? We realize that the aggregate plant operations are not part of this project but the incident brought to light that the Massport designed sound barrier for the Conley terminal is a complete failure and inadequate to protect the neighborhood, from existing noise levels. How this impacts the Edison project is, the buildings as they currently exist create a barrier for the neighborhood from noise being generated from whatever source across the channel. The Edison team must demonstrate that their project configuration will not worsen the level of noise coming into the neighborhood from the cruise port, aggregate plant activity and the Conley terminal trucks. The residents of south Boston fought for many years to remove the noise of these trucks from first street and are not willing to yield on any ground what so ever relative to those noises. The noise generated by the trucks and marine activity must not be made worse by the Edison site configuration. We do recognize that there are allowable limits of increased noise associated with the project, (i.e. HVAC equipment and general ambient noises associated with any residential/commercial uses). Noise levels must be recorded now, prior to the truck route relocation, and also following the truck route relocation, while the existing buildings are intact. This is the only way to be absolutely sure that the project models are accurate and will reflect reality. Many residents have expressed concern that the current site / road layout will promote and possibly amplify the truck 13.7

generated noise on the new bypass road bridge directly into the neighborhood. If this scenario turns out to be correct the residents are unwilling to yield on noise level increases derived from freight truck or marine traffic. The project should study whether an additional noise barrier(s) at the truck route itself or at the neighborhood side of the site is the most effective. Or if a re-arrangement of the building will be required. 13.7

**(7)** **HISTORIC PRESERVATION:** The complex of existing structure contains many buildings that represent and led the revolution of electricity for the masses. These structures must be retained and preserved. Many residents view the plant with somewhat of a dual personality. Many praise the life their families have had through jobs associated with the plant when operating. But also decry its operation for jeopardizing their health. But most seem to agree the planned demolition goes too far. Many expressed that the arched windows and brick work to the right of the turbine hall must be retained and refurbished. The residents feel connections to the plant as was years ago. The loss of this connection by demolishing such a large percentage of the structures is unacceptable to the residents. Future planning and design of this site must include a greater percentage of preservation. 13.8

**(8)** **FIRST RESPONDERS/PUBLIC SAFETY:** This issue not truly a project specific impact. However this project's size will be a substantial contributor to the existing problem. The number of housing units in South Boston "proper" has grown by more than 5,000 in recent years. This project and Washington Village alone will further increase this number by an additional 2,100. These two large scale projects combined with other smaller increases in South Boston will bring the total added housing units on this small peninsular closer to 9,000. *Note this does not include the housing in the Seaport district, just South Boston proper*. Residents feel that It does not take a professional city planner to realize that these types of increases are unsustainable. If city services such as police, fire and emergency medical are not increased, the entire area will be placed at risk. We feel the Edison plant development and other large projects like Washington Village must be required to participate in or fully fund the construction of the buildings and purchase of equipment for the services needed to adequately protect not only their own residents and businesses, but to ensure that the already stressed existing resources are not made worse by their project. The particular issue of law enforcement will require jurisdictional negotiations between City and State police agencies. Due to the size of this project site (15 plus acres), a determination of feasibility for the L street Station development to actually have their own first responder and police enforcement units similar to university police & fire units elsewhere in the city should be undertaken. 13.9

**(9)** **AFFORDABLE HOUSING:** It is fair to say that affordable family housing is a high priority to many community members. We re-enforce the voice of the community. The current proposed percentage level of affordable housing (13%) is inadequate. The majority of residents who attended the community meetings have stated that families are being forced out of the neighborhood primarily due to lack of "affordable housing for families". Many have requested the scoping document establish a target of 20% affordable units of the total number of units ultimately contained in the project. Many residents have requested the term "affordable" be clearly defined in the scoping document. Current agency definitions of affordable are quite simply too broad and confusing in these residents opinion. Stating that language like "Affordable is defined as a % of the median household income level when averaged with the area, and modified according to availability data ", is no longer applicable in the "Southie" of today. They are requesting that the term "affordable family housing" be clearly defined in the scoping document with language that is clear concise and understandable to the general public. Suggestions on the lines of: *Affordable Family Housing: Housing units that are no smaller than 1,900 sq/ft containing two or more bedrooms, whose initial purchase price shall not exceed $375,000.oo for two bedrooms and shall increase no more than $20,000 per additional bedroom. (Note: dollar amounts included here are* 13.10

*inserted as examples not actual dollars)* It should be noted that several residents expressed to IAG members that the area residents may agree to a higher number of total units if a greater percentage of those units are truly "affordable family units". The development team should look at recently approved projects for Washington Village and the Beverly on how to maximize affordable housing. 13.10

**(10)** **UTILITY / INFRASTRUCTURE:** This issue was raised as it relates particularly to sewage. There is a concern that this project's estimated outflow of nearly 300,000 g/pd coupled with the extensive growth in the Seaport district could result in the Deer Island Treatment Plant (DITP) reaching its capacity for treatment. It is understood that the DITP daily capacity of 6.5 mil g/pd is being approached more rapidly than anticipated. The plant was designed with the ability to expand beyond that capacity. We are requesting data from the developer and MWRA via BWS of projected plant limits, and when the capacity is projected to be reached. The area residents are concerned that South Boston sewer rates will increase by more than those across greater Boston and the MWRA districts simply because they are located within the area experiencing the largest amount of development. Additionally residents would like to understand the timeline for the inevitable expansion of the DITP, as that expansion cost will affect not only their own billing rates but all 76 cities and towns whose waste is treated there. The DITP is the reason Boston Harbor is as clean as it is now and one of the reasons this property is worthy of development at all. We request similar data from the other utilities like water supply, Gas, electricity and data. 13.11

**(11)** **CONLEY TERMINAL:** The Conley terminals current expansion plan onto the former coastal oil site is an important part of the local economy. We require the terminals particular traffic, air quality and noise levels be carefully studied. As stated earlier the recent success of the Terminal is due in no small part to the ability to get trucks in and out in a rapid period of time. Particular attention must be paid to the intersection of terminal operation and the general roadway traffic. Both the terminal and residents have worked hard to reach amicable solutions that each can live with. Those hard fought agreements are in jeopardy of being rendered mute and ineffective if this project's traffic and noise creation are not addressed in an aggressive manner. The bottom line to this complicated component was summarized by one resident, " we aren't going backwards on traffic or air quality gains we have made, not now, aint gonna happen". It was also noted that current truck numbers will increase when the terminal begins to serve "Post Panamax" vessels. This projected increase must be a component of any traffic, air quality, noise, and light studies. 13.12

**(12)** **BUILDING HEIGHT.** The height of two buildings in the current proposal is too high … we have heard this over and over. There is no consensus on a height that would be acceptable. This brings up the issue of "what zoning will apply to this site"? If the result of the Coastal Zoning Commission's boundary review is that this property can be removed from the Designated Port Area (DPA). Then what zoning will be inserted. If the base zoning surrounding this property is utilized, the limit is 40'. Residents identified shadows from the buildings as an impact. Additionally an impact of this project setting a precedent in the zoning district was cited. HRL and BPDA should delineate precisely what zoning will apply to the project that is ultimately approved by all the agencies having jurisdiction on this site. 13.13

**(13)** **PUBLIC ACCESS:** At many of the meetings the community has stated that the plan as presented does not go far enough on an inclusionary level. The impact cited is that they do not want to feel that they are not allowed in the development. So more attention must be paid to the linkage locations to the existing neighborhood. These linkages must be seamless. Resident also want to be sure that there clear unfettered access to the water and channel from the neighborhood. This unfettered 13.14

access is also a detriment in some community member's minds. Saying "If this place ends up being so cool and great it will attract more people from all over". 13.14

**(14)** **PRESSURE ON THE EXISTING RECREATIONAL FACILITIES:** This issue was raised by several people, There is becoming an issue at ballfields etc as of late: Due to the addition of so many housing units and their occupancy primarily by under 35 yrs people who use outdoor venues often. The resident children's little league, Pop Warner and other youth based programs have been faced with occupied fields when they arrive for scheduled games. Resulting in disagreements with groups who did not schedule through proper channels. The residents are of the opinion that the addition of 1,500 more households will make this situation worse. Also the residents were requesting that with such a large site the zoning ultimately employed should have a recreational component so the existing facilities are not impacted negatively from overuse. 13.15

Thank you for your attention to these important concerns. We look forward to seeing the responses from Redgate/Hilco and their responses to each.

Jim Coveno…. Resident and IAG Member

David Biele…..Resident and IAG Member

Jerry Tracy, Resident and IAG Member

August 4, 2017
J.F. Bennett
South Boston, Mass.

I am opposed to the present plans for development of the former Edison Power Station on Summer St. As presented the plan will radically alter the fabric and character of City Point. City Point for the past century or more has been primarily a residential neighborhood composed of mostly two and three story multi and single-family buildings with only a few small retail establishments. It's population until recently was composed of multigenerational family groups with a mix of seniors and singles in small apartments and rooming houses. Over the past two decades, condo conversion has changed the character of the community adding many more one and two bedroom units occupied mostly by young single transient professionals, people following jobs with little interest in creating a community connection with people not in the same socio-economic group.

This development is, in essence, a gated community without a gate. A large plot of private property which in its current layout discourages through traffic and lacks a real connection with the greater community due to this limited street connection and the scale (and potential style) of its architecture. The site needs more streets and more connections to the outside neighborhood. A second street connecting with 1st St. on the east side of the site and a street across the north side of the building line before the waterfront space. The street would also more clearly indicate that that space is not just the front yard of the commercial endeavors along that side of the development. A lively, safe, public street life cannot be created or maintained artificially. It must flow naturally from an established rooted population invested in their community. Private security cannot take the place of a vibrant public sphere composed of an engaged, invested group on neighbors out on the sidewalks. The claims of a desire for small locally geared businesses in the development strike me as unrealistic. I believe new construction typically needs high volume businesses in order to pay the higher rents needed to defray the costs of construction. I also feel those business will be handicapped by the lack of through traffic. How will this development impact the existing commercial zones on East and West Broadway? 14.1

While I understand the theory behind limiting parking in order to "discourage" driving, In the real world it impacts those with the least driving flexibility; poorer people with fewer employment choices. With fewer parking spaces than residential units on site where will people patronizing the businesses or the open space park? While I understand much of the parking on site will be used by different people at different times of the day, there seems to me a strong likelihood that there will be times there with be a dearth of space for the number of automobiles on site. More parking is needed—a surplus able to accommodate neighborhood over is needed. 14.2

The streets and the open space really NEED to be true publicly owned land. I have serious reservations about privately owned public space at the present time. I see many issues daily along the South Boston Waterfront particularly in the Fan Pier area. The city doesn't have a mechanism in place at present to oversee and regulate these spaces and agreements as was demonstrated recently by the issues with Intercontinental Hotel and the New Boston Garden. I don't feel comfortable handing myself and others over to private security who lack the training and accountability of our police. There is the question of parking meters and parking fees as well, how will that be regulated? Who will collect those fees from parking tickets, if any? New 14.3

York City recently catalogued their “POPS” and found numerous violations of these agreements made by private entities. I feel these sorts of deals are an abrogation by municipal government of its raison d'être. I have no faith in corporate self-policing. These private streets will be a free-for-all like the private ways of the Fan Pier. There is no really no accountability down there. I don’t expect this or any other development to be any different unless the city takes a greater interest in governing these areas. The city and state need to clearly define and legislate who has authority and over what.; is an entity like Redgate/Hilco acting as a state agent when creating and maintain “public spaces” and what rights do we have while traversing such spaces? I also feel we need a separate discussion regarding open space in South Boston, What kind do we want, what do we want it to do and is all open space necessarily good open space? What makes successful open space?

Public transit is beyond capacity in South Boston at present, this development with put a tremendous strain on this already overburdened system. Serious upgrades need to be in place before any major development takes place. We need something quite radical, something much more than a few more buses or relying on ride sharing or private shuttle buses. Silver Line service is not the answer, since it is BRT only in name. Ride sharing and private shuttles are a return to the 19th century—with cell phone “apps” added, just like private ways & security they are lacking in accountability and supervision. It is time we considered a return of rail service to City Point. Any service improvements must benefit all City Point and greater South Boston, not just the Edison development. Service routed down 1st. St. to Summer St. Leaves the rest of the community out of the loop. As it is we have seen a diminution of service euphemistically called a service improvement in the routing of buses onto 1st St. along an abbreviated route. 14.4

Redgate/Hilco “sold” themselves to the community as a firm with a history in preserving and repurposing former industrial sites, however the plans they have presented preserve very little of this historic site; leaving a partial structure standing without any context to its part of the whole. This is the only major piece of City Point’s industrial past remaining. It is an important site in the annals of engineering & electric power generation and as such is worthy of more serious preservation. Also preserving and repurposing more of the structures will help to knit this development with the rest of the neighborhood, if only by dint of its long existence as part of the community. It has a comforting familiarity for many residents. More than just the turbine rooms are historically and architecturally valuable. The BELCo plant is one of the earliest large scale A.C. power stations and the remaining sections of EEICo boiler rooms are architecturally unique as far as I’ve been able to determine; there are no other power stations with segmental arch windows topped with lunettes which I have been able to identify. With a little bit of imagination I feel much more of the structures could be saved and repurposed, find new uses while retaining character and context. The more of the old buildings are razed the more the area will become a artificial neighborhood in and of itself with little in common with the surround neighborhood since no new construction there will mimic the pre-existing neighborhood. Preservation of a higher, maximum amount of the old power station is needed to maintain a feeling of continuity and connection with the rest of City Point. 14.5

Who is going to pay for all the “Art & Industry” and the myriad waterfront activates proposed? Is some going to profit financially from these things? Are they just a carrot dangled before our eyes or is this another “Lawn on D”? 14.6

What guarantees do we have for any of these promises? I believe if this development goes forward the city should require Redgate/Hilco post a performance bond to guarantee financing of any public accommodations in the event of their withdrawal of financial support. 14.6

I would like to see the creation of an arts and industry school, maybe in the BELCo building; something, which could offer training in the trades to local teens and the unemployed. Possible trade with niche markets in keeping with the site's history. Something along the lines of a machine shop, smithy, or wheelwright, cabinetmaking; industries that are alive, but having a hard time attracting young people. It could be a school, a museum and a profit making business. 14.7

A community composed primarily of mostly single, transient,—no matter how well off—millennials cannot thrive and mature. It cannot spawn those natural social connections, which grow organically from a long-term multi-generational, diverse community like South Boston. It can only lead to a static, stunted shadow of a real neighborhood; one in which social conventions and groupings can never truly develop and thrive. There will be faddish groupings following the latest trends and fashions, but these never last and enough of these people won't be around long enough to reconnect from fad to fad creating a lasting, living neighborhood. The architecture must connect with the greater neighborhood and be attractive and affordable to a diverse population. 14.8

The city cannot continue to allow heavy development along the L & Summer Sts. corridor while depending on it as a primary route for traffic from the South Shore. The street cannot do double duty bearing an ever-increasing traffic load indefinitely. We can't keep putting this off for future generations to deal with. This development will only exacerbate the problem.

There are many other issues, some of which I'm sure my fellow resident have touched upon and I'm sure will be discussed in future meetings. I personally would be happy to see the site remain as it is indefinitely, but knowing that's unlikely I'm interested in finding a plan that best compliments and enhances the City Point neighborhood. At this point in time I feel we are beyond "taking a hit" and accepting linkage gifts; this time around our wellbeing needs to come before the purses of the speculators. (to put it bluntly)

In closing I'd like to offer a quote from Jane Jacobs'; *The Death and Life of Great American Cities*: "The solution to [Boston's housing problem] cannot lie in vain attempts to plan new self-sufficient towns or little cities throughout [the] metropolitan region.... We cannot have it both way: our twentieth century metropolitan economy combine with nineteenth century isolated town or little city life."

Regards,

J.F. Bennett

Tim Czerwienski <tim.czerwienski@boston.gov>

# 776 Summer Street

David Biele [redacted] Fri, Aug 4, 2017 at 4:22 PM
To: Tim Czerwienski <tim.czerwienski@boston.gov>
Cc: slynch <stephen.lynch@mail.house.gov>, linda.dorcenaforry@masenate.gov, "Collins, Nick - Rep (HOU)" <Nick.Collins@mahouse.gov>, bill.linehan@boston.gov, michael.f.flaherty@boston.gov, michelle.wu@boston.gov, john.allison@boston.gov

Tim:

I wanted to submit my personal comments regarding 776 Summer Street, outside of the IAG comments. At the outset, I would like to state that its my personal opinion that having the development team address impacts is premature. This project must pass several levels of state review before the IAG and the BPDA process can play out in shaping the development. I believe that the BPDA should require the project team to obtain these approvals before these conversations continue. If state approvals are not obtained, the preferred option for development, which has been the sole topic of these public meetings, will change and these conversations will be moot. Therefore, I believe that it is in the best interests of the development team, the city planners and the neighborhood to wait until the state processes play out, instead of getting bogged down in the nuances of a project that may never come to fruition. That being said, I would like to submit my personal comments.

I believe that the preferred proposal being pushed by the development team is out of scale for the traditional South Boston neighborhood. Building with heights of 200 feet are not something that fits in along City Point and it is not the size that was in mind during the Article 68 planning process. The density being proposed by the development team is more appropriate along the Waterfront, or the Dorchester Avenue Corridor. The proposal would also be out of place along Broadway, which historically has absorbed higher heights and density. I am worried what type of precedent would be set if development of this scale is allowed to move forward. 15.1

I am also deeply concerned with the impacts of this project on our public transportation infrastructure. It is well documented that our public transportation system has not been able to keep up with the population growth and pace of development in the City of Boston. This development, situated at the start of bus service for the entire South Boston neighborhood, would cripple public transit options for the rest of the neighborhood. The BPDA should direct the development team to further study this area, as it will have impacts beyond the surrounding City Point neighborhood. 15.2

Additionally, the development team should maximize the opportunity for affordable housing. Washington Village and The Beverly were able to do so, and there is no reason why the South Boston neighborhood should settle for the minimum 13% if this project moves forward. The City of Boston is rapidly becoming a city of haves and have-nots, as we have one of the highest rates of income inequality in the country, and it is the responsibility of the City to address this problem. A development of this magnitude needs to do more than the bare minimum to meet the Inclusionary Development Policy, and the City needs to make this development team do more. 15.3

Similarly, more needs to be done on parking. The proposal's parking requirements are grossly inadequate for a 15-acre development, especially when Alternative B calls for significantly more parking. 15.4

Lastly, the development team has been pushing its "preferred" development proposal. However, they provided three alternatives for the project in their PNF. The community deserves to know ALL the options that are on the table. The development team should not be allowed to lead the conversation away from feasible projects for the site which the development team as proposed in writing. As the proponent, they have an incentive to shift the conversation away from less lucrative proposals, and I hope the BPDA will hold their feet to the fire on their misleading presentations. At the public meetings, there has been a clear demand for parking--Redgate and Hilco's "Alternative B" calls for office space with approximately 1000 parking spaces. However these details have been buried in the filings and not presented in-depth publicly. I hope the BPDA would require Redgate and Hilco to address Alternative B in the upcoming scoping session to ensure that all options are on the table for discussion. 15.5

Thank you for your time and attention,
-David Biele

Tim Czerwienski <tim.czerwienski@boston.gov>

# 776 Summer Street

Allison Drescher [redacted] Fri, Aug 4, 2017 at 3:52 PM
To: tim.czerwienski@boston.gov

Dear BPDA:

Thank you for the opportunity to comment on the proposed Redgate/HillCo Project at 776 Summer Street in South Boston. I am a Trustee and owner of Summer Cahill, LLC, the owner of 840 Summer Street (the Cahilll Building) and a direct abu er to the project site. I live in the City Point neighborhood with my 8-year old son, and own other property in South Boston as well. Please note that while I am a member of the IAG for this project, the following comments are submi ed solely in my personal capacity and in no way reflect the posions or opinions of the IA G.

At the outset, I want to state that I support redevelopment of the site. Moreover, in a general sense, I am supporv e of the uses proposed by Red Gate/Hillco, i.e., a public market or mixed use concept in tandem with residenal and perhap s other commercial uses. I feel that a funconing and de veloped site is far preferable to the exisng de funct and corroding power plant. I believe that the site is close to but sufficiently separated from the exisng neighborhood t o have its own height and density, and should not be bound by the exisng z oning, given the land mass and current configuraon.

Notwithstanding my overall support for the project, I want to emphasize that the ulma te development must funcon in a w ay that allows the South Boston business and residenal c ommunies t o successfully co-exist. My primary concern is the potenal tr affic impact of the proposal.

Trip Generaon and Impacts . The current esma te of 9,000 - 20,000 car trips per day resulng fr om this proposal is staggering. Speaking frankly, the City of Boston has been remiss in not doing extensive traffic studies with the residenal density tha t has been added to the neighborhood. This must happen and the City should work in tandem with the other stakeholders - Red Gate/Hillco and MassPort – to develop a realisc plan f or managing daily traffic in combinaon with truck trip s to and from Connolly Terminal. I would urge the City to undertake a process similar to the recent North Staon Ar ea Transportaon Access Plan, which ackno wledged that, in the face of several large development projects, it was essenal f or the City to understand the exisng tr ansportaon ne twork and idenf y improvements needed to ensure that area growth did not completely gridlock Downtown Boston. South Boston faces many of the same challenges and if the City does not proacv ely address them, both exisng pr operes and ne w developments will suffer irreparably. 16.1

Proposed Site Access. The two entrances and exits proposed by the developer are not sufficient and likely physically impossible. The two proposed exits on Summer and East First Street threaten to shut off a key access point to South Boston. South Boston is not a grid like the Back Bay, nor does it have mulple access poin ts like the South End. As a peninsula, there are key entrance points in and out. The First Street outlet threatens congeson and f eeding vehicles back into the neighborhood. Like other residenal ar eas, South Boston, with its proximity to Route 93, suffers from innumerable "cut through commuters" on a daily basis. City Point and residenal streets need to be protected from this. 16.2

The outlet onto Summer Street should be a major concern to mulple ag encies concerned with transport on the city and state level. This is a key access point to the Marine Industrial Park, the Seaport District, MCCA, Logan Airport, as well as the haul road accessing MA-90 and a major intake for Rt.93 off D Street. If you take the maximum of cars projected at 20,000 and divide equally between two entrances using a twelve hour day, that is 833 trips per hour. The minimum number of 9,000 trips per day is 375 trips per hour. The likely reality is that these trips will be concentrated during peak hour mes, adding t o the current congeson in the ar ea. The majority of traffic will be exing on to Summer Street, and not onto First Street. Perhaps addional r elief needs to be explored to open access at the top corner of the site by somehow ulizing the haul r oad. I will leave the specific soluons t o the project's and City's traffic 16.3

engineers, but it is my strong sense that if these problems are not addressed, the project will place an undue burden on the residents and businesses of this neighborhood.

Thank you for considering my comments. Notwithstanding my concerns, I do appreciate Red Gate/Hillco's outreach to the neighborhood, and look forward to working with them on solutions that will make this project an asset to our community.

Yours Sincerely,

Allison H. Drescher

Trustee

Summer Cahill LLC

--

Allison Drescher
840 Summer Street
Boston, MA 02127
c. [redacted]
f. [redacted]
e. [redacted]

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Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison - L Street Station Redvelopment, South Boston, MEEA No. 15692

**Eileen Smith** [redacted] Fri, Jul 7, 2017 at 5:07 PM
Reply-To: Eileen Smith [redacted]
To: "Alexander.strysky@state.ma.us" <Alexander.strysky@state.ma.us>
Cc: Tim Czerwienski <tim.czerwienski@boston.gov>

July 7, 2017
Alex Strysky
MEPA Office, Mass Dept of Energy & Environmental Affairs

RE: Edison - L. Street Station Redevelopment, South Boston, EEA No. 15692

Dear Mr. Strysky,

In no particular order I would like to make comments as requested by you on June 21, 2017. Never having participated in an IAG I am hopeful that the following suggestions, concerns, needs and wants are workable interests for Redgate and Hilco and to the future of our South Boston community. The community as a whole must be continuously involved and informed with public meetings as to the development stages, plans and potential problems.

The construction/decommission period of 10-15 years will impact City Point for years with additional concerns; traffic, lack of public transportation, noise, dirt and pollution. Measurements must be taken ensuring quality of life. Equally concerning is the Massport/Conley terminal expansion in a densely populated residential area. The added planes coming and going to Logan airport are now flying over our residential areas to runways.

Currently, East Broadway (between L&P Streets) has over **225** buses traveling on our streets on a daily basis. With the Edison residential proposal, there must be a plan which provides for additional transportation and the elimination of added buses and or transportation services to the overwhelmed E. Broadway Street. The noise, dirt, traffic, planes and pollution are already at unacceptable levels. Previously, as suggested by members of the IAG, a noise monitoring system should be installed before the initiation of the Edison development. I hope you will support this issue.

17.1

17.2

Equally concerning, increased truck traffic, noise and pollution utilizing the Tommy Butler Bridge. We have

thousands of trucks travel our streets every day with the possibility of Boston Harbor dredging to facilitate bigger container ships. Traffic, noise, pollution and parking problems are continuously increasing without a definitive plan and must be addressed before this process proceeds. These environmental issues are once again in a densely populated residential area. Removal of hazardous materials and air quality changes should be publicly posted.

The proposed parking accommodations for the Edison are unrealistic, appalling and unacceptable. The Edison proposal includes fifteen hundred eighty eight (1588) residential units (no detail given as to how many bedrooms in each unit), office space, retail space and a hotel with a projected total of 987 parking spaces. On this issue alone the project should be denied as inadequate. Initial discussions included sufficient parking with the potential of residential parking. Community benefit discussions have included the possibility of residential parking as well as access during snow emergency postings for all South Boston residents. The Edison project has to increase their parking space numbers or change their development proposal to be acceptable and equal to the number of residential units. Parking in South Boston is forcing residents to leave the City and affecting quality of life. Parking on private property with such limited access should be structured in a way to mandate parking on Edison land only. Said land is private and residents should have special parking permits reflecting Edison residency and be allowed two hour local parking only permit. This should help satisfy the discussions regarding new residents using alternative transportation. This will guarantee that what City Point currently has for parking and a lack thereof, will not be eliminated to accommodate Edison residents. Otherwise, as discussed, new residents will be ride sharing, biking, skate boarding and should be willing to sign parking permit waivers. 17.3

I did not see the designated amount of bike parking spaces. Hopefully, these spaces are not included in the 987 allotted parking spaces. There is a greater need for public and community parking than community arts. 17.4

The proposed towers should be lowered and not have offensive lighting that will affect the surrounding residential areas. These proposed high rise buildings are not welcoming to the current residential community. 17.5

I believe that preservation of the buildings histories and structures are relevant. The Edison electric Illuminating 17.6

Company of Boston is the only plant of its kind in existence dating back to 1886. There is talk of saving the turbine halls which is appreciated. The windows on the L street side of property should also be saved. It would be helpful to have a complete tour (hard hat style) of all the buildings to review their historical relevance. 17.6

The suggested architecture shown for the new eight (8) building developments is disturbing and has no relation or historical significance to the homes in the City Point area. 17.7

This will have to be discussed separately. Said proposal does not meet the standards and historical design of the neighborhood. Proposals do not include two and three family homes of which this neighborhood reflects. Proposals do not specify low income housing and or availability of over 55 housing. Development requires further clarification. 17.8

The private development of the Edison is promising access to newly created streets that will remain public. Does this mean that the City will not be responsible for services such a garbage removal, snow removal, police and fire response, ticketing and towing? Therefore, who will be allowed to park on these streets? 17.9

I look forward to working with you regarding the Edison development project. It would be helpful for the IAG members to have a 24 hour contact in place for all matters.

Thank you,

Eileen Smith

STEPHEN F. LYNCH
8TH DISTRICT, MASSACHUSETTS

COMMITTEE ON FINANCIAL SERVICES
SUBCOMMITTEE ON CAPITAL MARKETS, SECURITIES, AND INVESTMENTS
SUBCOMMITTEE ON TERRORISM AND ILLICIT FINANCE

COMMITTEE ON OVERSIGHT AND GOVERNMENT REFORM
RANKING MEMBER, SUBCOMMITTEE ON NATIONAL SECURITY
SUBCOMMITTEE ON GOVERNMENT OPERATIONS

ASSISTANT DEMDCRATIC WHIP

# Congress of the United States
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LYNCH.HOUSE.GOV

August 3, 2017

Mr. Brian Golden, Director
Boston Planning & Development Agency
One City Hall Square
Boston, MA 02201

**Re: 776 Summer St., South Boston (Edison Power Plant) Proposal**

Dear Director Golden:

I am writing to you regarding the proposed 15.2 acre project located at 776 Summer St., South Boston, formally the site of the L St. Plant. As the Congressman from the Eighth Massachusetts District, I represent the families of South Boston.

This proposal raises many serious neighborhood concerns including density, traffic, public safety and parking. There are also overarching maritime and environmental issues that need to be addressed.

Notably, this proposal would add approximately 1,500 additional housing units as well as retail and commercial shops and a possible hotel, it would introduce approximately 10,000 to 20,000 additional vehicle trips to this area each day and completely overwhelm the neighboring residential area unless thoughtful and careful countermeasures are included. Currently such mitigation has not been suggested.

Moreover, as Conley Terminal has expanded, we have worked with Massport over several years to create a Dedicated Freight Corridor (DFC) to relieve East First Street of over 1,000 daily tractor-trailer truck trips. As part of this process, Thomas Butler Park was created to act as a buffer zone mitigating noise and carbon emissions from the truck traffic which will soon be redirected onto the DFC.

As noted above, and according to the proponents PNF and MEPA filings, this project would entirely negate the neighborhood's efforts at traffic mitigation by generating an additional 10,000 to 20,000 vehicle trips through the South Boston Neighborhood. This would reverse the progress that has been made in this area and leave the neighborhood in far worse condition after all the work and investment by the Commonwealth of Massachusetts and Massport. From a neighborhood standpoint, this simply cannot be allowed to happen.

Neighborhood parking has become a major concern to residents, and this proposal would contribute to an already unmanageable situation. Other issues of concern include public safety and environmental issues during the demolition and cleanup process, with potential health risks of contaminants drifting into the surrounding homes as well as onto the public parks and playground directly across the street.

Importantly, over a billion dollars has been invested through Federal and State partnerships for the dredging of Boston Harbor and the Reserved Channel to increase the international shipping industry and make the Port of Boston more competitive. This development would negatively impact all the advancements made to the Port of Boston and to Conley Terminal by further harming traffic flow and air quality by adding vehicular traffic onto local streets which are not able to sustain the additional traffic flow in and out of the South Boston community.

While the people of South Boston have been very cooperative and supportive of the many developments in our neighborhood, that support and cooperation has been the result of a two way conversation between the developer, local leaders and community groups.

Recently, I have been reassured and encouraged by the news that the developer has agreed to conduct a full community-wide meeting with more accurate descriptions and renderings of the proposed project and hopefully including some measures to address the concerns raised by the South Boston community. Therefore, while I remain firmly opposed to this project in its current form, I also respectfully request that the comment period be extended by 90 days, so that the developer will have more time to refine the proposed project and meet with the neighborhood residents.

Director Golden, thank you for your time and consideration in this matter.

Sincerely,

**STEPHEN F. LYNCH**
Congressman
8th District
Massachusetts

cc Tim Czerwienski, BPDA

THE GENERAL COURT OF MASSACHUSETTS
STATE HOUSE, BOSTON 02133-1053

August 4, 2017

Brian Golden, *Director*
Boston Planning and Development Agency
1 City Hall Square, 9th Floor, Room 900
Boston, MA 02201

**Re: 776 Summer Street / Edison Plant**

Dear Director Golden:

We are writing to you with serious concerns regarding the proposed project located at 776 Summer St. in South Boston, also known as the Edison Plant proposal. As the state elected officials, we represent the people of South Boston and cannot support this proposal in its current form. We firmly believe the comment deadline should be extended by 90 days to provide ample opportunity for the residents of South Boston, in particular the City Point neighborhood, to analyze this proposal.

After careful review, it is clear that the density proposed is simply unfeasible. According to their PNF and MEPA filings, this project would generate between 10,000 and 21,000 new car trips in and out of the neighborhood daily. Our roads, buses, and transit options are already over saturated. Significant investments made by the MBTA recently are only designed to catch up to the current levels of ridership, not projected growth. This project would completely overwhelm our transportation infrastructure, negatively affect our air quality, and further exacerbate the gridlock on our streets.

Currently, the Massachusetts Port Authority (Massport) is wrapping up a $75 million investment in the Thomas J. Butler Haul Road and Buffer Zone Park. This was done in preparation of the expansion of Conley Terminal to get roughly 1,000 commercial trucks off of East First Street to alleviate the environmental and noise impacts on area residents. To follow that effort, Massport, the Federal Government, and the Commonwealth of Massachusetts have joined forces to invest roughly $1 billion to dredge Boston Harbor and expand Conley Terminal to make Massachusetts more competitive in the international shipping industry. The current proposal is simply incompatible with that significant public investment, and would negatively impact the port of Boston, all while replacing much of the noise and pollution that we originally sought to mitigate.

We have additional concerns about public access to the waterfront and green space. Any and all green space and open space on the waterfront should be publicly owned and protected in perpetuity to ensure preservation and access for generations to come. With that in mind, we feel that 'Project Alternatives' outlined in the project filing were not fully explored. In concurrence with Secretary Beaton's ENF Certificate, (EEA #15692, pg.7), we strongly encourage the proponents to more wholeheartedly explore viable alternatives in order to ensure that the final product is truly one that best fits the site's location within the community.

Finally, this project has a significant number of review processes underway, including Coastal Zone Management Designated Port Area review, MEPA residential approval, Ch. 91 usage and an agreement with the Massachusetts Historic Commission. Due to these factors as well as the size, scope, and complexity of this project, we respectfully request the comment deadline be extended 90 days so each agency, and the public, can fully absorb every aspect and make informed decisions regarding this development.

Thank you for your consideration of these concerns and requests, and please do not hesitate to reach out to our offices should you have any questions.

Sincerely,

Linda Dorcena Forry
*State Senator*

Nick Collins
*State Representative*

cc: Tim Czerwinski, *Project Manager*
Mike Christopher, *Deputy Director for Development Review / Government Affairs*

# MICHAEL F. FLAHERTY
## BOSTON CITY COUNCIL AT-LARGE


August 3, 2017

Mr. Tim Czerwienski, Project Manager
Boston Planning & Development Agency (BPDA)
One City Hall Square
Boston, MA 02201

Dear Mr. Czerwienski:

I am writing to you today to express my concerns to a development project located at 776 Summer Street, South Boston, formerly known as the Boston Edison Plant. The project, which proposes to be 15.2 acres, has raised serious concerns from the surrounding neighbors. Based on the project's PNF, the project would generate a multitude of quality-of-life issues that need to be addressed (density, affordability, and transportation to name a few) beforehand through an exhaustive neighborhood engagement process.

The proposal calls for 1,500 residential housing units and retail space to be developed in an already dense area. As we have seen over the past decade, the rapid development in South Boston has overwhelmed the neighborhood tremendously. Further, 10,000 to 21,000 new vehicle trips are projected to take place in an area that is already at capacity with vehicular traffic. Given that this site used to be a power plant, there are serious environmental, health and safety concerns that need to be acknowledged. If this project is approved, there is potential for contaminants affecting the surrounding community during the demolition and cleanup process. Lastly, there needs to be preservation of and access to the surrounding greenspaces and waterfront particularly the continuance of the street grid from M street and N Street right down to the waterfront.

The South Boston Community have been supportive and accommodating to the many developments that have taken place in the neighborhood. Support and accommodation is reached as a result of a thorough and extensive community process. It is for the above-mentioned reasons that I respectfully request that the BPDA oversee and ensure the community's overall concerns are addressed and alleviated. Thank you for your time and consideration.

Regards,

Michael F. Flaherty

Michael F. Flaherty, Boston City Councilor At-Large


**Boston City Hall - 5th Floor, Boston, MA 02201 • (617) 635-4205 • FAX: (617) 635-4203 • michael.flaherty@boston.gov**

**Massachusetts Port Authority**
One Harborside Drive, Suite 200S
East Boston, MA 02128-2090
Telephone (617) 568-5000
www.massport.com

July 6, 2017

Matthew A. Beaton, Secretary
Executive Office of Energy and Environmental Affairs
Attn: Alex Strysky EEA 15692
100 Cambridge Street
Boston, MA 02114

**Subject: L Street Station -776 Summer Street (EEA #15692) ENF Comments**

Dear Secretary Beaton:

On behalf of the Massachusetts Port Authority (Massport), we are pleased to have the opportunity to review and provide comments on the *Environmental Notification Form* filed by HRP 776 Summer Street LLC (the Proponent) to commence joint review of the proposed L Street Station redevelopment at 776 Summer Street in South Boston under both MEPA and the City of Boston's Article 80B process. As outlined in the ENF/EPNF, this project proposes to build a total of 2.1 million sf on the 15 acre site, including 1.4 million sf of residential development (±1,500 units), 987 structured parking spaces hotel, retail and office space.

As a major landowner in the South Boston Waterfront, and the owner and operator of the Conley Container Terminal which abuts the 776 Summer Street property, Massport appreciates the opportunity to comment on this filing and to provide context on the critical port operations that occupy 2 sides of the site. We recognize the unique urban and economic redevelopment opportunity this project represents and the community's strong interest in replacing the former power plant and remediating this site. Massport's primary interest is ensuring the long-term viability of the Conley terminal and The Port of Boston's over 7,000 jobs as this project moves ahead.

**Proposed Project's Context on the Port of Boston**

Conley Container Terminal, which is located immediately adjacent to the project site, and maritime uses in the Port generally have a significant regional economic impact; over 1,600 businesses throughout New England rely on Conley to import and export raw materials and finished products. It is a critical link in both the region's supply chain and the overall economy.

Container activity at Conley processed a record high mark of over 250,000 TEUs (Twenty Foot Equivalent Units, a standard industry measurement of throughput) in FY2017, coming off back to back record volume in both FY15 and FY16. In conjunction with the Commonwealth and the federal government, Massport is now embarking on a comprehensive Conley Terminal modernization and harbor dredging project to accommodate the new, larger post-Panamax ships that are already beginning to call on Boston following expansion of the Panama Canal. In addition to the Boston Harbor dredging project, Massport has been particularly focused on improving and expanding Conley's landside terminal and transportation facilities to increase terminal capacity and efficiency necessary to remain

competitive as a regional port. Critical among these projects are the Butler Dedicated Freight Corridor (DFC) which is scheduled to open in 2017, improvements to Berths 11/12, and creation of a new deepwater berth, Berth 10, to allow Conley to receive the larger container vessels now servicing the East Coast. A key motivation for Massport's construction of the DFC was to move Conley truck traffic off East First Street and away from the adjacent residential neighborhoods.

The landside improvements will also include the purchase of three new ship-to-shore cranes to be located between the current cranes and the proposed project site, and the expansion of the Conley container yard on the former Coastal Oil site, which Massport invested in cleaning up. Also, although not in the immediate terminal plans, Massport is preserving a 5-acre site immediately adjacent to the 776 Summer Street site for future maritime industrial use to support Conley operations. These projects, and others not detailed in this letter, are all part of the large scale investment in Conley Terminal that collectively represent an investment in the Port of over $850 million by Massport, the Commonwealth, and the Federal government to continue to support this regional economic asset, while also minimizing its impact on existing residential neighbors. These projects are illustrated on the attached map.

The 776 Summer Street project site is also immediately across the Reserved Channel from the Raymond L. Flynn CruisePort Boston at Black Falcon Terminal. The terminal hosts a robust and growing cruise ship industry each season from April to November. This year, the CruisePort will set a record with more than 150 ships visiting and docking in close proximity to 776 Summer Street, another example of the level of maritime activity that occurs in this area of the Port of Boston.

Several of Massport's improvements listed above, particularly the DFC and upcoming Berth 10 work, will move essential Conley operations west, away from Logan airspace restrictions, and closer to the 776 Summer Street site. When it opens in the fall of 2017, the DFC will carry approximately 900 container trucks a day past the project site.

It will be critically important to evaluate the 776 Summer Street redevelopment in the context of these existing and planned maritime activities. Conley Terminal operates 24/7. Container ships regularly call Conley Terminal on nights and weekends, leading to active unloading activities throughout the facility outside of typical work hours.

In light of Massport's work to protect and grow these Maritime assets, we are pleased to provide the following specific comments on the ENF:

***Buffering Conley Terminal Operations***. Due to the 24/7 nature of activity at Conley Container Terminal and on the DFC, Massport believes that this development must be designed to minimize conflicts between the site and the adjacent industrial port. The allocation of land uses should be designed to buffer and protect Conley operations from potential development that is incompatible with adjacent maritime industrial uses. Massport understands that there is strong interest in accommodating residential units on the site. Particularly given the close proximity to certain 24/7 Conley Terminal activities, a thoughtful review of specific residential proposals in the context of an overall plan will need to be assessed. In particular, we recommend the following:

- Residential uses should be limited to portions of the site that do not abut the Butler Dedicated Freight Corridor or adjacent industrial uses. We concur with the current proposal to buffer the port by avoiding residential uses on blocks D, G, and H. We also have concerns that any residential units in Block F, particularly along the property line, could be too close to the industrial activities at Conley.
- Condominium ownership should be restricted to interior blocks and along East First Street.
- Massport's standard Residential Use Restriction Language, which describes the adjacent freight corridor and active industrial uses, should be included in all legal documentation signed for any residential units

- Construction of any residential units should be designed to meet noise standards (not to exceed 45 dBA day-night average interior sound level).
- Additionally, we recommend minimizing active lower level commercial use on the ground floors of office and hotel blocks fronting on the Butler Dedicated Freight Corridor, which will likely generate noise and vibrations from the more than 900 truck trips per day that may be incompatible with commercial activities.

***Limit Public Access near Secure Zones and Terminal Operations.*** Once opened and under Massport Police surveillance, the DFC will be a restricted access roadway, providing critical freight access between Conley Terminal and nearby truck routes such as Summer Street, Massport Haul Road, and the South Boston Bypass Road. The proponent has the right to construct and use a single driveway connecting to the DFC into the project site for delivery and service access to the site only; this connection is shown on plans included in the ENF. It is imperative that this connection remains gated to maintain the security of the DFC and that it is used only for service purposes.

***Limit Transportation Impacts.*** Mixed use development of the L Street Station site will increase multi-modal traffic and bring 10,250 new vehicle trips in the East First Street/Summer Street neighborhood and the surrounding community. The ENF form on page 3 lists 8,780 vehicle trips. However, we understand from the ENF's data tables that this is the number of new bicycle and pedestrian trips, not vehicle trips. We understand that this development intends to create a grid of streets on the parcel and to provide above ground on-site parking on several parcels. As part of the continued environmental review process, Massport will look forward to reviewing a more detailed analysis of the project's projected traffic impacts and operating characteristics to ensure they will not negatively impact Conley operations. In particular, we will be seeking to maintain the safe, efficient, and timely operations of the new signalized intersection at the DFC and Summer Street. It is imperative that freight movement on Summer Street is not adversely impacted by the additional vehicle trips generated by the project.

***Open Space and Waterfront Access.*** The ENF describes a concept for a highly programmed active waterfront open space along the northern edge of the site. Due to the need to maintain security of the DFC, Massport requests that waterfront open space be designed with landscaped buffer to provide separation from the DFC in all locations. Public recreation plans should be evaluated for their compatibility with the noise, light, and truck traffic of the active port. Additionally, Massport is soon to open the 4.5-acre Thomas Butler Memorial Park along East First Street to the east of the 776 Summer Street site, which will buffer the community from Conley Terminal noise and will include many amenities for the local community. We support the developers' plans to continue the spine of public access along East First Street through the development site to the intersection of East First Street and Summer Street and would support additional connections leading from the interior of the site to the park.

**Building Heights**. In coordination with the Federal Aviation Administration (FAA), Massport has prepared and widely circulated the *Logan Airspace Map* that defines the critical airspace around Boston Logan International Airport to protect the flight corridors in and out of the Airport (see attached map). Created by Massport, with input from airlines, pilots, city officials, and the FAA, it helps guide developers and regulatory authorities to safely build to maximum structure heights without compromising air travel safety. The map aids developers in their planning and assists the FAA in its review of individual projects to determine if they present a potential hazard to air navigation.

As noted above, the ENF describes an increase in the maximum building heights surrounding the L Street Station site. The project building heights presented in the ENF are based on Boston Zoning Code rather than an elevation of the tallest building structure compared to elevation above mean sea level (AMSL – NAVD88). Accordingly, additional information on the proposed building heights using the *Logan Airspace Map* baseline is needed to determine if the Project is consistent with the Airspace Map. We are pleased to hear that the project will involve removal of the two

stacks that have historically penetrated Logan's protected airspace and that all site buildings will remain below the critical FAA surfaces, thereby removing an obstruction to Logan Airspace.

Massport recommends that the Proponent coordinate closely with FAA and Massport during the remainder of the design process to ensure that individual building heights remain consistent with the *Logan Airspace Map* and also early in the construction phase, which is particularly important to minimize the extent and duration of impacts of the crane(s) on the airspace. The Proponent will be required to submit multiple Form 7460s to the FAA, one for each permanent building and a separate filing for construction cranes.

Thank you again for your consideration of our comments. We look forward to continued collaboration as the L Street Station proceeds. Please feel free to contact me at (617) 428-2815 or at lwieland@massport.com if you wish to discuss any of our comments.

Sincerely,

**Massachusetts Port Authority**

Lisa Wieland
Port Director

CC: T. Glynn, J. Doolin, G. Carr, A. Hargens, S. Dalzell, H. Morrison, L. Gilmore, F. Leo, M. Gove/Massport
B. Golden/Boston Planning & Development Agency
D. Koh/Office of Mayor Martin Walsh
R. Cox/Redgate Capital Partners

Enclosures: Logan Airspace Map
Conley Terminal Master Plan

# Boston – Logan International Airport
# Composite of Critical Airspace Surfaces

## Legend

### Surface Elevations (MSL)

- 801' to 1,000'
- 601' to 800'
- 401' to 600'
- 201' to 400'
- up to 200'
- Downtown Zone Area

Dashed lines identify transition from "Flat" to "Sloping" surface.

Contour Interval = 25 FT

Notes:

1. This Composite Map is intended for informational and conceptual planning purposes only and does not represent actual survey data nor should it be used in the development of a FAA Form 7460. Massport does not certify the accuracy, information or title to the properties contained in this plan nor make any warranties of any kind, express or implied, in fact or by law, with respect to boundaries, easements, restrictions, claims, overlaps, or other encumbrances affecting such properties.

2. This Composite Map does not replace the FAA's 7460 review process. Consistency with the surfaces shown on this map does not ensure that the proposal will be acceptable to the FAA and air carriers. Massport reserves the right to re-assess, review and seek modifications to projects that may be consistent with this Composite Map but that through the FAA 7460 process are found to have unexpected impacts to Boston Logan's safety or efficiency.

3. Surface elevations are referenced in feet Above Mean Sea Level (AMSL - NAVD88)

**COMPOSITE MAP PARAMETERS**

| SURFACE TYPES | RUNWAYS |
|---|---|
| C RCLE-TO-LAND | ALL RUNWAYS (EXCEPT 14) |
| ICAO/AC ONE ENG NE INOP. | 4R, 4L, 9, 14, 15R, 22L, 22R, 27, 33L |
| IFR STND DEPARTURE | 4R, 9, 14, 15R, 22L^, 22R^, 27^, 33L |
| IFR NON-STND DEPARTURE | 4L |
| ILS APPROACH | 4R, 15R, 22L, 27, 33L |
| ILS MISSED APPROACH | 4R*, 15R, 22L, 27, 33L*^^ |
| LOCALIZER APPROACH** | 4R, 15R, 22L, 27, 33L |
| LNAV APPROACH** | 4R, 15R, 22L, 27, 32, 33L |
| LNAV MISSED APPROACH | 4R, 15R, 22L, 27, 32, 33L |
| PART 77 - STANDARD | EAST OF 4R/22L |
| PART 77 - VFR ONLY | WEST OF 4R/22L (N. OF DOWNTOWN) |
| VIS BILITY (CIRCL NG) | ALL RUNWAYS (EXCEPT 14) |
| VIS BILITY (STRAIGHT- N) | 4R, 15R, 22L, 27, 32, 33L |
| VNAV APPROACH | 4R, 15R, 27, 33L |
| VNAV MISSED APPROACH | 4R, 15R, 27, 33L |

* INCLUDES TRANSITION FROM PREVIOUS CRITERIA
^ CAT 1 AND CAT 3
^^ CAT 3 SHIFTED 200 NW
** ACCOUNTS FOR 7 1 DRIFT DOWN

N W E S

massport

**VERSION 2.0** **December 2011**

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**Massachusetts Port Authority**
*Real Estate & Asset Management*
*April 2017*

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# Conley Terminal Master Plan
## (2018-2023 Implementation)
*South Boston*

boston planning & development agency

July 7, 2017

Secretary of Energy and Environmental Affairs
Executive Office of Energy and Environmental Affairs
ATTN: MEPA Office
Mr. Alex Strysky, EEA #15692
100 Cambridge Street, Suite 900
Boston, MA 02114

RE: Environmental Notification Form/Expanded Project Notification Form EEA #15692
L Street Station Redevelopment, 776 Summer Street, Boston, MA 02127

Dear Mr. Strysky,

Waterfront Planning staff of the Boston Planning & Development Agency (BPDA, or the "Agency") have received and reviewed the above-reference Environmental Notification Form/Expanded Project Notification Form ("ENF") submitted by HRP 776 Summer Street LLC (the "Proponent") for the proposed redevelopment of the decommissioned Boston Edison L Street Power Station (the "Project") located at 776 Summer Street in South Boston (the "Project Site"). The Project includes the cleanup and abatement of the 15-acre Project Site and existing buildings, 2.1-million square feet of mixed-use development, including the adaptive reuse of portions of the former power station, and more than two acres of public open space, including on the Project's shoreline. The Project Site consists of approximately four acres of private filled tidelands and approximately eleven acres of upland on the Reserve Channel; it is also within the South Boston Designated Port Area (DPA). As a result, the portions of the site that are filled tidelands are subject to the state's Waterways Regulations, as applicable.

Following the sale of the Project Site by the Exelon Corporation to the Proponent in 2016, the Agency initiated a public engagement process earlier this year. The purpose of the process was, given the prominence of the Project Site within South Boston and opportunities inherent in its redevelopment to significantly enhance the community, to better understand the priorities and aspirations of the neighborhood and affected stakeholders. The Agency hosted an open house, walking tours of the Edison Turbine Hall, and two community workshops, which altogether culminated in a planning process report (the "Report"), which is enclosed. The Report outlined a vision for the redevelopment of the Project Site and concepts intended to assist the development plan for the Project. The Project is generally consistent with the Report, which provides the foundation for the Agency's review of the Project through Article 80B of the City of Boston Zoning Code.

boston planning & development agency

During the concurrent MEPA Office and Agency review periods, the Proponent submitted a request to the Massachusetts Office of Coastal Zone Management (CZM) to initiate a review of the South Boston Designated Port Area (DPA) boundary ("Boundary Review"), which the Agency supports. While the Project Site originally met the criteria for inclusion within the DPA, the decommissioning of the power station and construction of the Conley Dedicated Freight Corridor, which will provide a direct connection for trucks between Summer Street and Conley Terminal – a long-standing City and neighborhood objective in order to remove truck traffic from East First Street – and effectively limit access to the Reserve Channel from the Project Site, have significantly diminished the Project Site's capacity for future water-dependent industrial use. Further, removal of the Project Site from the DPA will also advance the vision of Imagine Boston 2030, the City of Boston's first citywide plan in fifty years, which identified the site as a potential mixed-use growth area for much-needed new housing and job growth. (The latest draft of the plan is available at imagine.boston.gov/imagine-boston-plan/.) As a part of Imagine Boston 2030, the City also published an assessment of its waterfront and vision for its future. The Waterfront Assessment and Vision (available at imagine.boston.gov/imagining-bostons-waterfront/) developed nine principles to achieve a climate-resilient, sustainably managed waterfront for all. Those applicable to the Project Site include the creation of new open spaces on the water's edge; ensuring diverse experiences along the waterfront; improving connections between neighborhoods and the waterfront; and expanding waterfront housing and job centers. With its mixed-use development program and unique water open space that will preserve industrial artifacts of the site, the Project will significantly contribute to the realization of the goals of Imagine Boston 2030 according to the principles outlined by the Waterfront Assessment and Vision, provided it is removed from the DPA.

Agency staff will provide comment to CZM and testimony as a part of the Boundary Review process.

We appreciate the opportunity to comment and for your consideration.

Very truly yours,

Richard McGuinness
Deputy Director for Climate Change and Environmental Planning

Encl: *South Boston Edison Power Plant Planning Process Report*, BPDA

boston planning &
development agency

cc: Tim Czerwienski, Project Manager, BPDA
Lisa Berry Engler, Boston Harbor Regional Coordinator, CZM
Ben Lynch, Program Chief, MassDEP Waterways

# BOSTON

Martin J. Walsh, Mayor

August 4, 2017

Ms. Teresa Polhemus
Boston Redevelopment Authority
One City Hall Square
Boston, MA 02201

RE: 776 Summer Street

Dear Ms. Polhemus:

The Boston Parks and Recreation Department (BPRD) has reviewed the ENF/EPNF for the redevelopment of the L Street Station at 776 Summer Street in South Boston. This project is across the street from, and within 100' of Christopher Lee Playground / Medal of Honor Park. This active recreational space will serve as an amenity to the new development.

The project is subject to design review by the Boston Parks and Recreation Commission under Municipal Code Section 7-4.11. In addition, BPRD provides the comments below in order to inform the BPDA's Scoping Determination and a future Draft Environmental Impact Report.

**Impact Mitigation**

In summary of the below, the scale and proximity of the project will have a significant impact on Christopher Lee Playground / Medal of Honor Park. BPRD respectfully requests that mitigation commensurate to the impact of the development be provided in the form of a contribution to the City's Fund for Parks, to be used for public open space in South Boston.

BPRD further requests that the proponent enter into a maintenance agreement to provide turf management and other services at Christopher Lee Playground / Medal of Honor Park.

**Project Description**

The project includes the redevelopment of a 15 acre site with 2.1 million sf of residential, office, hotel, retail, and restaurant use, and ancillary parking. Of this, there will be five blocks with 1.5 million sf of residential use. The ENF/EPNF does not detail the unit size or mix. However, the document notes there will be 1588 units and 2220 bedrooms. BPRD therefore estimates the proposed project will accommodate approximately 2000-3000 residents. These residents will utilize existing and limited public parks and playgrounds in South Boston for active recreation.

**Onsite Open Space**

The ENF/EPNF notes that the 15 acre project site will include 104,500 sf (2.4 acres) of open space including a publicly accessible waterfront area (1.15 acres). Further detail is needed to understand the proposed open space, as the submittal provides conceptual ideas and narrative.

The waterfront area appears to be Chapter 91 310CMR9.51(30(d) open space mitigation, including the provision of the required Harbor Walk. The narrative further describes a small park next to the Turbine Hall at Elkins Street Extension. It also describes an open space at the terminus of Elkins Street and M Street, between Block A and Block F. Finally, an open space will be provided at the corner of Summer and East 1st Street. The remainder of the onsite open space appears to include rooftop decks and spaces located between building blocks.

**Open Space Requirements Under Zoning**

The underlying zoning for this 15 acre site appears to be Article 42A Harborpark District, which requires that a project devote at least 50% of the lot area to open space. The project will seek a Planned Development Area (PDA) approval to allow the project to receive relief from zoning for height, density and open space requirements. It will be important in negotiating the PDA, to understand how the project will meet the base open space requirements under the current zoning.

It is not clear how the open space is being counted under zoning. Public realm features such as streets, sidewalks, plazas, retail corridors and pedestrian ways have limited open space value and are not a substitute for park land available for recreational use. Greater detail is needed to understand how the open space will meet the recreational needs of the residents and the public.

**Open Space and Recreation Plan**

BPRD has advocated for permanently-protected, publicly-accessible park land in South Boston, to serve the active recreational needs of this rapidly growing neighborhood and to balance significant new development that is dense in scale and often lacking in on site open space. This project should detail how it intends to meet the goals and needs for South Boston as identified in the *Open Space and Recreation Plan 2015-2021.*

**Parks Needs Analysis**

A parks needs analysis should be completed based on projected residents, workers and visitors. This analysis should include an estimate of the demand for active recreational needs, the ability to accommodate those needs onsite, and/or the reliance on existing public open space in the neighborhood. In the event that active uses cannot be accommodated onsite, the equivalent amount of park land should be mitigated nearby. This need could also be addressed by contributing to a fund for development of future public park land in the neighborhood.

**Public Realm**

The public realm should include inviting, vibrant, public spaces that can provide civic functions in addition to retail plaza functions. This can be achieved by fronting these spaces on the public rights of way, or broadening the points of connection. Public spaces could also be transferred to public ownership, ensuring that their future design and uses will be informed by the public.

**Protection in Perpetuity**

Parks should ideally be permanently protected to ensure that they remain open in perpetuity.

**Dog Recreation Space**

The project should include a Dog Recreation Space onsite. Though it is adjacent to a dog park, the high density of development would burden one of the few dog parks available in the city. The project should therefore plan to accommodate the needs of its canine residents onsite.

**Construction Impacts**

The proponent should detail any potential construction impacts (noise, air quality, traffic impacts, etc.) that may impact Christopher Lee Playground / Medal of Honor Park.

**Conclusion**

The scale and proximity of the project will have a significant impact on Christopher Lee Playground / Medal of Honor Park and should be mitigated as appropriate. BPRD looks forward to meeting with the proponent and the BPDA to discuss the provision of park land as a critical amenity to serve the residents of this development as well as the public.

Sincerely,

Carrie Marsh

Carrie Marsh, Executive Secretary
Boston Parks and Recreation Commission

cc: Christopher Cook, Commissioner, Boston Parks and Recreation Department
Liza Meyer, Chief Landscape Architect, Boston Parks and Recreation Department
Jon Greeley, Director of Development Review, Boston Redevelopment Authority
Tim Czerwienski, Project Manager, Boston Planning and Development Agency

**Boston Water and Sewer Commission**

980 Harrison Avenue
Boston, MA 02119-2540
617-989-7000

June 30, 2017

Secretary Matthew A. Beaton
Executive Office of Energy and Environmental Affairs
Attention: MEPA Office
Alex Strysky, EEA No. 15692
100 Cambridge Street, Suite 900
Boston, MA 02114

and

Mr. Gary R. Uter
Project Manager
Boston Planning and Development Agency
One City Hall Square
Boston, MA 02201

Re: L Street Station
Environmental Notification Form /
Expanded Project Notification Form

Dear Secretary Beaton and Mr. Uter:

The Boston Water and Sewer Commission (Commission) has reviewed the Environmental Notification Form (ENF) and the Expanded Project Notification Form (EPNF) for the proposed redevelopment project located at 776 Summer Street in the South Boston neighborhood of Boston.

The proposed project is located on a 15-acre site bordered by the Reserve Channel, Summer Street and East First Street. The site was formerly occupied by Boston Edison's electric generating facility and has several buildings and support structures that were used for electric generation. The ENF/EPNF summarizes an alternative development scenario to the preferred scheme. The project proponent HRP 776 Summer Street, LLC's (HRP), proposed preferred alternative is to raze the existing structures with the exception of the Turbine Hall and construct a mixed use development over a ten year period. The project will include rehabilitation of the exiting Turbine Hall and construction of eight buildings totaling 2.1 million square feet (sf). The building heights will vary from 44 to 220 feet. The eight buildings will have approximately 339,639 sf. of office space, 68,077 sf. of retail space, 1,588 residential unit, a 150 room hotel and parking spaces for 987 vehicles. Site improvements include approximately 104,500 sf of outdoor public space.

For water service, the Commission owns and maintains a 12-inch water main in East First Street and a 12-inch water main in Summer Street. The water mains are part of the Commission's Southern Low Pressure Zone.

Sewer and drainage of the site is provided by a 12-inch sanitary sewer and an 18-inch storm drain in East First Street. Summer Street has an 30- inch by 24-inch combined sewer overflow pipe that increases to a 30-inch pipe and an 15-inch sanitary sewer that increases to an 18-inch pipe.

The ENF/EPNF states water demand for the proposed development is estimated to be 329,890 gallons per day (gpd) and wastewater generation is estimated to be 299,900 gpd.

The Commission has the following comments regarding the proposed project:

General

1. Prior to demolition of any buildings, all water, sewer and storm drain connections to the buildings must be cut and capped at the main pipe in accordance with the Commission's requirements. The proponent must then complete a Termination Verification Approval Form for a Demolition Permit, available from the Commission and submit the completed form to the City of Boston's Inspectional Services Department before a demolition permit will be issued.

2. All new or relocated water mains, sewers and storm drains must be designed and constructed at HRP's expense. They must be designed and constructed in conformance with the Commission's design standards, Water Distribution System and Sewer Use Regulations, and Requirements for Site Plans. To assure compliance with the Commission's requirements, the proponent must submit a site plan and a General Service Application to the Commission's Engineering Customer Service Department for review and approval when the design of the new water and wastewater systems and the proposed service connections to those systems are 50 percent complete. The site plan should include the locations of new, relocated and existing water mains, sewers and drains which serve the site, proposed service connections as well as water meter locations.

3. The Department of Environmental Protection (DEP), in cooperation with the Massachusetts Water Resources Authority and its member communities, is implementing a coordinated approach to flow control in the MWRA regional wastewater system, particularly the removal of extraneous clean water (e.g., infiltration/inflow (I/I)) in the system. In April of 2014, the Massachusetts DEP promulgated new regulations regarding wastewater. The Commission has a National Pollutant Discharge Elimination System (NPDES) Permit for its combined sewer overflows and is subject to these new regulations [314 CMR 12.00, section 12.04(2)(d)]. This section requires all new sewer

connections with design flows exceeding 15,000 gpd to mitigate the impacts of the development by removing four gallons of infiltration and inflow (I/I) for each new gallon of wastewater flow. In this regard, any new connection or expansion of an existing connection that exceeds 15,000 gallons per day of wastewater shall assist in the I/I reduction effort to ensure that the additional wastewater flows are offset by the removal of I/I. Currently, a minimum ratio of 4:1 for I/I removal to new wastewater flow added is used. The Commission supports the policy, and will require proponent to develop a consistent inflow reduction plan. The 4:1 requirement should be addressed at least 90 days prior to activation of water service and will be based on the estimated sewage generation provided on the project site plan.

4. The design of the project should comply with the City of Boston's Complete Streets Initiative, which requires incorporation of "green infrastructure" into street designs. Green infrastructure includes greenscapes, such as trees, shrubs, grasses and other landscape plantings, as well as rain gardens and vegetative swales, infiltration basins, and paving materials and permeable surfaces. The proponent must develop a maintenance plan for the proposed green infrastructure. For more information on the Complete Streets Initiative see the City's website at http://bostoncompletestreets.org/

5. For any proposed masonry repair and cleaning HRP will be required to obtain from the Boston Air Pollution Control Commission a permit for Abrasive Blasting or Chemical Cleaning. In accordance with this permit HRP will be required to provide a detailed description as to how chemical mist and run-off will be contained and either treated before discharge to the sewer or drainage system or collected and disposed of lawfully off site. A copy of the description and any related site plans must be provided to the Commission's Engineering Customer Service Department for review before masonry repair and cleaning commences. HRP is advised that the Commission may impose additional conditions and requirements before permitting the discharge of the treated wash water to enter the sewer or drainage system.

6. The Commission will require HRP to undertake all necessary precautions to prevent damage or disruption of the existing active water and sewer lines on, or adjacent to, the project site during construction As a condition of the site plan approval, the Commission will require HRP to inspect the existing sewer lines by CCTV after site construction is complete, to confirm that the lines were not damaged from construction activity.

7. It is HRP's responsibility to evaluate the capacity of the water, sewer and storm drain systems serving the project site to determine if the systems are adequate to meet future project demands. With the site plan, HRP must include a detailed capacity analysis for the water, sewer and storm drain systems serving the project site, as well as an analysis of the impacts the proposed project will have on the Commission's water, sewer and storm drainage systems.

8. HRP should be aware that the US Environmental Protection Agency issued the Remediation General Permit (RGP) for Groundwater Remediation, Contaminated Construction Dewatering, and Miscellaneous Surface Water Discharges. If groundwater contaminated with petroleum products, for example, is encountered, HRP will be required to apply for a RGP to cover these discharges.

Water

1. HRP must provide separate estimates of peak and continuous maximum water demand for residential, commercial, industrial, irrigation of landscaped areas, and air-conditioning make-up water for the project with the site plan. Estimates should be based on full-site build-out of the proposed project. HRP should also provide the methodology used to estimate water demand for the proposed project.

2. The Commission supports HRP's commitment to explore opportunities for implementing water conservation measures in addition to those required by the State Plumbing Code. In particular, HRP should consider outdoor landscaping which requires minimal use of water to maintain. If HRP plans to install in-ground sprinkler systems, the Commission recommends that timers, soil moisture indicators and rainfall sensors be installed. The use of sensor-operated faucets and toilets in common areas of buildings should be considered.

3. HRP is required to obtain a Hydrant Permit for use of any hydrant during the construction phase of this project. The water used from the hydrant must be metered. HRP should contact the Commission's Meter Department for information on and to obtain a Hydrant Permit.

4. The Commission is utilizing a Fixed Radio Meter Reading System to obtain water meter readings. For new water meters, the Commission will provide a Meter Transmitter Unit (MTU) and connect the device to the meter. For information regarding the installation of MTUs, HRP's should contact the Commission's Meter Department.

Sewage / Drainage

1. In conjunction with the Site Plan and the General Service Application HRP will be required to submit a Stormwater Pollution Prevention Plan. The plan must:

   - Identify specific best management measures for controlling erosion and preventing the discharge of sediment, contaminated stormwater or construction debris to the Commission's drainage system when construction is underway.

   - Include a site map which shows, at a minimum, existing drainage patterns and areas used for storage or treatment of contaminated soils, groundwater or stormwater, and

the location of major control structures or treatment structures to be utilized during the construction.

- Specifically identify how the project will comply with the Department of Environmental Protection's Performance Standards for Stormwater Management both during construction and after construction is complete.

2. As stated in the ENF/EPNF, a NPDES General Permit for Construction from the Environmental Protection Agency and the Massachusetts Department of Environmental Protection is required. A copy of the permit and any pollution prevention plan prepared pursuant to the permit must be provided to the Commission's Engineering Services Department, prior to the commencement of construction. The pollution prevention plan submitted pursuant to a NPDES Permit may be submitted in place of the pollution prevention plan required by the Commission provided the Plan addresses the same components identified in item 1 above.

3. The Commission encourages HRP to explore additional opportunities for protecting stormwater quality on site by minimizing sanding and the use of deicing chemicals, pesticides, and fertilizers.

4. The discharge of dewatering drainage to a sanitary sewer is prohibited by the Commission. HRP is advised that the discharge of any dewatering drainage to the storm drainage system requires a Drainage Discharge Permit from the Commission. As stated previously, if the dewatering drainage is contaminated with petroleum products, HRP will be required to obtain a Remediation General Permit from the Environmental Protection Agency (EPA) for the discharge.

5. HRP must fully investigate methods for retaining stormwater on-site before the Commission will consider a request to discharge stormwater to the Commission's system. The site plan should indicate how storm drainage from roof drains will be handled and the feasibility of retaining their stormwater discharge on-site. Under no circumstances will stormwater be allowed to discharge to a sanitary sewer.

6. Sanitary sewage must be kept separate from stormwater and separate sanitary sewer and storm drain service connections must be provided. The Commission requires that existing stormwater and sanitary sewer service connections, which are to be re-used by the proposed project, be dye tested to confirm they are connected to the appropriate system.

7. The Commission requests that HRP install a permanent casting stating "Don't Dump: Drains to Boston Harbor" next to any catch basin created or modified as part of this project. HRP should contact the Commission's Operations Division for information regarding the purchase of the castings.

8. If a cafeteria or food service facility is built as part of this project, grease traps will be required in accordance with the Commission's Sewer Use Regulations. HRP is advised to consult with the Commission's Operations Department with regards to grease traps.

9. The enclosed floors of a parking garage must drain through oil separators into the sewer system in accordance with the Commission's Sewer Use Regulations. The Commission's Requirements for Site Plans, available by contacting the Engineering Services Department, include requirements for separators.

10. The Commission requires installation of particle separators on all new parking lots greater than 7,500 square feet in size. If it is determined that it is not possible to infiltrate all of the runoff from the new parking lot, the Commission will require the installation of a particle separator or a standard Type 5 catch basin with an outlet tee for the parking lot. Specifications for particle separators are provided in the Commission's requirements for Site Plans.

Thank you for the opportunity to comment on this project.

Yours truly,

John P. Sullivan, P.E.
Chief Engineer

JPS/rja

C: R Cox, Redgate
M. Connolly, MWRA via e-mail
M. Zlody, BED via e-mail
P. Larocque, BWSC via e-mail

# BOSTON PRESERVATION ALLIANCE

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Gregory J. Galer, Ph.D.

August 4, 2017

Mr. Tim Czerwienski
Boston Planning and Development Agency
One City Hall Square
Boston, MA 02201
Via email: tim.czerwienski@boston.gov
**Re: 776 Summer Street, South Boston**

Dear Mr. Czerwienski,

The Boston Preservation Alliance is Boston's primary, non-profit advocacy organization that protects and promotes the use of historic buildings and landscapes in all of the city's neighborhoods. With 40 Organizational Members, 98 Corporate Members, and a reach of 35,000 friends and supporters we represent a diverse constituency advocating for the thoughtful evolution of the city and celebration of its unique character. We appreciate the opportunity to offer comments on projects that impact the historic character of the city.

The Alliance has had the opportunity to visit the power plant site at 776 Summer Street and participate in a recent public meeting. We applaud the proponent's efforts to add vibrancy and energy back to this site through the proposed mixed-use redevelopment, and appreciate their extensive community outreach early in the process.

This large industrial and engineering complex was the site of important developments of the electrical industry not just for Boston but for the nation. The evolution and growth of the site and its buildings reflect the changes and innovation in the technology of power generation as demand grew here in Boston. Evidence of those developments are visible in the buildings themselves both inside and out. From the late 19$^{th}$ to just a decade ago, from early D.C. power to modern generation, this site still speaks to the critical importance of industrial infrastructure to our social and economic development. In an age when so much of our technology exists in small, black boxes it is not surprising that there is great interest in the unique, mechanical, and industrial physicality of places such as this. Additionally, many aspects of this property reflect an age when industrial sites were framed within buildings that paid greater attention to design and detail than they do today. Decorative tiles, lighting fixtures, and other adornments tell an important lesson of how culture embraced technology. Many significant architectural, engineering, and design elements of the existing structures are important parts of the redevelopment of the site, and we believe will play an essential role in the differentiation, marketing, and exuberance for

The Otis House
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**bostonpreservation.org**

this property in its new use. We are confident that preservation will play an important and necessary role in the success of this project.

Therefore, while we recognize that redevelopment of the site and its transformation from a heavy industrial use requires significant removal of equipment and demolition of portions of the site, we also encourage the proponent to incorporate as much of the historic fabric into the project as possible. We understand that power plants in particular present unique challenges; structure and mechanical equipment can be integral to each other and the demolition of interior contents to provide available space for new uses may necessitate the loss of exterior walls. However, we also recognize that there are many instances where important, contributing structure can be saved for new uses.

We agree with the proponent that the most significant features of the site are within the three turbine halls and we greatly appreciate the proposal for their restoration and reuse. We strongly encourage and support the sensitive incorporation of the turbine halls into the project. Doing so not only would integrate the history of the site into the new development, but would salvage many interesting architectural features such as vibrant green tile, arched windows, and several pieces of historically significant machinery. This unique space could be the centerpiece of the development and create a sense of place for the site. We do feel, however, that if the turbine halls are the only buildings of the power plant to remain on the site and were to be engulfed by new development, their context would be lost.

Therefore, we encourage the proponent to rehabilitate the oldest building on the site, the c. 1898 masonry building beside the turbine halls, as well. This would retain visual continuity between the surviving structures and maintain the industrial context that makes this site unique from the exterior. We look forward to dialog with the proponent, review agencies, and the community about how these historic buildings can become an important part of the project and its success.

The Alliance also has concerns about the proposal to insert an interior street for vehicular traffic through the turbine hall. While we understand that site circulation is important and that there is significant concern about traffic in the neighborhood, we are concerned that this intervention may adversely effect to the historic spaces, their visual continuity, and their use. We encourage the proponent to present more information about why this interior street is necessary and what impacts it will have across the site. Similarly, discussion of new penetrations into the walls of the turbine halls for new windows requires further discussion. With reopening of the windows of the clerestory monitor of the roof we feel there is opportunity to generate significant natural light without disruption of the character-defining tile walls.

We are encouraged in many ways by the initial proposal and the skilled team working on the project, including members with significant experience adapting industrial sites to modern uses. While we cannot fully embrace all aspects of the initial filing, we look

forward to engaging further as this project evolves. We are confident that our recommendations will be seriously considered and we will have opportunity to discuss them further.

Sincerely,



Greg Galer
Executive Director

CC:

Gregory Bialecki, Redgate
Albert Rex, MacRostie Historic Advisors
Elizabeth Grob, VHB

July 7, 2017

Secretary of Energy and Environmental Affairs Matthew A. Beaton
Executive Office of Energy and Environmental Affairs (EEA)
Attn: MEPA Office, Alex Strysky
100 Cambridge Street, Suite 900
Boston MA 02114

Brian Golden, Director
Boston Planning and Development Agency
Boston City Hall
Boston, MA 02201

Re: EEA No. 15692, L Street Power Station Redevelopment, South Boston
ENF/Expanded PNF

Dear Secretary Beaton and Director Golden:

WalkBoston is pleased to see the proposal for a mixed use development of the large South Boston waterfront site that will include the re use of the historically and architecturally interesting L Street Power Station. Putting this portion of the City back into a productive use that invites public access is a positive change for the City and for South Boston.

The overall site design will help to integrate this large parcel into the neighborhood, and create new opportunities for people to walk from East 1st Street to the waterfront and help to link the residential portions of South Boston into the site which was long cut off from the community by fences and other obstructions. The partial extension of the local street network onto the site and between and around new buildings proposed for the site seems appropriate in scale. With sidewalks that are sufficiently wide and landscaped, both community residents and people living on site will be served by the new connections.

Our comments below are focused on questions that we hope the proponent will respond to in subsequent filings about the project.

1. Waterside Pedestrian and Open Space Environment
   We understand that the new dedicated harborside freight corridor that will connect Summer Street to Massport's Conley Terminal and remove heavy truck traffic from East 1st Street will provide very important, and long desired improvements to the South Boston neighborhood. But this shift will also present challenges; the new harborside route will place an access barrier and significant truck traffic (with its accompanying noise and air pollution) between the development site's primary open space and the harbor.

   We urge the developer to consider creative ways to mitigate the truck route's impact on the open space. This could include grade changes that place the open space higher than the truck route (Figure 3.5b may hint at this); landscaping that both masks and frames views, soundscapes to mask truck noise, and the addition of viewing platforms that allow open space users to gain unimpeded views of the water. There may also be ways to capitalize on the site's

industrial past and on going use through interpretive elements. WalkBoston is concerned that without such special treatment the open space will not be very attractive to the public.

If possible, the proponent might also explore with Massport whether it would be possible to schedule truck traffic so that is interferes less with daytime and weekend use of the open space.

2. Encouragement of walking and walking transit trips
   At the direction of the City, the proponent has used South Boston adjusted trip generation rates to develop trip tables for walking/biking, transit and vehicles. However, the site is at a significant distance from other land uses that would seem to justify such significant numbers of walking trips, and to suffer from overused bus lines and significant distances to the Red and Silver Lines. Figure 5 1 illustrate the 5 and 10 minute walking zones, neither of which include a great many retail, job and civic land uses.

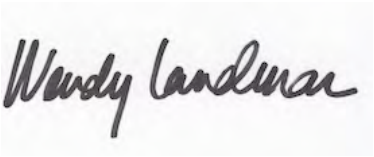
   We urge the proponent to develop mitigation measures to make the development a more realistically mixed mode project. These could include such things as: subsidies to the MBTA to provide more frequent bus service, or creation or partnering with other South Boston developments to provide shuttle services to the Silver and/or Red Lines.

3. Bicycle facilities
   The proponent mentions that Boston has flagged both East 1st Street and Summer Street for protected bicycle facilities, however Figure 3.5a shows an on street bike lane.

   We urge the proponent to work with the City, and perhaps provide funding for, separated bicycle facilities on both East 1st Street and Summer Street. The distance of the site from transit and a mix of retail, job and civic facilities will make bicycling a more likely mode of off site trips than walking.

We look forward to working with the City and Redgate as the project plans are developed in greater detail.

Sincerely,



Wendy Landman
Executive Director

Cc Ralph Cox, Greg Bialecki, Megha Vadula, Redgate
Elizabeth Grob, VHB

365 West Broadway
South Boston, MA 02127
tel: 617.268.9610
fax: 617.268.4813

August 1, 2017

Tim Czerwienski
Boston Planning & Development Agency
One City Hall Square
Boston, MA 02201
bostonplans.org

Re: 776 Summer Street, South Boston (L Street Station Redevelopment)

Dear Mr. Czerwienski:

I am writing to express my concerns about the proposal to develop the former Boston Edison plant at 776 Summer Street in South Boston. I am the Executive Director of South Boston Neighborhood Development Corporation and a long time neighborhood resident. Over the last 10 years, many of our friends and neighbors have been displaced from the community because of the dramatic increase in housing costs. The proposed development of the Edison Plant will have serious negative impacts on our neighborhood and fails to address the urgent need for affordable housing for working families and the elderly.

Hilco/Redgate, the developer, is proposing to build a dense development with a hotel, commercial/retail and nearly 1,600 units of housing. Their plan to include only the minimum 15% affordable units on the site should be increased to at least 30% of the units to address the community need for affordable housing. Too often with past developers, the South Boston neighborhood has settled for only the minimum in affordability. This site should be developed in an inclusive manner, to offer housing opportunities to a wide range of residents.

In addition to increasing the percentage of affordable units, the proposed development should include units that are affordable to the elderly and working families. The City's Inclusionary Development requirement is not adequate to address this critical neighborhood need because the income levels for IDP units are not low enough to address the needs of low income workers who earn less than $50,000 annually. Elderly residents are most at risk of displacement because their income is usually below $25,000 annually.

South Boston deserves a greater percentage of affordability to mitigate the impacts of this project. We do not need more luxury housing; we need ownership and rental opportunities for working families and deeply affordable housing for the elderly.

Thank you for this opportunity to comment.

Best Regards,



Donna Brown

Executive Director

Tim Czerwienski <tim.czerwienski@boston.gov>

# 776 Summer Street proposals

Dan McCole [redacted] Fri, Aug 4, 2017 at 9:41 PM
To: tim.czerwienski@boston.gov

August 4, 2017
Tim Czerwienski
Project Manager
Boston Development and Planning Agency

Statement by the South Boston Board of Directors … (SBAA)

In March of last year (2016) officers of the South Boston Arts Association contacted the officers of Redgate/Hilco, developers of the former Boston Edison power plant at 776 Summer Street, and proposed an arts and cultural community center in their redevelopment plans. Since then the developers held four well advertised sessions at the Tynan School auditorium. The Boston Planning and Development Agency also held four sessions … all advertised and promoted and open to the public.

Highlighted among the many subjects addressed were:

Traffic Issues : Traffic on First and Summer especially during the drive time 7:30 to 9:30 and 3:30 to 6:30 in the afternoons has been a problem for many years. It was made plain to the developers that this is a must concern for the people who took the time to attend the meetings.

Environmental Issues: Questions were asked and concern stressed that any residue environmental hazards need to be addressed.

Parking: Lack of convenient parking spaces for residents is the perennial problem in today's South Boston.

Affordable Housing: We need more housing for our seniors at affordable rent.

We have seen redevelopment change the physical nature of South Boston without any apparent interest in the wishes and life style of its residents.

The developers have said they will consider all aspects of the resident's concerns.

The SBAA commends the redevelopers, Redgate/Hilco, for their openness and transparency regarding their proposed plans and their wise decision to ask for suggestions from all South Boston residents through their many publicly advertised meetings. The Redgate/Hilco people listened and we are fully confident that they have learned of the wishes and needs of our community.

The officers, board of directors and the membership of the South Boston Arts Association have listened to the developer and the residents who took the time to attend these meetings and at this time we stand firmly behind the developer's proposals.

Since our beginning the SBAA has been seeking a site to establish a South Boston Arts and Cultural Community Center. The need for this was apparent as the public schools had abandoned any serious need for Arts Programming in the adoption of their core curriculum for the city's youth. This need was also visible during the 15 years the SBAA has been in operation. Many adult residents (working residents and retired seniors) who had sought to accommodate their suppressed art talents late at night … in their kitchens, basements and attics became members of the SBAA and found a second home … and many new friends who nourished and encouraged their talents. Quite a few have progressed as writers, painters, photographers, performers and many others as friends of the arts.

And as the membership grew it became apparent that the latent need for many in our membership ranks grew into a definite must for space in support of their needs.

Eight years ago the city announced they were accepting proposals for the use of the abandoned D Street Police station (Station 6) by the City of Boston Neighborhood Development Agency for redevelopment. The SBAA joined with associated residents and produced an RFP for plans for an arts and community center. Apparently we were too late … the plans for a small housing development had already been arranged and we lost out.

We then went after the closed St Augustine Church on Dorchester Street. It was up for sale and redevelopment. We partnered with a development firm who would purchase the church, rectory and the school and then sell the church back to the SBAA for an Arts and Cultural Community Center. This development opportunity was eventually denied by the Archdiocese.

The SBAA has been partnering with the South Boston Community Health Center in their youth program since 2006 in youth art programs, including the Lighthouse street art programs … murals, and basic community sessions, such as street cleaning, and for 12 years cosponsored spring break traveling work teams to disaster areas: New Orleans, and Mississippi. For Katrina Hurricane rebuilding, Tuscloosa, Alabama for severe Tornado damage … Long Island for Hurricane damage … and Detroit, Michigan for 2015 Flood disaster.

We seek a small Arts and Cultural Community Center in this new proposal because it would serve all residents … young and old … male and female … long time and newer residents … talented artists and not so much … art-lovers and just plain people.

One more thing ... Where have these latecomers been for the past 15 months? And what stirred the nest?

Thank you for this opportunity.

Dan McCole, president
South Boston Arts Association

August 4, 2017

Tim Czerwienski
Project Manager
Boston Planning & Development Agency (BPDA)
One City Hall Square
Boston, MA 02201

**Re: Comments on Edison Proposal**

Dear Tim:

This letter is intended to identify impacts the IAG members perceive as well as document the additional impacts identified by residents of the area during the community meetings held or expressed by other means to the IAG members.

We understanding that at this phase of the process, the primary responsibility of the IAG is to identify possible impacts the project will create or conditions of the project that may worsen existing contributors, thus impacting the overall quality of life and rights of the existing residents for "quiet enjoyment of their properties." The undersigned IAG members have been present at the numerous community meetings and have endeavored to reflect the general theme, and in some cases the specific concerns, of those who spoke, as well as cite any perceived impacts that were not necessarily raised during the community meetings.

The undersigned IAG members are of the opinion that Alternative B has not been given the appropriate amount of attention. Although the impacts listed here are somewhat transferable to both options, the IAG has the sense from the community that the preferred option described in the L Street Station Redevelopment document provided by the proponent, is the singular plan being pursued. The IAG requests that Alternative B be given due diligence and attention. We also feel that the responses provided in the scoping document must include this alternative, to address the community impression that only one project type is being pursued. Those community members that did not attend the Charrettes and other community meetings, must have their concerns addressed, and the record documents should include a full chronological telling of just how the preferred option was established.

We also recognize that some of the issues raised in the community meetings are far beyond the project scope, and will require additional approvals and authorizations from the Commonwealth before the IAG and City processes can begin to play out. The city planners (BPDA, etc.) must do a better job communicating with their own departments, collaborating with state agencies (and federal agencies, if necessary), and must do a better job communicating with the South Boston community on how this multifaceted process can efficiently move forward. This theme has been expressed at every community meeting held for this project and for nearly every other project being considered in South Boston. To paraphrase resident comments "South Boston is unique as it is a peninsula with limited access points. It is of vital importance we keep traffic flow open for residents." With three access points on and off this site, this conservatively equates to 3,000 trips daily through each one. We are encouraged that the BPDA appears to be taking a more holistic "Southie" view of the impacts of this project and hope future the planning process will incorporate this "big picture" approach. It is unfortunate that this particular project is being saddled with correction of mistakes made by previous BPDA approval of large scale projects elsewhere in the area. However, developments do not exist in a vacuum and it incumbent on the City of Boston and the BPDA to look at the bigger picture as it moves forward in planning for South Boston and the rest of our city.

The issues we have heard most fervently from members of the neighborhood at the community meetings and through word of mouth (simply speaking with neighbors) are **DENSITY and TRAFFIC**. These issues are foremost in people's minds and have a dependent, symbiotic relationship: higher density means more traffic. These two topics have direct correlations and are intertwined in the minds of the community. These broad-based terms are segmented out into several different categories delineated below as well as a listing of other impacts cited by our neighbors:

**(1) DENSITY:** This is a difficult impact to quantify. There is a general sense that 1,500 residences is much too dense. It certainly would be the highest density in the City Point neighborhood. Although Article 68 in 2015 was geared to attracting residential uses along the 1st corridor, that planning effort did not fathom or anticipate a project of this scale anywhere in City Point or along First Street. Moreover, the recently completed Dorchester Avenue Corridor was intended to absorb larger developments in South Boston--this project, although mirroring the dimensions of the Dot Ave Corridor-- is no where near the growth zone. A development of this size is more appropriate for the SB Waterfront--it is out of place in traditional South Boston. We feel strongly that 1,500 units is too high a number of units. We also recognize that there is a balance that must be struck between less residential units and the numbers associated with impacts like traffic/air quality and public transportation obligations. Most South Boston residents who have attended the meetings have voiced this sentiment. We feel it is up to HRL & BPDA to propose a lower alternative number that meets the project needs and is more in line with housing densities in the immediate surrounding area.

**(2) TRAFFIC MANAGEMENT:** The problems associated with traffic management are sevenfold. The current traffic along L /Summer Street and 1st street is already over-capacity. The project's projected final buildout (either alternate) will only exacerbate the traffic problems. This project requires a traffic study. The suggested area of study for traffic should be at a minimum, Summer/L beginning at D Street and ending at Columbia road. This is a significant stretch of roadway with multiple intersections, some controlled by lights some not. The current traffic signals along this primary artery are inadequate to handle the current traffic volume, let alone the addition of this project. This project coupled with the (7) other large scale buildings slated for the convention Center area, Seaport District/Fort Point Channel & GE. The traffic Study must take a holistic approach and take into the account the projected vehicle volume of these projects, as no single development exists in a silo. The Day Boulevard/Summer Street/L Street corridor has historically been utilized by South Shore commuters to cut through I-93 traffic to reach the city or the Waterfront. With the growth of Waterfront area and the anticipated growth of Fort Point with GE and Amazon, this route has become clogged and nearly impassable at certain hours of the workday. This is the primary road for many areas of South Boston. The signaling and efficient movement of vehicles along this route is the key to a successful project whatever its configuration on the former Edison plant site. All the intersections from D to Columbia that have traffic signals or are slated to have signals installed via this project or through other City/highway improvement projects must be fully integrated, synchronized, and if possible technologically equipped to be responsive to volume on the roadway. Additionally of concern and adding to the increasing traffic in this area is the growth along 1st street from A st to P st all of these small projects have increased vehicular volume on this east/west corridor onto Summer/L. Those impacts must be factored into the study parameters as well. The foundation has already been set for this study with the South Boston Waterfront Sustainable Transportation Plan, which examined these corridors, and traffic along Summer Street, which is the location of this project. However, that plan did not anticipate the added volume from the GE and Amazon relocations, so further study is necessary. This mandatory traffic study must be fully coordinated and integrated into the City and Transportation agencies ongoing comprehensive transportation plans. Adding to the traffic problems the issue of freight truck traffic in and out of Conley

terminal is of major concern. The terminal has been able to remain competitive in the freight market due to its current level of efficiency getting trucks in and out of the terminal faster than the majority of the industry. This bypass road has been a long fought for issue for the residents. 2,700 truck trips a day on a residential street was not sustainable or safe. This project's addition of 10,000 vehicular trips a day to the intersection of 1st and Summer Street quite possibly will undo some of the gains made by the construction of the bypass road. The study of traffic should begin immediately and not wait until issuance of the scoping document. To establish a baseline with the trucks still on 1st street, an interim traffic study following the truck route relocation and that impact on the neighborhood. Then expand to include its own contribution and the adjoining area's added vehicular impacts.

**(3)** **PUBLIC TRANSPORTATION** it is understood that the developer is not responsible for public transportation, but this development will exacerbate substantially the ongoing public transportation problems in the area. Those are in part, overcrowded busses, inconsistent schedules, routes not serving more than one rapid transit interface. The Edison project must engage in dialog with the MBTA to get these issues resolved, especially as the development project sits at the start of the South Boston bus service and will impact service for the rest of the neighborhood and because the HRL development team is relying on MBTA usage for the number of car trips per day in and out of the site. If the MBTA does not deliver on their promises there most certainly will be a greater number of personal car ownership than anticipated. (See parking impact). The BPDA should be requiring of the developer to have contingency plans that if at time of Construction, MBTA service is not functioning according to the numbers presented in the study, then the Edison site parking spot number shall be increased by "X". This increase should be in addition to the parking levels previously discussed. Whether or not the base parking space numbers are above the actual zoning requirements. That excess parking slot number shall not be utilized in any way to meet this surplus commuter parking penalty. The project should include some sort of a covered structure at the corner of 1st and L/Summer. This can either be provided by MBTA or the project, but the intersection must contain a covered structure. The reasoning for this is even if 50% of the residential unit occupants use the MBTA there would be an estimated 300 + people during commuting hours at this corner. The project should also consider establishing a stronger connection to the MBTA platform planned for 1st street. This connection would presumably split the pedestrian traffic coming from the new residences. Again we cite the comprehensive transportation study currently underway as the mechanism to effect real change through cooperative measures with MBTA and roadway administrators.

**(4)** **AIR QUALITY:** The air quality in this area of South Boston is being assaulted on many levels. Cruise & freight ship traffic, *projected increase beyond the current levels*. Air traffic is *projected to increase beyond current levels*, freight truck *numbers are scheduled to increase*. With this project and the general growth of the area vehicular *levels are also rising*. There must be comprehensive study of these increases and the effects on the health of South Boston residents. Previous studies have noted there is markedly increased levels of Lupus, certain respiratory ailments and cancers in South Boston. The direct cause has yet to be definitively determined. Most certainly the previous abuses by the heavy industrial/marine use of the surrounding area is a major contributing factor of these heightened rates of disease. This project's study of its true impact on the air quality in the area will be overshadowed by the aforementioned abuses and inaction by local, state and federal agencies. The studying of the air quality impacts cannot just simply be a snapshot in time. The study must include long-term time lapse impacts. The areas general growth must be factored into the numbers. Many residents have cited the need for (some have been demanding for decades) a cumulative air-quality study to be performed. Many in the area feel that air monitors must be installed in the community to accurately establish the true particulate levels and contentment. This is by far the largest long-term health impact to the residents. All the

aforementioned traffic issues play a large role in air quality. Many residents feel proper signal and revised roadway configuration will play a key part in air quality management. Others have expressed that movement of all vehicles in and out of the project area and "Southie" as whole will certainly assist in the management of air quality. (Moving traffic creates less air born particulates than sitting and idling traffic).

**(5)** **PARKING:** Parking levels as current proposed are wholly inadequate. The current ratio contained in South Boston's current zoning is 1.5 space per unit. This ratio must not be decreased with-in the project area. Most residents feel that this 1.5 is inadequate for this project and should be increased to a ratio of 2.0 spaces per residential unit. The requested 2.0 ratio should not be allowed to include the on street parking slots in the project area. These parking slots should be designated as transient in nature. (i.e. commercial use and consumer use for the multiple community based retail establishments currently envisioned). The streets as currently proposed have raised the subject of what the parking restrictions are and who will enforce those regulations. Additionally who will benefit from the enforcement revenue stream? HRL should clarify this because the streets within the project area are currently proposed as "private ways" In this context the term private ways indicates that the roads will be owned and maintained by the project owners as they are privately held assets. It is not indicated at this time if the roads will contain any access restriction, this also needs to be defined. Residents have also expressed that in a majority of city neighborhoods with similar density levels as South Boston there exists access to a garage (some private some publically owned) during snow events. The South Boston residents have long been requesting such equal treatment. The project must include a snow emergency plan for the project site and parking access plan for the area residents during such emergency at a reduced rate when compared to the general rates during non-emergency events. It is a generally held opinion of the area residents that parking problems cannot be addressed without dramatically increasing the number of parking slots included in the project. Note: All the above parking issues must also be evaluated for: either relief from or overall repeal of the current parking ban imposed by federal statute.

**(6)** **NOISE:** The current building orientation and site layout is to create two new roads traveling North + South. A concern has been raised that these two roads ways will be creating acoustical conduits directly into the neighborhood from the new Conley terminal truck route and the larger cruise port terminal. There should be a comprehensive noise study (including acoustical modeling) of the project's final configuration. Residents presented anecdotal testimony about an incident. Last year there was work being performed across the channel at the concrete aggregate plant which created a massive noise issue? We realize that the aggregate plant operations are not part of this project but the incident brought to light that the Massport designed sound barrier for the Conley terminal is a complete failure and inadequate to protect the neighborhood, from existing noise levels. How this impacts the Edison project is, the buildings as they currently exist create a barrier for the neighborhood from noise being generated from whatever source across the channel. The Edison team must demonstrate that their project configuration will not worsen the level of noise coming into the neighborhood from the cruise port, aggregate plant activity and the Conley terminal trucks. The residents of south Boston fought for many years to remove the noise of these trucks from first street and are not willing to yield on any ground what so ever relative to those noises. The noise generated by the trucks and marine activity must not be made worse by the Edison site configuration. We do recognize that there are allowable limits of increased noise associated with the project, (i.e. HVAC equipment and general ambient noises associated with any residential/commercial uses). Noise levels must be recorded now, prior to the truck route relocation, and also following the truck route relocation, while the existing buildings are intact. This is the only way to be absolutely sure that the project models are accurate and will reflect reality. Many residents have expressed concern that the current site / road layout will promote and possibly amplify the truck

generated noise on the new bypass road bridge directly into the neighborhood. If this scenario turns out to be correct the residents are unwilling to yield on noise level increases derived from freight truck or marine traffic. The project should study whether an additional noise barrier(s) at the truck route itself or at the neighborhood side of the site is the most effective. Or if a re-arrangement of the building will be required.

**(7)** **HISTORIC PRESERVATION:** The complex of existing structure contains many buildings that represent and led the revolution of electricity for the masses. These structures must be retained and preserved. Many residents view the plant with somewhat of a dual personality. Many praise the life their families have had through jobs associated with the plant when operating. But also decry its operation for jeopardizing their health. But most seem to agree the planned demolition goes too far. Many expressed that the arched windows and brick work to the right of the turbine hall must be retained and refurbished. The residents feel connections to the plant as was years ago. The loss of this connection by demolishing such a large percentage of the structures is unacceptable to the residents. Future planning and design of this site must include a greater percentage of preservation.

**(8)** **FIRST RESPONDERS/PUBLIC SAFETY:** This issue not truly a project specific impact. However this project's size will be a substantial contributor to the existing problem. The number of housing units in South Boston "proper" has grown by more than 5,000 in recent years. This project and Washington Village alone will further increase this number by an additional 2,100. These two large scale projects combined with other smaller increases in South Boston will bring the total added housing units on this small peninsular closer to 9,000. *Note this does not include the housing in the Seaport district, just South Boston proper*. Residents feel that It does not take a professional city planner to realize that these types of increases are unsustainable. If city services such as police, fire and emergency medical are not increased, the entire area will be placed at risk. We feel the Edison plant development and other large projects like Washington Village must be required to participate in or fully fund the construction of the buildings and purchase of equipment for the services needed to adequately protect not only their own residents and businesses, but to ensure that the already stressed existing resources are not made worse by their project. The particular issue of law enforcement will require jurisdictional negotiations between City and State police agencies. Due to the size of this project site (15 plus acres), a determination of feasibility for the L street Station development to actually have their own first responder and police enforcement units similar to university police & fire units elsewhere in the city should be undertaken.

**(9)** **AFFORDABLE HOUSING:** It is fair to say that affordable family housing is a high priority to many community members. We re-enforce the voice of the community. The current proposed percentage level of affordable housing (13%) is inadequate. The majority of residents who attended the community meetings have stated that families are being forced out of the neighborhood primarily due to lack of "affordable housing for families". Many have requested the scoping document establish a target of 20% affordable units of the total number of units ultimately contained in the project. Many residents have requested the term "affordable" be clearly defined in the scoping document. Current agency definitions of affordable are quite simply too broad and confusing in these residents opinion. Stating that language like "Affordable is defined as a % of the median household income level when averaged with the area, and modified according to availability data ", is no longer applicable in the "Southie" of today. They are requesting that the term "affordable family housing" be clearly defined in the scoping document with language that is clear concise and understandable to the general public. Suggestions on the lines of: *Affordable Family Housing: Housing units that are no smaller than 1,900 sq/ft containing two or more bedrooms, whose initial purchase price shall not exceed $375,000.oo for two bedrooms and shall increase no more than $20,000 per additional bedroom. (Note: dollar amounts included here are*

*inserted as examples not actual dollars)* It should be noted that several residents expressed to IAG members that the area residents may agree to a higher number of total units if a greater percentage of those units are truly "affordable family units". The development team should look at recently approved projects for Washington Village and the Beverly on how to maximize affordable housing.

**(10)** **UTILITY / INFRASTRUCTURE:** This issue was raised as it relates particularly to sewage. There is a concern that this project's estimated outflow of nearly 300,000 g/pd coupled with the extensive growth in the Seaport district could result in the Deer Island Treatment Plant (DITP) reaching its capacity for treatment. It is understood that the DITP daily capacity of 6.5 mil g/pd is being approached more rapidly than anticipated. The plant was designed with the ability to expand beyond that capacity. We are requesting data from the developer and MWRA via BWS of projected plant limits, and when the capacity is projected to be reached. The area residents are concerned that South Boston sewer rates will increase by more than those across greater Boston and the MWRA districts simply because they are located within the area experiencing the largest amount of development. Additionally residents would like to understand the timeline for the inevitable expansion of the DITP, as that expansion cost will affect not only their own billing rates but all 76 cities and towns whose waste is treated there. The DITP is the reason Boston Harbor is as clean as it is now and one of the reasons this property is worthy of development at all. We request similar data from the other utilities like water supply, Gas, electricity and data.

**(11)** **CONLEY TERMINAL:** The Conley terminals current expansion plan onto the former coastal oil site is an important part of the local economy. We require the terminals particular traffic, air quality and noise levels be carefully studied. As stated earlier the recent success of the Terminal is due in no small part to the ability to get trucks in and out in a rapid period of time. Particular attention must be paid to the intersection of terminal operation and the general roadway traffic. Both the terminal and residents have worked hard to reach amicable solutions that each can live with. Those hard fought agreements are in jeopardy of being rendered mute and ineffective if this project's traffic and noise creation are not addressed in an aggressive manner. The bottom line to this complicated component was summarized by one resident, " we aren't going backwards on traffic or air quality gains we have made, not now, aint gonna happen". It was also noted that current truck numbers will increase when the terminal begins to serve "Post Panamax" vessels. This projected increase must be a component of any traffic, air quality, noise, and light studies.

**(12)** **BUILDING HEIGHT.** The height of two buildings in the current proposal is too high … we have heard this over and over. There is no consensus on a height that would be acceptable. This brings up the issue of "what zoning will apply to this site"? If the result of the Coastal Zoning Commission's boundary review is that this property can be removed from the Designated Port Area (DPA). Then what zoning will be inserted. If the base zoning surrounding this property is utilized, the limit is 40'. Residents identified shadows from the buildings as an impact. Additionally an impact of this project setting a precedent in the zoning district was cited. HRL and BPDA should delineate precisely what zoning will apply to the project that is ultimately approved by all the agencies having jurisdiction on this site.

**(13)** **PUBLIC ACCESS:** At many of the meetings the community has stated that the plan as presented does not go far enough on an inclusionary level. The impact cited is that they do not want to feel that they are not allowed in the development. So more attention must be paid to the linkage locations to the existing neighborhood. These linkages must be seamless. Resident also want to be sure that there clear unfettered access to the water and channel from the neighborhood. This unfettered

access is also a detriment in some community member's minds. Saying "If this place ends up being so cool and great it will attract more people from all over".

**(14)** **PRESSURE ON THE EXISTING RECREATIONAL FACILITIES:** This issue was raised by several people, There is becoming an issue at ballfields etc as of late: Due to the addition of so many housing units and their occupancy primarily by under 35 yrs people who use outdoor venues often. The resident children's little league, Pop Warner and other youth based programs have been faced with occupied fields when they arrive for scheduled games. Resulting in disagreements with groups who did not schedule through proper channels. The residents are of the opinion that the addition of 1,500 more households will make this situation worse. Also the residents were requesting that with such a large site the zoning ultimately employed should have a recreational component so the existing facilities are not impacted negatively from overuse.

Thank you for your attention to these important concerns. We look forward to seeing the responses from Redgate/Hilco and their responses to each.

Jim Coveno…. Resident and IAG Member

David Biele…..Resident and IAG Member

Jerry Tracy, Resident and IAG Member

Tim Czerwienski <tim.czerwienski@boston.gov>

# SOUTH BOSTON ARTS AND CULTURE

Stephen Allen [redacted] Wed, Aug 2, 2017 at 9:04 PM
To: tim.czerwienski@boston.gov

DEAR TIM

I'M THE PUBLISHER OF NEIGHBORHOOD PHOTO NEWS

I LOVE PHOTOGRAPHY AND THE ARTS

BUT SOUTH BOSTON NEEDS A SPACE TO SHOW OFF IT'S ART AND CULTURE

PLEASE ADD SPACE FOR THEM IN THE NEW EDISON PLANS FOR DEVELOPMENT

KIDS NEED MORE SUPPORT FOR THE ARTS.

THERE NEEDS TO BE MORE ART FOR KIDS LOCALLY.

THANK YOU

STEVE ALLEN JR.
[redacted]

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison plant development

Kelly Allison [redacted] Thu, Aug 3, 2017 at 12:51 PM
To: Tim.czerwienski@boston.gov
Cc [redacted]

Dear Tim,

I am a concerned Longshoreman of local 800 and former resident of South Boston. I strongly oppose the Edison Plant development. The proposed density and scale of the project will only serve to further increase the traffic and congestion that the overdevelopment of South Boston and the waterfront has already caused. I believe this operation will adversely affect the operations of the port of Boston and ultimately the Massachusetts economy. The traffic that would generate from this would limit our abilities to accomplish what we do at Conley terminal at a productive rate, and could ultimately put our operations to a halt. With that being said I hope you can understand our concerns and re-evaluate your plan for the Edison Plant. I thank you in advance for any time spent reviewing our concerns.

Thank you,
Kelly Allison

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison Project

Phyllis Allison [redacted] Thu, Aug 3, 2017 at 1:20 PM
To: "tim.czerwienski@boston.gov" <tim.czerwienski@boston.gov>

My comment on the Redgate Edison Project is NO. Way too big--it will add density and congestion to our already crowded existence.

Back to the drawing board, please.

Thank you,
Phyllis Allison
Old Harbor Street
South Boston

Tim Czerwienski <tim.czerwienski@boston.gov>

# Fwd: 776 Summer Street (Edison Plant) IAG Meeting

**Judith Anne** [redacted]
To: Tim.Czerwienski@boston.gov

Fri, Aug 4, 2017 at 11:23 PM

**Subject: Re: 776 Summer Street (Edison Plant) IAG Meeting**

Upper most in people's minds overwhelmingly is vehicular concerns. This broad-based term is segmented out into several different categoriesdelineated below in the first **(5)** five impacts and discussed individually in the following paragraphs, and a listing of other impacts cited by our neighbors. **(1)**Traffic management, **(2)** Air quality, **(3)** Parking, **(4)** Noise,**(5)** Public transportation, **(6)** density **(7)** Preservation of more of the historic structure(s), **(8)** First Responders **(9)** Affordable Housing. **(10)**Utility and infrastructure impacts, **(11)** Continued successful operation of the Conley Terminal, **(12)** Height of structures in the current plan **(13)**community access **(14).** Pressure on existing recreational facilities

---------- Forwarded message ----------
From: **Development Review at the BPDA** <Tim.Czerwienski@boston.gov>
Date: Tue, Jul 25, 2017 at 10:01 AM
Subject: 776 Summer Street (Edison Plant) IAG Meeting
To:

Public meeting hosted by the BPDA View this email in your browser



boston planning & development agency

Tim Czerwienski <tim.czerwienski@boston.gov>

# Proposed 775 Summer St. project, South Boston

Brian Anton [redacted] Fri, Aug 4, 2017 at 7:43 AM
To: "tim.czerwienski@boston.gov" <tim.czerwienski@boston.gov>

Dear Tim,

I am a South Boston resident and wanted to give my input on this project during the comment period. While it sounds great in theory, I must oppose the project in its current form.

I am not against additional housing, but it cannot be done without FIRST addressing the infrastructure needs of the neighborhood. I have lived here for close to 20 years and have seen the quality of life deteriorate as more and more housing has been built, but without enough parking, traffic engineering, or public transportation improvements made to support the increased density.

In the time I've been here, finding street parking for residents has gone from easy to difficult to impossible. There is simply not enough to go around, even with some parking included in certain developments. For those of us in housing that predates the building of included parking spaces, we are forced to find street parking, and the city is providing no other options with all of the development it has approved.

The Edison project proposes 1500 units of housing with something like 800 parking spaces, so hundreds of new cars will be looking for spots even if not everyone in the new development owns a car. To be honest, conversion of the entire Edison property to a parking deck to be used, rented, or purchased by South Boston residents would be a much better idea, and would be a welcome reimbursement for all of the overdevelopment that has already occurred in recent years.

As for traffic, access to the neighborhood is through a small number of pinch points, and they cannot accommodate the amount of traffic even currently flowing through them, let alone with the addition of the enormous project being proposed here. I see very little being done to address this. You cannot possibly consider approving a project of this scale without prior, or at least simultaneous, major improvements to the neighborhood street layout.

Finally, with the MBTA being perpetually cash-strapped, I can't see that there could be enough expansion of public transit to accommodate the additional load required of this development any time soon. I agree the Edison site is in need of development somehow, but please find another solution. Many thanks,

Brian Anton

366 West Broadway

South Boston, MA

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison Plant Project

Amy Auth [redacted] Tue, Jul 25, 2017 at 8:02 PM
To: "tim.czerwienski@boston.gov" <tim.czerwienski@boston.gov>

Tim,

I live in South Boston, at 743 East Fourth Street #106. I write to express my concerns about the Edison Plant Project. While I would like to see something productive done with the property, I am concerned about a huge influx of additional units of housing without a solid plan for dealing with the extra cars and extra pressure on the transportation systems in the neighborhood. I have lived in South Boston for over 13 years, and in the last few years the transportation system has been so overwhelmed by the population increase in South Boston it is almost useless. The number of new units should be restricted, and the property developed for more open and commercial space.

Best,

Amy Auth

[redacted]

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison Plant

Richard Bagge [redacted] Thu, Aug 3, 2017 at 9:50 AM
To: tim.czerwienski@boston.gov

Hi Tim - I am writing today to support the South Boston Arts Association and want to see art and culture as part of the new plans for the Edison Plant.

As a resident of South Boston, I believe this is important and believe the So Boston Arts Association is the right group.

thanks
Richard Bagge
557 East 4th St

Tim Czerwienski <tim.czerwienski@boston.gov>

# Against the Edison plant development

Chris Barese [redacted] Thu, Aug 3, 2017 at 7:26 AM
To: tim.czerwienski@boston.gov

Hi my names chris O'Neill . I'm a southie resident who has lived here my whole life. I am against
This development for many reasons. These include traffic congestion, decrease in parking on top of the few spots we have , and a congestion of people. If this gets built it will destroy a town I love and grew up in and still live in today. Instead of helping make this town better it will hurt it.

Thank you for your time

Thank you for your time.
Sent from my iPhone

Tim Czerwienski <tim.czerwienski@boston.gov>

# 776 Summer ST .

Louise Baxter [redacted] Sat, Jul 29, 2017 at 1:35 AM
To: tim.czerwienski@boston.gov

I support the call for more affordable housing and agree with those having concerns whether our infrastructure could handle a too big project

[redacted]
Louise Baxter
[redacted]

Tim Czerwienski <tim.czerwienski@boston.gov>

# 776 Summer Street

Krista Beem [redacted] Mon, Jul 31, 2017 at 12:27 PM
To: tim.czerwienski@boston.gov

I will only support this project if the Red Line is extended to City Point; the 1.15 acre plaza along the Reserve Channel is included; a grocery store is included; and the planned 5-acre park is included.

Sincerely,
Krista Beem
398 W. 1st Street
South Boston, MA 02127

August 4, 2017
J.F. Bennett
South Boston, Mass.

I am opposed to the present plans for development of the former Edison Power Station on Summer St. As presented the plan will radically alter the fabric and character of City Point. City Point for the past century or more has been primarily a residential neighborhood composed of mostly two and three story multi and single-family buildings with only a few small retail establishments. It's population until recently was composed of multigenerational family groups with a mix of seniors and singles in small apartments and rooming houses. Over the past two decades, condo conversion has changed the character of the community adding many more one and two bedroom units occupied mostly by young single transient professionals, people following jobs with little interest in creating a community connection with people not in the same socio-economic group.

This development is, in essence, a gated community without a gate. A large plot of private property which in its current layout discourages through traffic and lacks a real connection with the greater community due to this limited street connection and the scale (and potential style) of its architecture. The site needs more streets and more connections to the outside neighborhood. A second street connecting with 1st St. on the east side of the site and a street across the north side of the building line before the waterfront space. The street would also more clearly indicate that that space is not just the front yard of the commercial endeavors along that side of the development. A lively, safe, public street life cannot be created or maintained artificially. It must flow naturally from an established rooted population invested in their community. Private security cannot take the place of a vibrant public sphere composed of an engaged, invested group on neighbors out on the sidewalks. The claims of a desire for small locally geared businesses in the development strike me as unrealistic. I believe new construction typically needs high volume businesses in order to pay the higher rents needed to defray the costs of construction. I also feel those business will be handicapped by the lack of through traffic. How will this development impact the existing commercial zones on East and West Broadway?

While I understand the theory behind limiting parking in order to "discourage" driving, In the real world it impacts those with the least driving flexibility; poorer people with fewer employment choices. With fewer parking spaces than residential units on site where will people patronizing the businesses or the open space park? While I understand much of the parking on site will be used by different people at different times of the day, there seems to me a strong likelihood that there will be times there with be a dearth of space for the number of automobiles on site. More parking is needed—a surplus able to accommodate neighborhood over is needed.

The streets and the open space really NEED to be true publicly owned land. I have serious reservations about privately owned public space at the present time. I see many issues daily along the South Boston Waterfront particularly in the Fan Pier area. The city doesn't have a mechanism in place at present to oversee and regulate these spaces and agreements as was demonstrated recently by the issues with Intercontinental Hotel and the New Boston Garden. I don't feel comfortable handing myself and others over to private security who lack the training and accountability of our police. There is the question of parking meters and parking fees as well, how will that be regulated? Who will collect those fees from parking tickets, if any? New

York City recently catalogued their “POPS” and found numerous violations of these agreements made by private entities. I feel these sorts of deals are an abrogation by municipal government of its raison d'être. I have no faith in corporate self-policing. These private streets will be a free-for-all like the private ways of the Fan Pier. There is no really no accountability down there. I don’t expect this or any other development to be any different unless the city takes a greater interest in governing these areas. The city and state need to clearly define and legislate who has authority and over what.; is an entity like Redgate/Hilco acting as a state agent when creating and maintain “public spaces” and what rights do we have while traversing such spaces? I also feel we need a separate discussion regarding open space in South Boston, What kind do we want, what do we want it to do and is all open space necessarily good open space? What makes successful open space?

Public transit is beyond capacity in South Boston at present, this development with put a tremendous strain on this already overburdened system. Serious upgrades need to be in place before any major development takes place. We need something quite radical, something much more than a few more buses or relying on ride sharing or private shuttle buses. Silver Line service is not the answer, since it is BRT only in name. Ride sharing and private shuttles are a return to the 19th century—with cell phone “apps” added, just like private ways & security they are lacking in accountability and supervision. It is time we considered a return of rail service to City Point. Any service improvements must benefit all City Point and greater South Boston, not just the Edison development. Service routed down 1st. St. to Summer St. Leaves the rest of the community out of the loop. As it is we have seen a diminution of service euphemistically called a service improvement in the routing of buses onto 1st St. along an abbreviated route.

Redgate/Hilco “sold” themselves to the community as a firm with a history in preserving and repurposing former industrial sites, however the plans they have presented preserve very little of this historic site; leaving a partial structure standing without any context to its part of the whole. This is the only major piece of City Point’s industrial past remaining. It is an important site in the annals of engineering & electric power generation and as such is worthy of more serious preservation. Also preserving and repurposing more of the structures will help to knit this development with the rest of the neighborhood, if only by dint of its long existence as part of the community. It has a comforting familiarity for many residents. More than just the turbine rooms are historically and architecturally valuable. The BELCo plant is one of the earliest large scale A.C. power stations and the remaining sections of EEICo boiler rooms are architecturally unique as far as I’ve been able to determine; there are no other power stations with segmental arch windows topped with lunettes which I have been able to identify. With a little bit of imagination I feel much more of the structures could be saved and repurposed, find new uses while retaining character and context. The more of the old buildings are razed the more the area will become a artificial neighborhood in and of itself with little in common with the surround neighborhood since no new construction there will mimic the pre-existing neighborhood. Preservation of a higher, maximum amount of the old power station is needed to maintain a feeling of continuity and connection with the rest of City Point.

Who is going to pay for all the “Art & Industry” and the myriad waterfront activates proposed? Is some going to profit financially from these things? Are they just a carrot dangled before our eyes or is this another “Lawn on D”?

What guarantees do we have for any of these promises? I believe if this development goes forward the city should require Redgate/Hilco post a performance bond to guarantee financing of any public accommodations in the event of their withdrawal of financial support.

I would like to see the creation of an arts and industry school, maybe in the BELCo building; something, which could offer training in the trades to local teens and the unemployed. Possible trade with niche markets in keeping with the site's history. Something along the lines of a machine shop, smithy, or wheelwright, cabinetmaking; industries that are alive, but having a hard time attracting young people. It could be a school, a museum and a profit making business.

A community composed primarily of mostly single, transient,—no matter how well off—millennials cannot thrive and mature. It cannot spawn those natural social connections, which grow organically from a long-term multi-generational, diverse community like South Boston. It can only lead to a static, stunted shadow of a real neighborhood; one in which social conventions and groupings can never truly develop and thrive. There will be faddish groupings following the latest trends and fashions, but these never last and enough of these people won't be around long enough to reconnect from fad to fad creating a lasting, living neighborhood. The architecture must connect with the greater neighborhood and be attractive and affordable to a diverse population.

The city cannot continue to allow heavy development along the L & Summer Sts. corridor while depending on it as a primary route for traffic from the South Shore. The street cannot do double duty bearing an ever-increasing traffic load indefinitely. We can't keep putting this off for future generations to deal with. This development will only exacerbate the problem.

There are many other issues, some of which I'm sure my fellow resident have touched upon and I'm sure will be discussed in future meetings. I personally would be happy to see the site remain as it is indefinitely, but knowing that's unlikely I'm interested in finding a plan that best compliments and enhances the City Point neighborhood. At this point in time I feel we are beyond "taking a hit" and accepting linkage gifts; this time around our wellbeing needs to come before the purses of the speculators. (to put it bluntly)

In closing I'd like to offer a quote from Jane Jacobs'; *The Death and Life of Great American Cities*: "The solution to [Boston's housing problem] cannot lie in vain attempts to plan new self-sufficient towns or little cities throughout [the] metropolitan region.... We cannot have it both way: our twentieth century metropolitan economy combine with nineteenth century isolated town or little city life."

Regards,

J.F. Bennett

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison Plant

Pauline Benvissuto [redacted] Thu, Aug 3, 2017 at 8:53 PM
To: tim.czerwienski@boston.gov

I strongly appose any construction to the existing Edison Plant and the surrounding area. This site is and always will be a very toxic site. Disrupting the plant and the grounds on this site will reeke havoc and sickness on the people living in South Boston.

I have lived in South Boston all my life at more than a mile away from the Edison Plant, when as a child I remember every Sunday evening around 8:30 - 9 p.m. the swoosh and huge booms from the smoke stacks went off to clean out and release the toxins into the air. Every Monday morning all the window sills in the house was full of black soot and grim.

Living in this contaminated community caused me to get Lupus at the age of 35. In 2002 the Commonwealth of Mass. Exec. Office of Health and Human Services Dept. of Public Health conducted a South Boston Scleroderma and Lupus Health Study. This study was prompted to investigate concerns regarding an alarming elevated rate of scleroderma and lupus among current and former South Boston residents. At that time there was a push to keep this study secret so as not to bring negative attention to this area because developers were trying to build up this community.

I was part of that study. This terrible disease has stolen many years of my life. The Edison Plant has always been a toxic environment. Please do not unleash this health hazard to our community once again.

Sincerely,
Pauline Benvissuto

Tim Czerwienski <tim.czerwienski@boston.gov>

# So. Boston Arts Association - Please help!

Ginny Bergin [redacted] Wed, Aug 2, 2017 at 5:10 PM
To: tim.czerwienski@boston.gov

Dear Mr. Czerwienski:

Please continue to support the Redgate/Hilco proposal to include space for the Arts & Cultural Community Center in the former Edison power plant property.

This center will bring great benefits not only to the South Boston community but to surrounding towns as well, as the Association showcases many different artists & cultural events.

Thank you.

J & G Bergin

Tim Czerwienski <tim.czerwienski@boston.gov>

# 776 Summer Street

David Biele [redacted] Fri, Aug 4, 2017 at 4:22 PM
To: Tim Czerwienski <tim.czerwienski@boston.gov>
Cc: slynch <stephen.lynch@mail.house.gov>, linda.dorcenaforry@masenate.gov, "Collins, Nick - Rep (HOU)" <Nick.Collins@mahouse.gov>, bill.linehan@boston.gov, michael.f.flaherty@boston.gov, michelle.wu@boston.gov, john.allison@boston.gov

Tim:

I wanted to submit my personal comments regarding 776 Summer Street, outside of the IAG comments. At the outset, I would like to state that its my personal opinion that having the development team address impacts is premature. This project must pass several levels of state review before the IAG and the BPDA process can play out in shaping the development. I believe that the BPDA should require the project team to obtain these approvals before these conversations continue. If state approvals are not obtained, the preferred option for development, which has been the sole topic of these public meetings, will change and these conversations will be moot. Therefore, I believe that it is in the best interests of the development team, the city planners and the neighborhood to wait until the state processes play out, instead of getting bogged down in the nuances of a project that may never come to fruition. That being said, I would like to submit my personal comments.

I believe that the preferred proposal being pushed by the development team is out of scale for the traditional South Boston neighborhood. Building with heights of 200 feet are not something that fits in along City Point and it is not the size that was in mind during the Article 68 planning process. The density being proposed by the development team is more appropriate along the Waterfront, or the Dorchester Avenue Corridor. The proposal would also be out of place along Broadway, which historically has absorbed higher heights and density. I am worried what type of precedent would be set if development of this scale is allowed to move forward.

I am also deeply concerned with the impacts of this project on our public transportation infrastructure. It is well documented that our public transportation system has not been able to keep up with the population growth and pace of development in the City of Boston. This development, situated at the start of bus service for the entire South Boston neighborhood, would cripple public transit options for the rest of the neighborhood. The BPDA should direct the development team to further study this area, as it will have impacts beyond the surrounding City Point neighborhood.

Additionally, the development team should maximize the opportunity for affordable housing. Washington Village and The Beverly were able to do so, and there is no reason why the South Boston neighborhood should settle for the minimum 13% if this project moves forward. The City of Boston is rapidly becoming a city of haves and have-nots, as we have one of the highest rates of income inequality in the country, and it is the responsibility of the City to address this problem. A development of this magnitude needs to do more than the bare minimum to meet the Inclusionary Development Policy, and the City needs to make this development team do more.

Similarly, more needs to be done on parking. The proposal's parking requirements are grossly inadequate for a 15-acre development, especially when Alternative B calls for significantly more parking.

Lastly, the development team has been pushing its "preferred" development proposal. However, they provided three alternatives for the project in their PNF. The community deserves to know ALL the options that are on the table. The development team should not be allowed to lead the conversation away from feasible projects for the site which the development team as proposed in writing. As the proponent, they have an incentive to shift the conversation away from less lucrative proposals, and I hope the BPDA will hold their feet to the fire on their misleading presentations. At the public meetings, there has been a clear demand for parking--Redgate and Hilco's "Alternative B" calls for office space with approximately 1000 parking spaces. However these details have been buried in the filings and not presented in-depth publicly. I hope the BPDA would require Redgate and Hilco to address Alternative B in the upcoming scoping session to ensure that all options are on the table for discussion.

Thank you for your time and attention,
-David Biele

Tim Czerwienski <tim.czerwienski@boston.gov>

# 776 Summer Street - Former Edison Plant

Binkoski, Brendan [redacted] Thu, Aug 3, 2017 at 4:09 PM
To: "tim.czerwienski@boston.gov" <tim.czerwienski@boston.gov>
Cc: "Mark.McGonagle@Boston.gov" <Mark.McGonagle@boston.gov>

Mr. Czerwienski / to whom it may concern,

I live a block from the Edison building. I agree the site should be cleaned up, and used, but not in this way.

First, does Mark McGonagle, a BPDA liaison, also work for the assessing department? Why is he commenting on city property tax increases? Residential and commercial tax rates are set annually and on a city-wide basis, not by each neighborhood. If anything, the proposed 1,500+ residential units and a hotel should raise 10s of millions of dollars in property tax revenue annually for the city - driving residential taxes down - despite offsets from city resources being allocated to the site. He should focus on his realm of expertise. Also, his language is clearly paving the way for the maritime /industrial zoning to be lifted and this land to be given variances and not bound to any zoning article immediately. The zoning lift appears to have been already decided behind closed doors.

Second, the BPDA should take the word "planning" more seriously and not cave to developer demands. The South Boston Waterfront is already a part failure due to a "build now, plan later" attitude. The public transit is an embarrassment given the amount of growth in the last 5 years. This is a State issue as well, but it is also a planning failure. Do you really think a few extra buses or a study on something which will not happen such as red line expansion, is a solution for a massive influx of people and cars? Additionally, why include the 1,000 parking spots? Minimal parking for the hotel should only be allowed. More parking leads to more congestion. This project has a target date of 2027, when the car-sharing / autonomous vehicle industry will be dramatically different and advanced. Most urbanites will not need a vehicle. Please read the recent Penn Wharton School study on this ' "Tomorrow's Transportation Ecosystem: From Autonomous Vehicles to Public Transportation". Housing units should receive zero parking. If you are planning to give carte blanche variances for other means, give a zero parking variance as well. Think forward.

Lastly, which is a stretch because the BPDA typically sides with developers over the neighborhood voice - let the land remain as maritime/industrial zoning use only. The developer cleaning up the land is not enough leverage to give away this important parcel. Boston and Massachusetts should continue to focus on the dredging of the Reserve Channel to allow larger container ships to port, and the entire New England economy will benefit greatly. The Reserve Channel's strategic location to Boston should not be overlooked and partly given away for developer profits on luxurious condos and hotels. This city has already lost so much waterfront space to this cause.

Brendan Binkoski

3 Bay State Place

South Boston

Tim Czerwienski <tim.czerwienski@boston.gov>

# Comment on 776 Summer Street Development

Sameer Bhoite [redacted] Tue, Jul 25, 2017 at 2:06 PM
To: "tim.czerwienski@boston.gov" <tim.czerwienski@boston.gov>

Tim

I support the mixed use for this development project only if the City funds a study of brining Red Line to the City Point area. As a resident of South Boston on K street, the bus does not work well for the commuters on the east side of South Boston and with influx of new development along this side, a metro connection is highly needed

Thank you

Sameer Bhoite

Creative Director

WARNER LARSON, INC.

LANDSCAPE ARCHITECTS

130 West Broadway

Boston, MA 02127

[redacted] phone

[redacted] mobile

www.warnerlarson.com

Tim Czerwienski <tim.czerwienski@boston.gov>

# support

Tim Czerwienski <tim.czerwienski@boston.gov> Wed, Aug 2, 2017 at 3:49 PM
To: Harry Brett [redacted]

Mr. Brett,

Thank you for your message. I'll add it to the file of public comments on this project.

On Wed, Aug 2, 2017 at 3:38 PM, Harry Brett [redacted] wrote:

> Dear Tim. I am a member of the South Boston Arts Association and would like to see a permanent home for the Association in the old Edison building. I , and my family are long time residents of Braintree where we have a fairly new art center that offers all sorts of artistic interests for young and old. I enjoy the comradarie and encourgement that I get in South Boston. Please consider on our behalf. Thank you. Harry Brett

--

boston planning & development agency

Tim Czerwienski
Project Manager
617.918.5303

Boston Planning & Development Agency (BPDA)
One City Hall Square | Boston, MA 02201
bostonplans.org

Tim Czerwienski <tim.czerwienski@boston.gov>

# South Boston Edison Power Plant Development

Nicholas P . Brown [redacted] Thu, Jul 27, 2017 at 10:31 AM
To: "tim.czerwienski@boston.gov" <tim.czerwienski@boston.gov>

Tim,

I am writing to comment on the proposed redevelopment of the South Boston power plant. I am the owner of 158 M Street and live there with my wife, son, and soon-to-be daughter.

My wife and I are not opposed to the re-development, but we are concerned that the amount of housing proposed will negatively impact the neighborhood if ongoing transportation and parking problems are not first addressed.

At present, City Point does not have sufficient public transportation. Without more and better transportation, the parking shortage throughout the neighborhood will not improve.

The proposed development of the power plant will significantly increase the number of daily car trips (more than 10,000 trips per day) and the number of public transit users (5,000 per day).

The project, however, only includes 987 parking spaces and provides no concrete solution for the 5,000 additional public transit riders to be added to the already over-burdened and inadequate bus service. These issues must be fully and adequately addressed before this project proceeds.

I suggest the following:

- More parking must be included in the project, including the addition of a public parking garage available for use by the entire neighborhood. A public garage will likely go a long way toward winning-over City Point residents. Such a garage is badly needed and this site may be the only chance to build one. The City should press the developers on this issue.

- More public transportation must be funded before this project proceeds. It's not enough to simply talk about new public transportation. It must be planned and funded before the project proceeds.

- The project must include affordable housing.

This redevelopment is a once in a generation opportunity to clean-up a contaminated site, bring much-needed housing to the area, and to otherwise improve the City Point neighborhood. It would be a shame if the City failed to secure badly needed benefits for existing residents.

Thank you.

**Nicholas P. Brown**
PIERCE ATWOOD LLP

100 Summer Street
22nd Floor
Boston, MA 02110

**PH** [redacted]
**FAX** [redacted]

[redacted]

BIO ▸ Admitted in RI, MA, NY

This e-mail was sent from Pierce Atwood. It may contain information that is privileged and confidential. If you suspect that you were not intended to receive it please delete it and notify us as soon as poss ble.

Tim Czerwienski <tim.czerwienski@boston.gov>

# Comments Re: Boston Edison Power Plant

Michelle Burnett [redacted] Tue, Aug 1, 2017 at 11:39 AM
To: tim.czerwienski@boston.gov

Hi Tim,
As a new a home owner on 621 East First Street, the following are a few comments to consider:
- Ensure a healthy and safe environment during construction for home owners near the project
-Complete construction M-F and during reasonable working hours
- As the community has mentioned, please no buildings over 4 stories.
-During the development process please consider adding the following to the plans: grocery store (maybe a Wegman's), movie theater, park with water access, high end restaurants and shops, (please no McDonalds), Open air market similar to SOWA and a Boutique hotel
- Please add trees and greenery to prevent the area from looking like a concrete jungle.
- Build out roads to lessen traffic congestion
Thanks for collecting feedback and good luck with the planning!
Southie Resident

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison project

EJ Burns [redacted] Thu, Aug 3, 2017 at 3:43 PM
To: tim.czerwienski@boston.gov

Hello Mr. Czerwienski.
My name is Edward Burns and I am a lifelong South Boston resident. As you may or may not know out neighborhoods traditions and culture means more than anything to us. We all used to be a right not community that helped and always look after each other. The reason i use the term "used to be" is because of the BPDA and many other groups that are using our land like a goldmine, except with a community already on top of the gold mine. Sure you can legally build and develops anything you want in as long as it's in the legal standards but you should really consider our side too, which I don't believe you guys really have the past ten years and probably won't now. Not only will a huge multiple block long development hurt the original residents and frustrate is even more, allot of men and women work along Conley port. The longahoreman and women have that part as a huge part of their living. This will seriously hinder their way of making an HONESTY living, which allot of the newcomers know nothing about. If you would, it would be greatly appreciate if you would at least reason with the majority of the community that has the least of the say. It amazes me how 90% of our neighborhood will want something but our vote counts for about 10%. Please think how that development will really impact our community.
Sincerely Edward Burns.
Life long South Boston resident.

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison project

Robert Byrne [redacted] Thu, Aug 3, 2017 at 7:31 AM
To: tim.czerwienski@boston.gov

Dear Tim,

As a concerned longshoreman, I am writing you in opposition to the proposed development of the current Edison plant. I believe it will adversely affect the operations in the port of Boston which is vital to the Massachusetts economy. As it is now, we are developing and expanding the port with considerations for existing residents on east first street by building the new haul road; effectively removing tractor trailer traffic off of E. First St. Once there are upwards of 1500 new families in such a congested area there will be lots of pressure put upon the port. We operate a lot of times day and night. This would affect people living in that area and would hamper our ability (if opposed) to service shipping companies in the fast efficient manner that has been achieved throughout the past 20 years. We are now one of the most efficient and productive ports in the country considering our size and are now expanding to accommodate future commerce. There are already many many obstacles we face on a daily basis just to accomplish what we do everyday. This situation could bring things to a halt and have a huge affect on the billions of dollars generated in local economic activity currently being produced out of the work we do at Conley Terminal.

I thank you in advance for your attention to this email.

Sincerely,
Robert Byrne
Financial Secretary
ILA Local 799

Sent from my iPhone

Tim Czerwienski <tim.czerwienski@boston.gov>

# South Boston haul road

[redacted] Thu, Aug 3, 2017 at 9:17 AM
To: tim.czerwienski@boston.gov

Dear Mr. Czerwienski

My name is Brian Callahan, i am 27 years old and was born in raised in Boston my whole life (as was the past 3 generations of my family!) But now live in South Boston. I am currently a 3rd generation union Longshoreman going into my 9th year of seniority at the Port of Boston for the I.L.A local 799. I am writing in opposition of your proposed plan at the Edison Plant. It is TOO BIG OF A PROJECT for the neighborhood! And also will disrupt Conley terminal which is VITAL to Massachusetts' economy! Please, Please, Please reconsider this plan as it would be so hurtful to the neighborhood of South Boston and the State of Massachusetts and my job which I love and have dedicated my life to!

Thank You Sincerely,
Brian Callahan
(Longshoreman & Boston resident)

Sent from my iPhone

Sent from my iPhone

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison Development

Megan Kaplan [redacted] Wed, Jul 26, 2017 at 7:08 PM
To: tim.czerwienski@boston.gov

Mr. Czerwienski,

As a resident and property owner of/in South Boston, it is my responsibility to present concerns and submit input regarding the upcoming Edison Plant Development. In an effort to be concise, here are my thoughts:

• South Boston is currently experiencing an extreme parking AND public transportation crisis. I believe we should limit the number of condos and housing built in the development in order to prevent the crisis from worsening. This area simply does not have the infrastructure to support this amount of growth.

• An red line extension to the City Point area will be extremely beneficial not only to alleviate traffic at the development but also to bring patrons to the development. Also, an increase in the number of buses in the area would be helpful.

• A grocery store would be extremely beneficial to this area seeing that the Seaport, Fort Point, and South Boston are lacking in grocery options. The Stop and Shop on Broadway is notoriously lacking in quality and healthy options that appeal to the newer demographic in the area. Many residents leave the area for their grocery shopping to go to places like Whole Foods, Trader Joe's, Roche Brothers or Market Basket. The smaller, family-owned options are great but expensive and don't offer everyday grocery options. A quality grocery option would absolutely thrive in the new development.

Thank you for your time.

V/R,
Megan Kaplan
[redacted]

Sent from my iPhone

Tim Czerwienski <tim.czerwienski@boston.gov>

# HRP 776, Edison Plant

Joseph Cappuccio [redacted] Mon, Jul 31, 2017 at 12:54 PM
To: Tim.Czerwienski@boston.gov

Hello Tim,
I would like to comment on the proposed Edison development with the focus on the need for housing for the working poor.
May I suggest that a apartment building be built on the property that will house the working poor of the community; folks that clean buildings, wash floors, empty the trash.
I would like a response to this suggestion if at all possible.
Sincerely,
Joe Cappuccio
746 East Fourth Street
South Boston, MA 02127

Tim Czerwienski <tim.czerwienski@boston.gov>

# 776 Summer Street

Joseph Cappucccio [redacted] Fri, Aug 4, 2017 at 2:41 PM
To: tim.czerwienski@boston.gov

To Whom It May Concern,

We wish to express our concerns about the development at 776 Summer Street in South Boston. We are very concerned about the environmental impact to our, parks, open spaces and green spaces. The committee has been working with our elected officials to ensure that we keep our green/open spaces for future generations and for the good of the visitors to the South Boston area. It is incumbent upon on all of us to decrease our carbon footprint,and help to reverse climate change. May we suggest the planting of trees, shrubs, planters, helping with gardens and open space would certainly have a positive effect on our environment.

Having stated our reservations we have a suggestion. We would like to work with your development company to ensure that the all the environmental concerns that we have are addressed.

Furthermore, we would like to build a partnership with your company now and in the future, your commitment to this endeavor will show the community that you are not just about development but for the health and welfare of impacted community and beyond.

Sincerely,
Joseph Cappuccio
Chair

Tim Czerwienski <tim.czerwienski@boston.gov>

# EDISON PLANT/SOUTH BOSTON

karen carey [redacted] Fri, Aug 4, 2017 at 11:37 AM
To: "tim.czerwienski@boston.gov" <tim.czerwienski@boston.gov>

Dear Mr. Czerwienski,

I am South Boston born, raised and still live here. I am a homeowner and have raised my children here. They have also remained in their neighborhood.

My family and I are in strong OPPOSITION of the proposed Edison Plant development project.

This would be an environmental and health disaster.

South Boston already has higher than normal rates of cancer (especially rare forms), lupus, and scleroderma.

We all know the cause stems from Edison and oil tanks on First Street.

Commonwealth of Mass clearly stated this site should never, ever be disturbed or developed.

Please don't let the almighty dollar win.

We have been to enough hospitals and funerals because we unknowingly lived in a toxic environment.

I am counting on you to protect us. We are not in short supply of over development, please leave this site untouched. We have lost enough.

Thank you

Sincerely,

Karen Carey

7 Pacific Street

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison Development

Elizabeth Carr [redacted] Thu, Jul 27, 2017 at 2:22 PM
To: tim.czerwienski@boston.gov

Hi Tim,

My name is Liz and I live in a small condo in city point on East 6th st. It's such a wonderful neighborhood and I can really see myself staying here a long time and raising a family here. We bought a run-down condo and rehabbed the inside last year, hopefully giving us the ability to live here as long as possible.

There is so much development going on in South Boston and it really does make me anxious about the place I've chosen to live. The Edison is a huge piece of land that is not currently used, so it makes sense to develop it into something that gets far more use. I read on the Caught in Southie blog that your team was soliciting community input, so here are a few of my thoughts. Thank you in advance for reading.

What I would love:
- For Redgate to use this as an opportunity to improve transit to the East side of South Boston instead of adding congestion, as well as servicing the new units and commercial space that will be built. Transit is already a huge problem without adding many new units of living space. The existing transit system can't handle the existing population, that needs to be addressed before any new housing is built. I can bet that a lot of the people moving into this area work in the downtown or financial districts and would be relying on the #7 bus route as it currently exists.

- For the plans to favor a pedestrian or biker rather than a car. A car culture runs contrary to building a strong community.

- For there to be true affordable and family housing included in the plans, and not just the bare minimum. I'd love to see a commitment to keeping residents able to live close to where they work, no matter their income level.

- A grocery store. Currently, all South Boston has is the Stop & Shop on the East side and the Foodies on the West side. Lines are very long and options aren't great. The Whole Foods in the South End isn't within walking distance and is overcrowded as well.

What I would hate:
- For the development to not blend into the existing neighborhood. The Edison buildings are already massive, but I'm worried about 200 foot tall towers creating an anti-neighborhood feel.

- For the development to only be appealing to a high-spending demographic for both shopping and living.

- For the development to have a significant negative impact on the community during construction. This is going to be a long project!

Thanks again for your consideration and for your work on this project.

Liz Carr

Tim Czerwienski <tim.czerwienski@boston.gov>

# Fwd:

Cathy [redacted] Tue, Jul 25, 2017 at 5:29 PM
To: tim.czerwienski@boston.gov

South Boston is over crowded as it is now. Let Mass Port take the property over and stop the over building now. There is no place to park as it is. Shame on the City of Boston for letting this happen. There are no families left because no one can afford to live here. So there are no schools left. There are only singles with room mates and 3 and 4 vehicles here now once they get married and start to have families they are not staying they will be out of here. This use to be a great place to live but now it seems we need more dog parks than playgrounds.

Sent from my iPad

Begin forwarded message:

From: SBCPNA [redacted]
Date: July 25, 2017 at 4:29:08 PM EDT
To: Paul Goulet [redacted]
Subject: Fwd:

PORT DESIGNATED AREA REVIEW MEETING TONIGHT

EDISON PROJECT

--

Chair

Tim Czerwienski <tim.czerwienski@boston.gov>

# 776 Summer Street Development

Alex Cattell/USA [redacted] Tue, Jul 25, 2017 at 3:11 PM
To: "tim.czerwienski@boston.gov" <tim.czerwienski@boston.gov>

Hi Tim,

As a real estate professional & a resident of South Boston (at one time 592 E. Third just a couple blocks from the site) I plead that at the very MINIMUM, 300 housing units (condo or rental) be built ASAP. The City of Boston & South Boston specifically are undergoing an unprecedented wave of demand that is making not just home ownership unattainable for younger, working class people, but also driving rents up to unhealthy levels. A ton is being done in the affordable housing realm, which I appreciate, but the hard working middle class people above the “affordable” threshold are quickly becoming the class with the toughest hill to climb. I fear that I won’t be able to start saving for my retirement nor for my children’s college education because of the current & future burden of housing.

Thank you for your time & consideration,

Alex Cattell

Financial Analyst

Tenant Advisory Group

Direct: [redacted]

Mobile: [redacted]

Fax: [redacted]

[redacted]

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Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison plant development

**Gloria** [redacted] Wed, Aug 2, 2017 at 12:26 PM
Reply-To: Gloria [redacted]
To: "tim.czerwienski@boston.gov" <tim.czerwienski@boston.gov>

Tim,
I support seeing arts and culture included in the Edison Plant (L Street) development.

Gloria Cerullo
57 Farragut Rd.
South Boston

Tim Czerwienski <tim.czerwienski@boston.gov>

# South Boston Edison Plant plan

**PAUL CHRISTIAN** [redacted] Wed, Aug 2, 2017 at 3:02 PM
Reply-To: PAUL CHRISTIAN [redacted]
To: tim.czerwienski@boston.gov

Dear Mr. Czerwienski,

I am a lifelong South Boston resident and taxpayer. I am writing to you to voice my strong support that an **arts and cultural center** be included in the future plans for the former Boston Edison Plant site in South Boston.

Paul A. Christian

1682 Columbia Road

South Boston, Ma 02127

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison power plant project

Stephen Congdon [redacted] Thu, Jul 27, 2017 at 10:32 PM
To: "tim.czerwienski@boston.gov" <tim.czerwienski@boston.gov>

Hi Tim,

My recommendations for the project:

- Make sure that the buildings don't block out the view of the city skyline when looking from M street park and Castle Island. I don't know exactly what height the buildings would need to be below to meet that, but I think it makes sense. Tearing down the power plant will remove an eyesore that blocks the skyline view from Citypoint. If we simply build another big building it'll block the view right back out. Let's preserve the view that will be gained by tearing it down.

- This ones simple and I would think will be a given: Redo the sidewalks and stretch of Summer street between the bridge and L st. And pave some lane lines on Summer st.!!! Why are there no painted lanes now anyways? It's absurd the street is incredibly wide and no one knows how to handle driving down it bc of that. Are there two lanes? One? Is there a turning lane from Summer to east first? Let's clean that all up and make it evident.

- The street is also a main thoroughfare for a LOT of walkers and bikers and runners. Wide sidewalks and a bike lane should all be made to account for this. I would guarantee that many commuters would choose to walk, run, or bike to South Station if Summer street were more inviting to do so. (Instead of taking a bus which would answer a lot of public transit issues.)

- Can we plant trees on the sidewalks too down there? That whole area is devoid of life. It would certainly brighten things up and make it more welcoming looking. It's the first thing you see coming into Southie let's make it nice looking!

- Why did they have to put up barbwire fence up around the new haul road entrance off Summer? That looks awful. No one is going to break in there and there's a big long bridge and water separating it from the other side anyways. That was completely unnecessary and not inviting looking coming into the neighborhood. Let's remove that fencing and instead make that small area near the bridge a little park area to sit by the water.

I'm happy to offer more insight if you have any questions about my ideas above. Just let me know.

Thanks!
Steve Congdon (East 7th St.)

Tim Czerwienski <tim.czerwienski@boston.gov>

# dear Tim

Paul Conley [redacted] Thu, Aug 3, 2017 at 9:53 AM
To: tim.czerwienski@boston.gov

as 60-year born & bred Southie resident (until a couple of years ago when i was forced out due to soaring property values) i just wanted to add my 2 c & say i generally support the Redgate project & the proposed work they are & will be doing with the Southie Arts group-----(with the understanding that negotiations about managing the development of that huge property expanse are still ongoing & being fine-tuned)-----Thanks----

Tim Czerwienski <tim.czerwienski@boston.gov>

# Arts and Culture

Barbara Connolly [redacted] Wed, Aug 2, 2017 at 3:43 PM
To: tim.czerwienski@boston.gov

It is absolutely imperative that arts and culture be a major part of the development of the Edison facility.

I also hope that heath and wellness be incorporated for all residents in south boston, including senior citizens. Would it be possible for a South Boston YWCA to be part of this planning also?

Sincerely,
Barbara Connolly

Sent from my iPhone

Tim Czerwienski <tim.czerwienski@boston.gov>

# Boston Edison site

Kenneth Connolly [redacted] Thu, Aug 3, 2017 at 2:04 PM
To: tim.czerwienski@boston.gov

I am a third-generation longshoreman writing this plea to put a stop to the oversized debacle planned for the old Edison site.

I lived in South Boston for 58 years and was virtually forced out by a similar greed-driven project. (Twenty four units in a space which would logically house eight were being constructed next door.)

As my father used to say, you can't put six pounds of sugar in a five-pound sack. In its current form, the enormous scale of this project is a recipe for disaster to a newly thriving port, which provides hundreds of good paying jobs to residents and billions of dollars to the local economy.

Please do all in your power to reassess and modify this albatross before it's too late.

Sincerely,
Kenneth D. Connolly
I.L.A. Local 800

Sent from AOL Mobile Mail
Get the new AOL app: mail.mobile.aol.com

Tim Czerwienski <tim.czerwienski@boston.gov>

# The Edison Plant

Daniel Conroy [redacted] Fri, Aug 4, 2017 at 10:08 AM
To: tim.czerwienski@boston.gov

Please don't approve this project it will have a tremendously negative impact on the quality of life for our community.
Thank You
Sent from my iPhone

Tim Czerwienski <tim.czerwienski@boston.gov>

# South Boston

[redacted] Sun, Jul 30, 2017 at 3:50 PM
To: Tim.Czerwienski@boston.gov

Your site was down for comments
I am 100% against the Edison plant being developed on
First that place is not environmental clean and neighbors would have to deal with bad air during clean up
Second- The traffic that would come through South Boston would make us getting around impossible. We already have parking problems at night. Also in the morning we are all dealing with all this extra traffic as is. Look at morrissey blvd in the morning, we are a cut through as is. Adding all those housing or business would impact us greatly.
Thirdly- I would need to see why you want to build a arts building, I believe they already have a few and don't need more, would rather see that money going to the kids that are left in our old blue collar neighborhood.
Lastly I feel since we are so over populated that anything else here would make SB feel more like downtown then a neighborhood.
Thank you for reading this

Sent from my iPhone

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison project

Curley , Kathleen [redacted] Fri, Aug 4, 2017 at 1:09 PM
To: "tim.czerwienski@boston.gov" <tim.czerwienski@boston.gov>

I am oppose to the Edison project, the neighborhood can't house all those units as it is now I need to walk 6 blocks from my house to be able to get on a bus to get to work due to all the new condominium projects in the last five years, the neighborhood is overcrowded.
My once 40 minute commute has doubled to 80 minutes due to the heavy traffic and commuters;
Please stop the madness!

--

Kathleen Curley
311 Emerson Street
South Boston, MA 02127

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison Development

Caitlyn DeCarlo [redacted] Thu, Aug 3, 2017 at 3:30 PM
To: tim.czerwienski@boston.gov

Hello,

I am a citizen of South Boston and I oppose the proposed development at the Old Edison plant. Please do not allow this project to pass. You will be doing a disservice to the people of South Boston.

--
Best,
Caitlyn DeCarlo

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison Plant Development: the more units, the better .

Zack DeClerck [redacted] Wed, Jul 26, 2017 at 10:10 AM
To: tim.czerwienski@boston.gov

Dear Tim,

We are not South Boston residents. We are new, first-time, homeowners in Egleston Square. The need to increase our housing stock is a regional issue and everyone needs to bear some of the density increase in order to maintain a middle class presence in our city, the possibility for social mobility for families and a diverse economy.

Honestly, I wish some of Boston's wealthier inner-ring suburbs would diversify their housing stock. Whether they do that or not, I will, as a city resident advocate that we do our part by building more residential units.

Please do not let the residential unit count shrink on this project. It's unfortunate that after years of population growth, we now have to play catch-up with our housing supply. But, that doesn't mean we don't have to do it.

We would also advocate for less parking and more bike/ped infra.

Best,
Zack & Maddie DeClerck
20 Forest Hills St. #3
Boston, MA 02130

--
Zack DeClerck
Visual Journalist

Website [redacted]
Email: [redacted]
Phone: [redacted]
Social: [redacted]

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison development plan

Michael DelNegro [redacted] Fri, Jul 28, 2017 at 4:06 PM
To: tim.czerwienski@boston.gov

Hello Mr. Czerwienski,

I am a South Boston homeowner who has some comments regarding the planned development if the former Edison site, as listed below:
1. Clean up of hazardous material on the site, and other environmental impacts
2. Please do not artificially deflate the market by imposing affordable housing requirements - the builders pass the losses on those units along to the purchasung party who then has to pay higher taxes which also go to support those in the "affordable" units.
3. Please preserve public access to the reserve channel; using the converted acreage to increase the Harborwalk space and other forms of public access to the waterfront. Leaving reasonable space for a walkway or public park will still afford the developers the waterfront view and access which boosts their property values.
4. Public transportation. Bus routes need to be expanded, and service of the existing routes needs to be increased to correspond with the levels of ridership. Quality, reliable service will only increase the ridership. A train or streetcar would increase access to the Seaport or Southie without the issues of additional car's and auto traffic.

Thank you for taking these considerations into account.

Mike DelNegro

Tim Czerwienski <tim.czerwienski@boston.gov>

# Opposing the plan for 776 Summer Street

Casey Diehl [redacted] Fri, Aug 4, 2017 at 9:34 AM
To: tim.czerwienski@boston.gov

Hi There,

As a resident of South Boston, I oppose the plan for the plant.

I dont think this community can handle more traffic than it already has. Parking is already a difficult task with the current amount of residents in the city.

Thank you,
Casey Diehl

Tim Czerwienski <tim.czerwienski@boston.gov>

# Boston Edison Development

19pdobes@gmail.com [redacted] Thu, Aug 3, 2017 at 10:50 AM
To: "Tim.Czerwienski" <tim.czerwienski@boston.gov>

Hi Tim,
My name is Paul Dobie ,I'm writing you today to express my concern about the proposed development at the Boston Edison plant in Southie .For the past 33 years I have been employed as a clerk at Moran terminal in Charlestown as well as Conley terminal and at Black Falcon as well
My concern with this proposal is how it will affect our operation,and frankly I don't understand how the city can go forward with this after seeing everything Massport has done to make their expansion project suitable for residents and business alike,upon completion they will have taken all truck and cargo traffic off of East 1st Street and have built a park for residents also along East 1st .
With 1500 new residents and trucks coming and going on Summer street the potential for a traffic jam exists everyday as well as those new residents ultimately voicing their displeasure with container trucks in what they consider their new neighborhood !!
I strongly oppose this new development
Thank You
Paul Dobie
Boston I.L.A

Tim Czerwienski <tim.czerwienski@boston.gov>

# Opposition to the proposed development of the Boston Edison Plant site

**Theresa Doherty** [redacted] Thu, Aug 3, 2017 at 12:42 PM
To: tim.czerwienski@boston.gov

Tim Czerwienski,

I am a Longshorewoman over at Conley Terminal and Black Falcon Cruise Port that commutes to South Boston daily to work. When I heard about the development proposal to The Edison Plant, the first word that came to mind was simply ludicrous. As a commuter to the terminals I already have to deal with heavy traffic coming into and leaving work, by adding this additional development, not only are you creating chaos for me, and my fellow longshore men and women, but also for the residents of South Boston. To help keep the peace, a new road is being built and nearly complete for the trucks to stay off of first street to help alleviate traffic flow and noise pollution.
By going through with this development, not only are you jeopardizing my future at my career, one that I happen to love and be part of a multigenerational line of workers, you are eliminating the possibility of growth and expansion for this port. That is something that I cannot sit by and watch happen.
For the above reasons, and I'm sure there are more, I kindly ask you to reconsider this proposal, not only for my sake, but for the residents of South Boston, my fellow workers and the truck drivers we support and supply.

Thank you for your time,

Theresa Doherty
[redacted]

Tim Czerwienski <tim.czerwienski@boston.gov>

# Opposition to the proposed development of Boston Edison plant s ite

bernard doherty [redacted] Thu, Aug 3, 2017 at 1:04 PM
To: tim.czerwienski@boston.gov

Tim why would I drive to or live at that site with the massive traffic there already also there are thousands of empty stores in the city because most people shop on line to avoid the problems it will create .I'm a longshoreman working at conley terminal and already deal with massive traffic. Yours truly Bernard Doherty crane operator local 805

Sent from XFINITY Connect Mobile App

Tim Czerwienski <tim.czerwienski@boston.gov>

# South boston haul road development.... NO CONDOS

Bernard Doherty [redacted] Thu, Aug 3, 2017 at 1:24 PM
To: tim.czerwienski@boston.gov

Please don't build condos on the haul road.... Use it for parks and industry!!!!

Tim Czerwienski <tim.czerwienski@boston.gov>

# Building project

Dano [redacted] Thu, Aug 3, 2017 at 4:14 PM
To: tim.czerwienski@boston.gov

Mr. CZerwienski ,

My name is Daniel Doherty , I am a longshoreman at the port of Boston. I have heard of your idea of building project at the Edison plant, which is right near our haul road. That road was built to keep the south Boston residents happy, how will the new people deal with thousands of container trucks passing by daily? I don't know but I hope you reconsider the location . Thanks for your time

Sent from my iPhone

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison Plant

**Frank Donaghue** [redacted] Thu, Aug 3, 2017 at 2:05 PM
Reply-To: Frank Donaghue [redacted]
To: "tim.czerwienski@boston.gov" <tim.czerwienski@boston.gov>

This project will virtually destroy the City Point neighborhood of South Boston. Access will be cut off to downtown via Summer St. Public services will be overwhelmed MBTA/parking etc. It will isolate City Point and stir up a tremendous amount of toxins that have laid dormant.

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison plant proposal

Marie Donovan [redacted] Thu, Aug 3, 2017 at 3:19 PM
To: "tim.czerwienski@boston.gov" <tim.czerwienski@boston.gov>

I as a lifelong resident of South Boston oppose this project. This site no doubt contains hazardous materials and I truly believe the contamination from these materials cannot ever be properly eliminated. The scope of the project if allowed to go through is beyond belief, this community has already been overrun with haphazard developments with very little constraints, to allow one of this magnitude will further hamper this great community and its life long residents who are trying desperately to maintain their existence.
Please do not allow this to move forward as presently planned we as a community need someone to listen to us and vote to avoid any further misguided decisions that so severely impact this great community of South Boston.

Thank you
Marie Donovan

Sent from my iPad

Tim Czerwienski <tim.czerwienski@boston.gov>

# RE: L St. Station Redevelopment Public Comments

Sheila [redacted] Mon, Aug 7, 2017 at 10:07 PM
To: Tim.Czerwienski@boston.gov
Cc [redacted]

Hi Tim,

I've been away and missed Friday August 4th dealine for the above development. I live within a few blocks of the proposed project which will greatly affect my family and friends.

This is an unusual project for City Point on many levels and the impact on the future of our community will be long lasting. Therefore the process & partnership with the community, City of Boston, and Redgate must be thorough and transparent. This project should enhance the community's quality of life not deter from it.

1. Traffic Impact - Redgate representatives stated they will conduct a traffic study, what is their criteria and date of study?

2. Parking - Development proposal of 1600 units, 150 room hotel, office and retail spaces. Redgate is providing only 700 parking spaces, which is wildly inadequate for a project this large. Redgate's hypothetical statement, "The folks moving in will not have cars they will use transit, walk or bike to get around," is simply a buzz phrase and false. The South Boston community has over a decade of evidence based facts that contradict Redgate's statement. Folks and their roommates brought their cars with them resulting in a dramatic increase in traffic, noise, and pollution. Too many cars and not enough parking spaces is a major problem in this community and unfortunately has led to a new and dangerous trend of cutting down trees and asphalting back yards for parking and profit.

Sincerely,

Sheila Greene Donovan
77 O Street
South Boston, MA
[redacted]

Sheila Greene Donovan
[redacted]

**Tim Czerwienski <tim.czerwienski@boston.gov>**

# Edison Plant Comments

**Michael** [redacted] Thu, Aug 3, 2017 at 5:57 PM
To: tim.czerwienski@boston.gov

Hi Tim

In early conversation with Redgate a Medicine Wheel along with several cultural organizations in South Boston, proposed cultural space as part of the Addison Develop

The hope is to form a coalition with a governing body to oversee a cultural village that could be used by the existing cultural organizations of South Boston for a Cultural Programing

As part of this proposal a Medicine Wheel would like to be the lead cultural organization and build the collaborative.

We have a Twenty five year history of providing cultural programing on a scale that the sit merits, both as a producing organization and a presenting organization of hundreds of artists each year

We are deeply rooted in the South Boston Community, with our 20 year project at No a Man's Land and also with our acclaimed youth employment a Program. We serve over 300 youth annually

We see an opportunity to amplify the work of other cultural organizations, but also bring museum quality offerings and programs to the site, all the time creating work force development for community youth.

Below is an example of one of our productions, which brought 3000 people together at Castle Island for the 50th anniversary of Martin Luther King's I have a dream speech.

I believe that a cultural space that can be an incubation and experimental space that can bring and serve the community of South Boston and the greater Boston Community is essential.

Yours

Michael Dowling
Artistic Director
Medicine Wheel Productions
[redacted]
110 K Street
South Boston, MA 02127

Sent from my iPad

**image1.JPG**
62K



Tim Czerwienski <tim.czerwienski@boston.gov>

# 776 Summer Street

Allison Drescher [redacted] Fri, Aug 4, 2017 at 3:52 PM
To: tim.czerwienski@boston.gov

Dear BPDA:

Thank you for the opportunity to comment on the proposed Redgate/HillCo Project at 776 Summer Street in South Boston. I am a Trustee and owner of Summer Cahill, LLC, the owner of 840 Summer Street (the Cahilll Building) and a direct abu er to the project site. I live in the City Point neighborhood with my 8-year old son, and own other property in South Boston as well. Please note that while I am a member of the IAG for this project, the following comments are submi ed solely in my personal capacity and in no way reflect the posions or opinions of the IA G.

At the outset, I want to state that I support redevelopment of the site. Moreover, in a general sense, I am supporv e of the uses proposed by Red Gate/Hillco, i.e., a public market or mixed use concept in tandem with residenal and perhap s other commercial uses. I feel that a funconing and de veloped site is far preferable to the exisng de funct and corroding power plant. I believe that the site is close to but sufficiently separated from the exisng neighborhood t o have its own height and density, and should not be bound by the exisng z oning, given the land mass and current configuraon.

Notwithstanding my overall support for the project, I want to emphasize that the ulma te development must funcon in a w ay that allows the South Boston business and residenal c ommunies t o successfully co-exist. My primary concern is the potenal tr affic impact of the proposal.

Trip Generaon and Impacts . The current esma te of 9,000 - 20,000 car trips per day resulng fr om this proposal is staggering. Speaking frankly, the City of Boston has been remiss in not doing extensive traffic studies with the residenal density tha t has been added to the neighborhood. This must happen and the City should work in tandem with the other stakeholders - Red Gate/Hillco and MassPort – to develop a realisc plan f or managing daily traffic in combinaon with truck trip s to and from Connolly Terminal. I would urge the City to undertake a process similar to the recent North Staon Ar ea Transportaon Access Plan, which ackno wledged that, in the face of several large development projects, it was essenal f or the City to understand the exisng tr ansportaon ne twork and idenf y improvements needed to ensure that area growth did not completely gridlock Downtown Boston. South Boston faces many of the same challenges and if the City does not proacv ely address them, both exisng pr operes and ne w developments will suffer irreparably.

Proposed Site Access. The two entrances and exits proposed by the developer are not sufficient and likely physically impossible. The two proposed exits on Summer and East First Street threaten to shut off a key access point to South Boston. South Boston is not a grid like the Back Bay, nor does it have mulple access poin ts like the South End. As a peninsula, there are key entrance points in and out. The First Street outlet threatens congeson and f eeding vehicles back into the neighborhood. Like other residenal ar eas, South Boston, with its proximity to Route 93, suffers from innumerable "cut through commuters" on a daily basis. City Point and residenal streets need to be protected from this.

The outlet onto Summer Street should be a major concern to mulple ag encies concerned with transport on the city and state level. This is a key access point to the Marine Industrial Park, the Seaport District, MCCA, Logan Airport, as well as the haul road accessing MA-90 and a major intake for Rt.93 off D Street. If you take the maximum of cars projected at 20,000 and divide equally between two entrances using a twelve hour day, that is 833 trips per hour. The minimum number of 9,000 trips per day is 375 trips per hour. The likely reality is that these trips will be concentrated during peak hour mes, adding t o the current congeson in the ar ea. The majority of traffic will be exing on to Summer Street, and not onto First Street. Perhaps addional r elief needs to be explored to open access at the top corner of the site by somehow ulizing the haul r oad. I will leave the specific soluons t o the project's and City's traffic

engineers, but it is my strong sense that if these problems are not addressed, the project will place an undue burden on the residents and businesses of this neighborhood.

Thank you for considering my comments. Notwithstanding my concerns, I do appreciate Red Gate/Hillco's outreach to the neighborhood, and look forward to working with them on solutions that will make this project an asset to our community.

Yours Sincerely,

Allison H. Drescher

Trustee

Summer Cahill LLC

--
Allison Drescher
840 Summer Street
Boston, MA 02127
c. [redacted]
f. [redacted]
e. [redacted]

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Tim Czerwienski <tim.czerwienski@boston.gov>

# Opposition to 776 Summer Street

Ellen Duffley [redacted] Fri, Aug 4, 2017 at 3:08 PM
To: tim.czerwienski@boston.gov

Dear Mr. Czerwienski,

I am totally opposed to the proposed development plans for 776 Summer Street.

This overdevelopment (housing; hotel) will have a devastating effect on the current (and already overwhelming) traffic and parking problems in the community. The scale of this proposal further threatens our quality of life (clean air, light, quiet enjoyment of our homes) and most of all -- our safety . The present overcrowded, bumper-to-bumper "L Street" also happens to be the community's EVACUATION ROUTE. Please take a moment to think about that . . .

Thank you.

Ellen Duffley
[redacted]

Tim Czerwienski <tim.czerwienski@boston.gov>

# (no subject)

John Dunkle [redacted] Fri, Aug 4, 2017 at 3:53 PM
To: "tim.czerwienski@boston.gov" <tim.czerwienski@boston.gov>

My name is John Dunkle and I am writing to express my great concern about the proposed project at the Boston Edison plant site. As a longshoreman and Boston resident, I am painfully aware of the adverse impact all the additional traffic would have on Boston as a desirable port to the shipping industry. The congestion in this small area would be compounded by the lack of parking spots, in that the project is proposing less than one parking space per two apartment units! The trucks would be standing in utter deadlock. And need I mention the inevitable addition of a few winter nor'easters to all of this? It's a recipe for disaster.

Boston has worked too hard to be an attractive and accessible port city -- an integral part of our economy-- only to be totally choked off by the massive overdevelopment of this one key area! And while it's anticipated that many of the new residents would use public transportation rather than private cars, the #7 & #9 buses are already stretched far beyond their capacity, with many would-be riders being left standing on the curb, passed by buses bursting at the seams. The badly needed expansion of our transit system has not kept up with development, and that will be complicated and expensive to undertake. But it is downright irresponsible to allow this massive project to proceed until all of these issues have been addressed, and until it can be undertaken in a way that will not destroy our vital ports.

Sent from my iPhone

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison Plant Development - Public Comment

Colleen Dunning [redacted] Tue, Jul 25, 2017 at 12:41 PM
To: tim.czerwienski@boston.gov

Dear Tim,

I am writing to express my reserved support for the Edison Plant Development. I am encouraged by the developers' commitment to residential density, a mixed-use commercial and retail environment, and the clear appreciation they have for the design of public open spaces. I especially look forward to seeing the landscape and park designs that Stoss will produce as the project unfolds.

However, I am concerned that the space allocated to parking would be more valuable as either residential or commercial/retail space. Each underground parking space cost a significant amount of money to build, money that could be used to create affordable units or artist studios, or even more market rate units to supply our resource-strapped neighborhood.

The focus should be on a vibrant, mixed-use, pedestrian development, that is well connected to South Station and the Broadway T stops by 24/7 bus service.

Sincerely,
Colleen Dunning
Resident, 154 W 2ND Street, Boston, MA 02127

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison Plant Development

Andrew [redacted] Tue, Jul 25, 2017 at 2:06 PM
To: tim.czerwienski@boston.gov

Hey Tim -

As a long term South Boston resident transportation in the area is atrocious. Adding more than 10,000 new car trips per day to and from the project, with another nearly 5,000 transit riders will make the area almost inaccessible.

I would support this project if it brought a way to connect the project with Downtown Boston via anything other than busses.

Thanks

Andrew Dyke
104 I St

Boston, MA 02127

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison - L Street Station Redvelopment, South Boston, MEEA No. 15692

**Eileen Smith** [redacted] Fri, Jul 7, 2017 at 5:07 PM
Reply-To: Eileen Smith [redacted]
To: "Alexander.strysky@state.ma.us" <Alexander.strysky@state.ma.us>
Cc: Tim Czerwienski <tim.czerwienski@boston.gov>

July 7, 2017
Alex Strysky
MEPA Office, Mass Dept of Energy & Environmental Affairs

RE: Edison - L. Street Station Redevelopment, South Boston, EEA No. 15692

Dear Mr. Strysky,

In no particular order I would like to make comments as requested by you on June 21, 2017. Never having participated in an IAG I am hopeful that the following suggestions, concerns, needs and wants are workable interests for Redgate and Hilco and to the future of our South Boston community. The community as a whole must be continuously involved and informed with public meetings as to the development stages, plans and potential problems.

The construction/decommission period of 10-15 years will impact City Point for years with additional concerns; traffic, lack of public transportation, noise, dirt and pollution. Measurements must be taken ensuring quality of life. Equally concerning is the Massport/Conley terminal expansion in a densely populated residential area. The added planes coming and going to Logan airport are now flying over our residential areas to runways.

Currently, East Broadway (between L&P Streets) has over **225** buses traveling on our streets on a daily basis. With the Edison residential proposal, there must be a plan which provides for additional transportation and the elimination of added buses and or transportation services to the overwhelmed E. Broadway Street. The noise, dirt, traffic, planes and pollution are already at unacceptable levels. Previously, as suggested by members of the IAG, a noise monitoring system should be installed before the initiation of the Edison development. I hope you will support this issue.

Equally concerning, increased truck traffic, noise and pollution utilizing the Tommy Butler Bridge. We have

thousands of trucks travel our streets every day with the possibility of Boston Harbor dredging to facilitate bigger container ships. Traffic, noise, pollution and parking problems are continuously increasing without a definitive plan and must be addressed before this process proceeds. These environmental issues are once again in a densely populated residential area. Removal of hazardous materials and air quality changes should be publicly posted.

The proposed parking accommodations for the Edison are unrealistic, appalling and unacceptable. The Edison proposal includes fifteen hundred eighty eight (1588) residential units (no detail given as to how many bedrooms in each unit), office space, retail space and a hotel with a projected total of 987 parking spaces. On this issue alone the project should be denied as inadequate. Initial discussions included sufficient parking with the potential of residential parking. Community benefit discussions have included the possibility of residential parking as well as access during snow emergency postings for all South Boston residents. The Edison project has to increase their parking space numbers or change their development proposal to be acceptable and equal to the number of residential units. Parking in South Boston is forcing residents to leave the City and affecting quality of life. Parking on private property with such limited access should be structured in a way to mandate parking on Edison land only. Said land is private and residents should have special parking permits reflecting Edison residency and be allowed two hour local parking only permit. This should help satisfy the discussions regarding new residents using alternative transportation. This will guarantee that what City Point currently has for parking and a lack thereof, will not be eliminated to accommodate Edison residents. Otherwise, as discussed, new residents will be ride sharing, biking, skate boarding and should be willing to sign parking permit waivers. I did not see the designated amount of bike parking spaces. Hopefully, these spaces are not included in the 987 allotted parking spaces. There is a greater need for public and community parking than community arts.

The proposed towers should be lowered and not have offensive lighting that will affect the surrounding residential areas. These proposed high rise buildings are not welcoming to the current residential community.

I believe that preservation of the buildings histories and structures are relevant. The Edison electric Illuminating

Company of Boston is the only plant of its kind in existence dating back to 1886. There is talk of saving the turbine halls which is appreciated. The windows on the L street side of property should also be saved. It would be helpful to have a complete tour (hard hat style) of all the buildings to review their historical relevance.

The suggested architecture shown for the new eight (8) building developments is disturbing and has no relation or historical significance to the homes in the City Point area. This will have to be discussed separately. Said proposal does not meet the standards and historical design of the neighborhood. Proposals do not include two and three family homes of which this neighborhood reflects. Proposals do not specify low income housing and or availability of over 55 housing. Development requires further clarification.

The private development of the Edison is promising access to newly created streets that will remain public. Does this mean that the City will not be responsible for services such a garbage removal, snow removal, police and fire response, ticketing and towing? Therefore, who will be allowed to park on these streets?

I look forward to working with you regarding the Edison development project. It would be helpful for the IAG members to have a 24 hour contact in place for all matters.

Thank you,

Eileen Smith

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison / development

Joe England [redacted] Thu, Aug 3, 2017 at 8:45 PM
To: tim.czerwienski@boston.gov

Dear Sir

I'm writing in regard to the development project of the former Edison plant. I writing to implore you to consider interest of the original people of South Boston of which I am one. One who could no longer afford to live in the neighborhood from which I was born. Large percentage of apartments are now condos , houses that young couples would bid on to buy are now significantly out bid by developers who raze and rebuild and repurpose for profit without consideration of parking , housing or traffic on the community's they invade. Invasion is what it is , they see the Edison plant as an opportunity to pillage and plunder the daily lives of the south Boston community and then move on to the next project. I am a person born in south Boston , who also now works in south Boston. I am a 3rd generation longshoreman who has worked at conley terminal for over 38 years , the port not only generates employment for myself and many other longshoreman but many other jobs such as trucking and the many firms from kraft to Gillette who depend on the port for shipment of their products thru out the world and the consumers who use all the products at a reduced cost because of the speed and close proximity of the products being brought into the port rather then trucked up from New York. I don't see how million dollar condos , and the people traffic will co -exist without disruption of quality of life and disruption of the fluidity of turn around time for products in and out of the port at all hours of the day and night 7 days a week As is what we generally are forced to do to keep up productivity and hold off competition from other ports and terminals. This project will bring new people into an already overwhelmed community whom can't afford rising rent and taxes , with no were to park their cars and traffic congestion which has turned a 5 minute drive thru the neighborhood into a half hour nightmare. The many beneficiary of this project will be the affluent group of new comers into the neighborhood who will be the only ones who will be able to afford and reap reward if their new high rise condo , while the existing neighbors both residents and workers , will gain very little other then increase in traffic and neighbors , who care little at what cost their new residence affects the people around. Please consider the existing neighborhood before granting this enormous project.

Thank you ,

Joseph England

Sent from my iPhone

Tim Czerwienski <tim.czerwienski@boston.gov>

# 776 Summer Street South Boston -- project comments

[redacted] Thu, Aug 3, 2017 at 11:23 AM
To: tim.czerwienski@boston.gov

Dear Mr. Czerwienski:

Please see my attached comments regarding the 776 Summer Street proposal. Please note I have also included a copy directly in this eMail in case you have a problem opening the file. Thank you for your time and for the opportunity to share my comments with you and the BPDA.

Dear Mr. Tim Czerwienski:
I am writing to ask that you please reconsider the density and parking ratio for the development at the former Boston Edison plant (776 Summer Street). The redevelopment of this unique property provides an unprecedented opportunity to create a blending of the existing residential community of South Boston and the new and vibrant waterfront. It has the potential to be the bridge between the Seaport and the neighborhood of both newer and long-established homes in the historic neighborhood of South Boston.
I am asking that you please recognize the potential impact that a soaring 240-foot development will have on the residents, homes, and parks, that are adjacent to it. A smoke stack has a completely different blocking/stacking configuration than a solid wall of apartments taken to that height. The densities are like comparing apples and oranges. Therefore, the smoke stack should not be used as the yardstick for establishing the height of these buildings.
Poised as it is to impact the neighborhood in a most significant way (as is all the other ongoing development), the developer has the opportunity to either create a canyon wall that throws shadows, density, traffic, and noise into an increasingly congested area, or look to create a national urban model for blending the development cohesively into the neighborhood by reducing the number of proposed units and creating sufficient parking. (It is a specious argument to suggest that all the new residents will walk or ride bikes. – Consider the parking rituals post 6 p.m. in most of the adjacent neighborhood – if you've had to find a spot – you know that the argument is a false bill of goods.)
In developing this property – for many years a blight that spewed grime over the neighborhood – I am hopeful that the developer would at the very least consider more than just plopping another BOX 'O luxury apartments/condos into the space. (I understand there are some promising retail/ restaurant also included in the proposal but I am at this time mostly concerned about the proposed density.)
Don't the existing neighbors deserve at least a serious look at the major impact of such a huge proposal? Don't we at least deserve a forthright examination of the environmental impact, traffic, noise, density, and shadows that this development, as proposed, would impose on us?
This due diligence would be the very least that a quality-of-life-changing development such as this owes to its neighbors. Our "community betterment" taxes should at least ensure we take the time and
precautions to take a measured approach to any approvals, code variances, and density issues raised by the development-beleaguered neighbors of the historic South Boston neighborhood.
Thank you for your consideration of these points.
Sincerely,
Therese Evans
942 East Broadway
South Boston, MA

Boston Edison proposal letter .docx
15K

B

Tim Czerwienski <tim.czerwienski@boston.gov>

# South Boston Edison Plant Project

**Patricia Fahy** [redacted] Mon, Jul 31, 2017 at 5:52 PM
Reply-To: Patricia Fahy [redacted]
To: "Tim.czerwienski@boston.gov" <Tim.czerwienski@boston.gov>
Cc: "michael.f.flaherty@boston.gov" <michael.f.flaherty@boston.gov>, "Linda.DorcenaForry@masenate.gov" <Linda.DorcenaForry@masenate.gov>, "Nick.Collins@mahouse.gov" <Nick.Collins@mahouse.gov>

Dear Mr. Czerwienski,

I am writing to register my wholehearted opposition to the Edison Plant Project. I am a life-long resident of South Boston and the current traffic and parking situations are almost unbearable.

I do not have any off-street parking where I live on East 6th St between N and O Streets and between the curb cuts and the condos that have multiple roommates (with multiple cars), I feel like a prisoner in my own home. After I get home from work and find a parking spot, which is usually never on my block, I rarely leave my house at night unless I am going to a destination that is within walking distance. It is not acceptable anymore!

To think that a project is being planned that would provide 700 parking spaces for 1,600 housing units and put 10,000 more vehicles on the street in that neighborhood is nothing but another slap in the face to the residents of the neighborhood. When is this ridiculous overbuilding going to stop?

Driving around South Boston - even on weekend mornings - is like a driving rodeo. One has to maneuver around the construction sites, the double parked cars, the intersections with cars parked too close to the corners restricting your vision...it's absurd.

I am happy to see that our other elected representatives, such as Michael Flaherty, Nick Collins, Linda Dorcena Forry and Steve Lynch, are opposed to this project and I hope that this sways the City's thinking on this project. They have aligned their positions to the feelings of the neighborhood residents and the Mayor and your Department should do the same.

Sincerely,
Patricia Fahy
770 E 6th St, South Boston

Tim Czerwienski <tim.czerwienski@boston.gov>

# please include the arts in the Edison lant development!

Jesseca Ferguson [redacted] Wed, Aug 2, 2017 at 10:58 PM
To: tim.czerwienski@boston.gov

Dear Tim Czerwienski

Greetings!

As a long-time artist resident of South Boston, I strongly encourage you to include the arts & cultural opportunities in the development planned for the Edison Plant

(L Street). I have been living & working as an artist in Fort Point since 1987, so I am familiar with how the arts can benefit a community. Artists pointed out how beautiful the Boston Wharf buildings are - & now the Seaport is capitalizing on what artists discovered in early pioneering days of living/working in 19th century buildings, at the time unwanted by others.

As you no doubt know from reading many studies & articles, the arts bring more money into Boston than sports. Amazing but true! Thus, including venues for arts & culture at the Edison Plant will enhance the area financially. In addition, offering studio space, exhibition space, & arts education space will attract a wide variety of people to the Edison Plant. The Distillery Building, Medicine Wheel Gallery, & Gallery 555 have already generated an arts “buzz” near the Edison Plant - synergy in the making!

Are you familiar with Artists for Humanity on A Street? And Michael Dowling & the Medicine Wheel Project on K Street? Both are examples of arts programs which engage young people, educate them, help them build skills in art & design (& other areas). In addition, these programs also focus on the arts as a community process, as well as on personal engagement & skill building as an individual process. Dowling’s work with local youth around addiction, crime, HIV & other topics is exemplary. Michael & his programs & exhibitions actively engage youth, local community, & local artists. I would hope that the Edison Plant reaches out to & includes programs like these, or builds on their successful models.

For many years I have taught at local art schools (Massachusetts College of Art & Design; The Boston Museum School/SMFA@Tufts; Art Institute of Boston/University; Lesley College of Art & Design). Students graduate & look for studio space & exhibition space.. I know because I did the same thing after graduating from MassArt (undergrad) & then Tufts/SMFA (grad). If live/work space, studio space, & exhibition space are available, artists will stay in Boston & contribute to the life & vibrancy of the city.

Thank you for your time & attention. I look forward to hearing about how the arts & culture will be integrated into the development of the Edison Plant (L Street).

My best,

Jesseca Ferguson

[redacted]

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison

Christopher Flaherty [redacted] Thu, Aug 3, 2017 at 11:49 PM
To: "Tim.Czerwienski@Boston.gov" <Tim.Czerwienski@boston.gov>

I am opposed to this project. Traffic, infrastructure, 1500 new residents will organize against Conley terminal operations. Zoned for maritime and industrial. It would be irresponsible for the city to allow this to be rezoned especially when South Boston was just rezoned. Parking in the South Boston is horrendous, to allow .5 parking per unit would be an insult to residents and the city. Furthermore, this is an opportunity for do some good for Southie, let's get this project right. Dont destroy south Boston, let's make this project benefit the neoghborhood.

Christopher Flaherty

Sent from my iPhone

Tim Czerwienski <tim.czerwienski@boston.gov>

# No Edison development

Martin Flaherty [redacted] Fri, Aug 4, 2017 at 4:13 PM
To: tim.czerwienski@boston.gov

Sent from my iPhone

Tim Czerwienski <tim.czerwienski@boston.gov>

# 776 Summer Street/Edison Plant

Fleury , Lorraine A. [redacted] Tue, Jul 25, 2017 at 4:35 PM
To: "tim.czerwienski@boston.gov" <tim.czerwienski@boston.gov>

Hi Tim,

I am a South Boston resident working in the Seaport area and am excited about the prospect of a new development offering retail, housing (especially affordable housing) and waterfront dining at the Edison Plant location. However, I have serious concerns about adding as many as 1500 units of housing to an already rapidly growing neighborhood. My primary concern is transportation. My son, niece and I commute on the 7 bus and my husband commutes on the 9 and both lines are already seriously inadequate and overcrowded. I can't tell you the number of times the 7 bus has passed me by at the corner of L and Broadway in the mornings and Melcher Street or WTC in the evenings because the busses are too full. And I can't even begin to fathom what the traffic on Summer Street/L Street is going to look like with 10,000 new car trips a day -- particularly in the residential area between Broadway and Day Boulevard which is already very tight and slow-moving due to drivers trying to navigate the parked cars along the sides of the road. Finally, as you know, the neighborhood is in dire need of additional residential parking and my guess is that parking along L Street would ultimately have to be eliminated to widen the road to accommodate the additional traffic and honestly, I don't think 987 spots is going to be enough to serve the 1500 units, let alone afford any dedicated South Boston residential parking.

Thanks for taking my concerns into consideration.

Lorraine Fleury

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Tim Czerwienski <tim.czerwienski@boston.gov>

# Boston Edison Plant - Longshoremen Opposed to Development

Natalie Florek [redacted] Fri, Aug 4, 2017 at 2:10 PM
To: tim.czerwienski@boston.gov

Tim Czerwienski
Boston Planning and Development Agency

THINK. The haul road was built (at an estimated cost of 75 million) in response truck traffic on First Street in South Boston. Bringing residential housing (1,500 units) to haul road will also bring complaints. Boston's port is a "working port" which provides economic revenue, let's be mindful of that. A port, rich in history that works, at times, around the clock - securing employment for hundreds of longshoremen, again THINK. Longshoremen lie deep in the history of Boston - an integral part of the shipping industry for generations. Port shippers have a choice, we want to retain and attract future business - and expand Conley terminal, not give business to other ports. I urge the agency to carefully consider preserving an industrial port and the livelihood of Boston's Longshoremen.

-Natalie Florek
Longshoreman

[redacted]
Sent from my iPhone

Tim Czerwienski <tim.czerwienski@boston.gov>

# Boston Edison Development Site Concerns

Adam Florek [redacted] Fri, Aug 4, 2017 at 3:59 PM
To: "tim.czerwienski@boston.gov" <tim.czerwienski@boston.gov>

To Whom It May Concern,

My name is Adam Florek and I am a longshoreman currently working at Conley Container Terminal. I am writing this e-mail to voice my concerns with the proposed plans for the redevelopment of the Edison Plant on the corner of First and Summer Streets in South Boston. Our unions have worked tirelessly to help secure the state and federal funding to make improvements not only to the terminal itself but also to dredge Boston Harbor to accommodate the larger vessels that will be coming to our port since the wiring of the Panama Canal. I believe that the scale and depth of the proposed plan to redevelop the Edison Plant would drastically impact all that we have worked for. The residents of First Street already petitioned Massport to move the truck traffic of First Street and Massport has spent $75 million to construct the new haul road. I believe that putting more residents that will abut the new haul road will only lead to more problems in the future. It also seems contrary to what you have spent a lot of money to already accomplish. The logistical, traffic and commercial implications of this project are too far reaching for the city or state to handle. Anything that could possibly negatively impact the economic stimulus that Conley Terminal provides to the local economy I cannot condone. Also there are many conflicts of interests between Massport and Redgate and Hilco. All of these factors added together are a recipie for future problems. Hopefully you will take these thoughts into consideration. Thank you.

-Adam Florek

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison South Boston

Caitlin Florentino [redacted] Thu, Aug 3, 2017 at 6:10 PM
To: "tim.czerwienski@boston.gov" <tim.czerwienski@boston.gov>

Good Afternoon Tim,

I grew up in South Boston and the condos are destroying my childhood. Places I used to love are gone. The Edison is how I knew I was home as a child. If that's gone that the last thing from my youth taken away. How would you like it if I went into were you grew up and destroy your elementary school? Or got rid of the place you made your first basketball hoop? When I'm older my kids won't be able to see the things I did when I was little. That's because of projects like this. I'm a born and raise resident and the condos are taking away my chances of coming back after college.

I am a lifelong resident of South Boston and live just two blocks away from the Edison plant with my growing family. I am 100% against all plans for residential and commercial development on that site.

South Boston is crowded enough and we do not need anymore residents or cars, nevermind a project of this mammoth proportion. Our neighborhood can't handle 3,000 more people. Crowds of 100 people wait at bus stops for crowded busses to drive past them every morning. Residents can't leave their homes after 5:00 pm because there are no parking spaces available after that time. We are surrounded by constant construction and BWSC ripping up our streets for months at a time. We are experiencing power outages because the old systems can't handle the demand being placed on them by all the new condos. Our historical homes have been ripped down and replaced with characterless, gigantic condo buildings.

We have had enough! We need to put a stop to the overdevelopment of South Boston. Single homes need to stop being ripped down and replaced with ugly 20 unit condo buildings. We need 24/7 resident parking in the entire neighborhood. Historical homes need to be protected.

The neighborhood needs to become more family friendly - we desperately need housing that is affordable for average income families! Growing families are forced to move out because they can't afford a place to live that has three bedrooms.

The people of South Boston have had enough with overdevelopment of our beloved neighborhood, and we will no longer allow it to happen. I am a part of a large number of residents that will do whatever is necessary to stop any development of the Edison plant location.

Please feel free to contact me with any questions.

Caitlin Florentino

Get Outlook for iOS

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edition Plant

Megan Flynn [redacted] Sat, Jul 29, 2017 at 8:37 AM
To: tim.czerwienski@boston.gov

Hi Tim,
I am writing as a neighbor of the Edison Plant Project. I remain concerned about 3 issues:
- Green Space
- density of the development
-Traffic, parking and public transport

I am in support of developing the land. As it stands now the building is an eyesore and does not serve the neighborhood now. However, I believe a development of this scale needs a lot of green space that is accessible to all. South Boston must demand it. We do not have green space in our area and developers have taken advantage of every square inch of each property they develop.

I believe the project should only be 500 units and units should be added as impact is evaluated and the developer should fund a study to see if the city could bring the red line to city point.

Thank you and I look forward to the ongoing discussions.
megan

--
All the best,
Megan Flynn

Tim Czerwienski <tim.czerwienski@boston.gov>

## Edison Plant, Southie Arts

Bill Frese [redacted]
To: im.czerwienski@boston.gov

Greetings Tim,
My name is William Frese & I am an artist living in Sou h Boston since 2005. Remarkable, remarkable spike in development in this area: Office towers, hi-end condos & many restaurants....
The essential component to a thriving community is culture, most specifically: The Arts. Progress in his area has been severely overlooked.

Respectfully, I urge you to streng hen the health of Culture in South Boston by supporting The Edison Plant/ L Street development. It is such a terrific opportunity hat will positively impact all ages for many generations to come.

Sincerely,
William Frese

http://williamfrese.com/index.html



Tim Czerwienski <tim.czerwienski@boston.gov>

# 776 Summer St South Boston

Amy Frith [redacted] Sat, Aug 5, 2017 at 7:23 PM
To: tim.czerwienski@boston.gov

Dear Mr Czerwienski,
I am concerned the development plans for 776 Summer St, as they currently exist, will negatively impact the neighborhood. I'm not sure what we can do to slow it down but would like to insure the following are considered:

- All toxic soil and materials are removed prior to construction. (with testing throughout the building process to insure it was actually done) We still remember the toxic soil that was supposed to be removed by the contractor from the convention center site that is still there…Now the taxpayers are expected to foot the bill for soil removal that was included in the original project contract, paid for but not completed.
- Please add height restrictions to that project. 20 stories is too high. We deserve to keep our views that made Southie appealing before the rapid development began. Nothing should be more than 5-10 stories maximum.
- Complete an environmental impact study based on the increased traffic from this development. It has become harder and harder to travel in and out of the neighborhood due to the current traffic increases and will come catastrophic after the completion of the project.
- 25% of the units in each building should be earmarked for affordable housing. This should be guaranteed within each building so that the elderly and families with children aren't forced out of the neighborhood by greed.
- The developers and their tenant should pay an additional tax to fund programs that benefit the community to be used to fund youth programs, drug prevention and elderly housing and care.
- 35-50% of the site should be used as public green space within the development.
- Every building should include 2 parking spaces per unit. Parking is already impossible as it is.
- the developers should add the construction of an affordable community based gym like the Y including an indoor and outdoor swimming pool for use by the neighborhood.

Thank you for your consideration.
Sincerely,

Amy Frith

Tim Czerwienski <tim.czerwienski@boston.gov>

# Art and Culture

Suely Garcia [redacted] Thu, Aug 3, 2017 at 6:00 AM
To: "tim.czerwienski@boston.gov" <tim.czerwienski@boston.gov>

In solidarity to the people of Boston and specially the Southie community I'd like to ask you to not forget to include Art and Culture to the project. I believe they are vital for the survival of our community as a whole. We cannot let more developments take over our city without some cheerful place to go. Edson Plant is our landmark, let's make the most of it!
Thank you

Suely Garcia

319 E street apt 5
South Boston

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617-268-5517 www.gavinfoundation.org


August 1, 2017

Tim Czerwienski
Boston Planning & Development Agency
One City Hall Square
Boston, MA 02201
bostonplans.org

Re: 776 Summer Street, South Boston (L Street Station Redevelopment)

Dear Mr. Czerwienski:

I am writing to express my concerns about the proposal to develop the former Boston Edison plant at 776 Summer Street in South Boston. As a local resident and President/CEO of a local nonprofit, I have seen many neighbors, friends, family, employees and clients forced to move because of high rents. The proposed development of the Edison Plant will have serious negative impacts on our neighborhood and fails to address the urgent need for affordable housing for working families and the elderly.

The proposed development includes nearly 1,600 units of housing. To address the need for affordable housing in South Boston, the developer should commit to a much higher percentage than the 15% minimum City of Boston requirement of affordable housing on site. Both lower income and middle income residents are being displaced in South Boston because of rapidly increasing real estate prices. The City's Inclusionary Development requirement is not adequate to address this critical neighborhood need because the income levels for IDP units are not low enough to address the needs of low income workers who earn less than $50,000 annually. Elderly residents are most at risk of displacement because their income is usually below $25,000 annually.

South Boston deserves a greater percentage of affordability to mitigate the impacts of this project. We do not need more luxury housing; we need ownership and rental opportunities for working families and deeply affordable housing for the elderly.

Thank you for this opportunity to comment.

Best Regards,

President/CEO


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**PRESIDENT/CEO** John P. McGahan

Tim Czerwienski <tim.czerwienski@boston.gov>

# Voicing opposition to 776 Summer Street proposal

Katie Gentile [redacted] Fri, Aug 4, 2017 at 3:10 PM
To: tim.czerwienski@boston.gov

Dear Mr. Czerwienski,

I left a comment on the BPDA website, but would like to follow-up via email. I strongly oppose the project at 776 Summer Street. As a 10-year resident of South Boston, I have seen the negative effects of overdevelopment on this neighborhood in a relatively short amount of time. I am greatly concerned about the size and scale of this particular project. My specific concerns include: the lack of additional community resources such as police, fire, etc. that will be (and already is) greatly needed with the influx of new residents; the insufficient infrastructure to accommodate the influx of traffic in and out of Southie; the unknown health and environmental issues that will inevitably happen due to a project of this size and on land that has already been deemed hazardous. I would be remiss to not mention the already overburdened and mismanaged MBTA - I can't even begin to imagine the impact an additional 1500+ residents would have on the system as it is now.

I love this neighborhood and community, and have chosen to raise my family here. However, after hearing about and educating myself on this project and the magnitude of its impact, I am seriously reconsidering my decision. In my opinion, this is the proverbial last straw, and truly reflects the greed and money-hungry mentality that has taken precedent over the safety and well-being of the residents of this neighborhood.

Many thanks for your attention on this matter.

Best,
Katie Gentile
697 East 6th Street

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison Plant Redevelopment

Terry Gilhooly [redacted] Thu, Jul 27, 2017 at 3:40 PM
To: tim.czerwienski@boston.gov

Hi Tim,

There needs to be a significant improvement in public transportation if the Edison Plant is to include over 1500 additional units.

The current bus system is no sustainable and cannot handle the additional capacity.

A study should be done and funded by the developers to determine if a subway system can be extended from broadway station down to city point or a system from south station to city point.

Thanks,
Terry

Sent from my iPhone

Tim Czerwienski <tim.czerwienski@boston.gov>

# Electric Plant Development

Amy Glynn [redacted] Thu, Aug 3, 2017 at 6:21 PM
To: "tim.czerwienski@boston.gov" <tim.czerwienski@boston.gov>

Please please please allocate space for grass trees and parks - South Boston has greedily been developed as a dismal ugly concrete NATION -please

Tim Czerwienski <tim.czerwienski@boston.gov>

# Arts and Cultural Community Center at Edison power plant

Hall, Judith [redacted] Wed, Aug 2, 2017 at 2:00 PM
To: "tim.czerwienski@boston.gov" <tim.czerwienski@boston.gov>

Dear Mr. Czerwienski,

My name is Judy Hall, a professor at Northeastern University. I live in the new apartment building at 455 East First St., with my husband Fred Gordon. We recently moved there after 26 years in Newton. Fred is the owner of the Distillery at 516 East Second St.—an arts building that has been flourishing since he bought the property and developed the concept back in the early 80s. The building we are in is the brand new ultra-green apartment building that Fred just completed, which adjoins the Distillery. We are thrilled to be residents of South Boston and to be surrounded by the enthusiasm and camaraderie fostered in the Distillery arts complex.

The presence of the arts in South Boston is clearly a signature feature of this part of the city, distinguishing it in unique and exciting ways from other city neighborhoods. Obviously it is a draw to many people for their work and living, and creates a level of respect and admiration for Southie that has, in history, been lacking all too often. I feel strongly that establishing the Arts and Cultural Community Center on the Edison site would be an extremely good addition to Southie's personality and vibrancy.

Sincerely,

Judith A. Hall

Tim Czerwienski <tim.czerwienski@boston.gov>

# 776 Summer Street, former Edison Power Plant

Hamilton, T errance J. [redacted] Tue, Jul 25, 2017 at 1:47 PM
To: "tim.czerwienski@boston.gov" <tim.czerwienski@boston.gov>
Cc: Patricia Hamilton [redacted]

Tim,

In 2013, my wife and I moved from Beacon Hill to City Point in order to reduce the size of the mortgage and get a little more outdoor space. We have succeeded on both fronts, and are pleased to be living in Southie. In particular, my wife enjoys long walks through the neighborhoods and out to Castle island and Pleasure Bay, while we both enjoy bike rides along the waterfront, Dorchester Shores Reservation, Columbia Point and Savin Hill Cove.

I will be happy to see the old Edison plant Torn down; to me it is an eyesore. On the other hand, I can't imagine a new development accommodating over 1500 units of housing, a 150 room hotel, 10,000 new car trips and 5000 additional transit riders. On the other hand, I'd love to see 987 underground parking spaces, particularly if a few hundred were dedicated or otherwise made available to current residents of City Point. My law office is in Fort Point, and most days I commute on the # 7 bus. I'm not telling you anything you don't know when I say the bus is overcrowded and is unable during rush hours to accommodate the number of passengers using it. Most evenings, at least one or two, and sometimes as many as four buses pass me by at the Melcher Street stop because they are packed like sardines coming out of downtown and South Station. Any development of the Edison site must be linked with major capital improvements to the MBTA, including extensions of the Red and Silver lines and perhaps even a monorail from the site to South Station. Otherwise, L and Summer streets will be one horrific parking lot during the early morning and late afternoon commutes.

While I am in favor of development and the jobs and opportunity it will bring, including mixed use residential (including affordable) and retail units, the present development plan needs to be scaled back so as not to adversely affect the present residents, including the continued use (if not intelligently controlled and modest expansion) of Conley terminal.

Thank you for your attention to this matter.

Terry
Terrance J. Hamilton
Casner & Edwards, LLP
303 Congress Street
Boston, MA 02210

[redacted]

[redacted]

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Tim Czerwienski <tim.czerwienski@boston.gov>

# South Boston

Christopher Hamilton [redacted] Fri, Aug 4, 2017 at 7:20 AM
To: "tim.czerwienski@boston.gov" <tim.czerwienski@boston.gov>

I am against the development at the old Edison plant. The streets cannot support the traffic of that many residential units. And to think everyone is going to use public transportation is a pipe dream It takes 25 minutes to get from broadway station to flood square at night because of grid lock. The city needs to serve people who live here, pay taxes and vote. Stop serving the out of town developers

Sent from my iPhone

Tim Czerwienski <tim.czerwienski@boston.gov>

# Comments on 776 Summer St Development Plan

Daniel Hauck [redacted] Tue, Jul 25, 2017 at 2:13 PM
To: tim.czerwienski@boston.gov

Hello,

My name is Daniel Hauck and I live in South Boston. I fully support the development of the Edison Power Plant site for a multi-use residential/commercial/business site, but I do have some concerns and things I'd like included:
1. If the site is allowed to have residential buildings higher than 100ft, then at least 10$% of the units should have at least 3 or more bedrooms for family sized housing, and at least 20% of all units should be income eligible aka affordable in perpetuity (and they must be onsite; no offsite offsets should be allowed). I would also support more units and higher density/height if 25% of units were deeded as affordable in perpetuity.
2. There must be better transit options for getting in and out of the area; both an upgrade to the #7 bus but also a redline spur or track change that bring the red line to City Point should be included in the development plan. Traffic in the area is bad enough and with 10,000 new minimum car trips a day there needs to be much better public transportation options included in the proposal or it should not move forward.
3. We need more parks and public spaces in Southie so this should also include a substantial new public park (I would support higher buildings and greater density if it allowed for a better, larger public park for all to use).

Thank you for your time,
Daniel Hauck

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison Power Plant Project

Zach Herman [redacted] Thu, Jul 27, 2017 at 12:26 PM
To: "tim.czerwienski@boston.gov" <tim.czerwienski@boston.gov>

Hi Tim --

I'm an eight-year South Boston resident, currently on East Fourth Street, who has been monitoring the public discussion of proposals for the Edison project. Unlike some of my neighbors, I am not against a residential project at the site. The appeal is undeniable, and we can't let prime land sit disused. However, I think there are a few *major* issues that need to be resolved in these plans before they go forward.

1. There has to be a significant amount of public green space. The amount of truly usable green space in Southie is small. It's basically a concrete jungle. The power plant could be the last truly transformative project in the neighborhood's redevelopment, and green space has to be prioritized.

2. No hotel on the site. I'm sure this is super appealing to the developers, and I want them to be successful. But there are many, many hotels just across the bridge in the Seaport District. A hotel would be a traffic disaster and would make the site much less appealing for the people who live there full-time.

Sometimes I imagine the hellish experience of living in one of the condos as Assembly Row, where 95 percent of traffic is people buying shorts at J. Crew or going to Legoland. This is what I imagine a hotel would bring to the power plant site.

3. Traffic There has to be either a massive expansion of bus service or an extension of the Red Line and/or Silver Line for this to work. (This should be done anyway.) Adding thousands of new cars here will choke off L Street and make downtown inaccessible for Southie residents.

4. Affordability Southie has a glut of million dollar condos already. As a resident, I'd gladly trade density on this project for the knowledge that these apartments and condos will be within the financial reach of the typical Bostonian. People who want to spend $1 million - $2 million have more options than they could ever imagine (including basically every residential unit built on the water in the past five years). Meanwhile, people who want to spend $400,000 - $700,000 (or less!) have to go to Roslindale. Southie is an incredible neighborhood and people who want to be our neighbors shouldn't be shut out just so a developer can maximize sale price.

Thanks for your consideration,

Zach Herman
East Fourth Street
--

Sent from my HTC 10

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison plant development

Family [redacted] Fri, Jul 28, 2017 at 1:39 PM
To: tim.czerwienski@boston.gov

Dear Sir
Two years ago we acquired a property in South Boston and during this time we have enjoyed being part of this community.
We understand the importance of progressing and bringing life to areas that have been abandoned for some time like this plant. We valued the idea to recycle this 15 acres area and make a new urbanization for other families in a constrained Boston.
Nevertheless we have some request which we would like you consider in the evaluation of this project:
- it must have no more than 250 units with sufficient parking for each of them.
250 units means an average of 600 new inhabitants in this area where we are already getting crowded because of the port activities and the limited number of streets to access. As we already have constrains with the parking , especially during winter season, the project should include at least one underground parking for each unit.

- it should have at least 5 acres of green areas and parks to support the reforestation of the this area.

- it should include cinema, shops, supermarket, and a cultural space etc to support the community.

- it must be low rise to be align with the current urbanization of S Boston, where the zoning for high rise buildings is forbidden.

- it should have bike and pedestrian access, and be dog and environmental friendly. As the demographic of this community consists of young profesionals, families with young kids, retired and veterans we need green areas to do sports, walk the dog, have a safe promenade, etc.

Thanks in advance for considering this petition.

Kind regards

Leyla Hernandez-Donoso & Racho Strauven

From Leyla's phone

Tim Czerwienski <tim.czerwienski@boston.gov>

# South Boston Edison Development

Colette Herr [redacted] Thu, Aug 3, 2017 at 6:32 PM
To: tim.czerwienski@boston.gov

Dear Tim,
I am writing to voice my opposition to the proposed development of the Edison property in South Boston.

I am a lifelong (61+ years) resident of the City Point neighborhood. Over the past 20 years I have watched the swift transformation of South Boston. I will agree that some changes have been an improvement but the overall density issues, lack of parking and the impact on public transportation and public safety are untenable.

The Edison property is certainly a wasteland as it stands however the proposed development is overkill. Eliminate the 20 story buildings and the 1500 residential units and it may be palatable. Develop a 'destination' of a hotel, restaurants, community space, commercial space, open space to enjoy the harbor...leave out the residential units.

Thank you for your consideration of the community's thoughts on this matter.
Sincerely,
Colette Herr

Sent from my iPhone

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison plant in sb

Peggy [redacted] Mon, Jul 31, 2017 at 1:26 PM
To: "tim.czerwienski@boston.gov" <tim.czerwienski@boston.gov>

I'm a lifelong resident of sb & im not happy with all this over development & this proposal
For the old Edison is outrageous, it's disgraceful what the money hungry developers have done to our town, why not municipal parking for sb residents to make up for all the extra cars, maybe a community pool or center, a small hotel is ok, but no apartments, the old cardinal Cushing school apts at w.broadway & a st are filling up with section 8 people & we don't want that, maybe a minimum amt of condos, 50 tops, some shops, a restaurant with parking. The congestion on l st is already rediculous, we don't any more traffic, not to mention health problems from the old Edison, I'm 70 years young & plan on staying here but I'm pleading with you to think of us the neighbors here & stop all this nonsense, enough is enough!! I can be reached at [redacted] my hse phone , I live &916 e fourth st
Sent from my iPhone

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison Power plant

[redacted] Wed, Jul 26, 2017 at 7:24 AM
To: tim.czerwienski@boston.gov

Tim Czerwienski, the BPDA project manager

Dear Tim--

I live in South Boston and am worried about our infrastructure from this and the many other construction projects. What do you intend to do about the thousands of new cars on the street? I don't know that requiring this company to build at T station like they did at Assembly Row will solve the problem, although it may be a good idea. What people don't seem to be factoring in when condos sell over a certain dollar amount is that those people can afford to have cars they don't necessarily need for work. Also, just because you provide them with public transportation doesn't mean they will use it. The bottom line is, there is no way to predict what 1500 new families will do. I hope the one gas station we will have left in town will support them. I hope there is enough power, water, sewer, etc service to support them as I know many people have been dealing with the water issues during construction.

Those are my concerns
Audrey Hopkins

Tim Czerwienski <tim.czerwienski@boston.gov>

# Boston Edison Plant Site

dylan joyce [redacted] Thu, Aug 3, 2017 at 6:02 PM
To: tim.czerwienski@boston.gov

Tim,
My name is Dylan Joyce and I am a proud member of the Longshoreman Association. I would like you to reconsider your thoughts about taking down the old Edison Plant. My Family has work in Connolly Terminal for over 100 years. I don't want to see anything happen to any of my brothers or sisters jobs. Our operation consists of importing goods for not just Boston but for a large area of New England. Installing new Condos or hotels in the area of the Edison building will effect our operation not just as a port but as a family. So if you will take this message to consideration it would be greatly appreciated, and help my our generations to continue at the Port of Boston.

Thank you

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison plan proposal

Kerry Joyce [redacted] Fri, Aug 4, 2017 at 3:08 PM
To: tim.czerwienski@boston.gov

Dear Mr. Czerweinski,
I am writing to express my concern regarding the proposal for the Edison plant. As a longshoreman I make my livelihood on the docks and am concerned how this could negitively effect operations at the port. We are a busy port with much coming and going at all hours. I do not see this activity as agreeable to a residential area. I would not want people moving in and then complaining about the 24 hour noise and activity and restricting our business. This affects the massport employees, truckers, mechanics, electricians, and too many more to list. Thousands of people are connected to the port. Commerce is the backbone of this country, please keep our impact in mind.
Sincerely,
Patrick Joyce
ILA local 805

Sent from my Verizon Wireless 4G LTE smartphone

Tim Czerwienski <tim.czerwienski@boston.gov>

# Fwd: Planning Comment Submission: Edison Power Plant

Chris Busch [redacted] Mon, Aug 7, 2017 at 12:11 PM
To: Tim Czerwienski <tim.czerwienski@boston.gov>

Tim,

776 Summer comment below.

---------- Forwarded message ----------
From: <kentico@cityofboston.gov>
Date: Thu, Aug 3, 2017 at 4:22 PM
Subject: Planning Comment Submission: Edison Power Plant
To: Chris.Busch@boston.gov, BRAWebContent@boston.gov

CommentsSubmissionFormID: 183

Form inserted: 8/3/2017 4:21:45 PM

Form updated: 8/3/2017 4:21:45 PM

Document Name: Edison Power Plant

Document Name Path: /Planning/Planning Initiatives/Edison Power Plant

Origin Page Url: /planning/planning-initiatives/edison-power-plant

First Name: Elaine

Last Name: Joyce

Organization: Resident

Email: [redacted]

Street Address: 1792 Columbia Road

Address Line 2:

City: South Boston

State: MA

Phone: [redacted]

Zip: 02127

Comments: I oppose this project due to density and over crowding concerns. My neighborhood is impassable at times, currently. The parking, over crowding, strain on inadequate bus lines and health and safety concerns repurposing a power plant are all issues. OPPOSE.

--

Tim Czerwienski <tim.czerwienski@boston.gov>

# 776 Summer St

Ann Kane [redacted] Mon, Jul 24, 2017 at 10:02 PM
To: tim.czerwienski@boston.gov

Hi,
I am writing to object to the planned development at the former Edison plant. I live on East Third Street between N and O St. Even without the proposed development, City Point faces too few parking spots for too many cars coupled by heavy traffic for a residential neighborhood. Many days I am lucky to park 1/2 mile from my house at the beach. Our residential roads like N and M Street are already cut-thrus to the Seaport. At rush hour, it is hazardous to cross L St. and Broadway as drivers do not uniformly honor cross-walks or street lights. These issues have been intensifying over the past few years unabated given all the new development in City Point and Seaport areas.

It is clear we cannot simply add such a massive development to this area as planned. Bringing thousands of new residents and adding thousands of new cars to the roads requires significant improvements to the neighborhood's infrastructure. The property developers need to add more parking to be sure, .5 spots for 1,500 unit is just not sufficient. Furthermore, the city needs to corral the right resources to ensure the safety and livability of City Point from the time construction starts. The high priorities should be:
1. Adding more resident parking
2. Widen the major arteries like Summer Street to accommodate more lanes of traffic to keep these cars from using residential roads
3. Extend the Silver Line throughout City Point as the 7 and 9 are already insufficient to manage the current traffic
4. Increase the fire and police presence in the neighborhood. We have 2 firehouses and 1 police station to cover all of South Boston which also includes the ever-growing Seaport
5. Better enforcement of cross-walks and traffic lights to make it safer for pedestrians

Finally, I am concerned about hazardous waste that is most likely in the building and soil. I am worried about health effects once the area is under-construction. I would like to know how the city will be testing and monitoring pollution.

I appreciate your feedback.

Kind Regards,
Ann Kane
730 East Third Street.
[redacted]

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison Plant

Jarrod Kaplan [redacted] Thu, Aug 3, 2017 at 12:30 PM
To: tim.czerwienski@boston.gov
Cc: [redacted]

Tim,
I am a Boston longshoreman. My family has worked waterfront for over 50 yrs . I am strongly opposed to the proposed development of the Boston Edison plant by Redgate/Hilco. The port is vital to the economy here in the city of Boston. The port has seen significant growth in the past decade and expansion projects are already underway. This project will definitely have a negative impact on the port. Please consider how this will effect the port and the many people that work there.
Thank you,
Jarrod Kaplan
ILA Local 805

Sent from my iPhone

Tim Czerwienski <tim.czerwienski@boston.gov>

# I support the L Street Power Plant Project

Jason Kaplan [redacted] Fri, Aug 4, 2017 at 5:20 PM
To: tim.czerwienski@boston.gov

To whom it may concern,

I a a resident and property owner in South Boston. I'm writing to express my support of the residential density of the L Street Power Plant development project at 1600 units. This type of development is what our community needs to protect affordable housing and satiate the growing demand for property in the area.

Sincerely,
Jason Kaplan
237 Dorchester Street
Boston, MA 02127

Tim Czerwienski <tim.czerwienski@boston.gov>

# Power Plant

Joe [redacted] Wed, Aug 2, 2017 at 2:07 PM
To: tim.czerwienski@boston.gov

South Boston needs affordable Housing for poor people! The town has underutilized schools and we don't have many children outside the Housing Projects! Family housing is essential! We also need a Cultural Center! Thank You! Joe Kebartaa

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison Plant

Ruth Keogh [redacted] Thu, Aug 3, 2017 at 6:39 AM
To: tim.czerwienski@boston.gov

Hi Tim,
I would love to see a multifunctional space for small theatre productions, music events, art displays.
Thanks
Ruth Keogh
11 Hamlin St
02127

Sent from my iPhone

Tim Czerwienski <tim.czerwienski@boston.gov>

# 776 L St.

**VIRGINIA KROPAS** [redacted] Mon, Jul 24, 2017 at 4:16 PM
Reply-To: VIRGINIA KROPAS [redacted]
To: Tim Czerwienski <tim.czerwienski@boston.gov>

Goodday, Tim.

Thank you for keeping me in the loop regarding public meetings. Someone sent me the South Boston TODAY article about local pols suddenly up in arms over the Edison redo. I feel this project will be fantastic and I'll suffer the driving problems trying to exit Southie northbound if I have to.

My thought is that, with the Dot Ave corridor going in and blocking west egress from Southie, and the Old Colony slowing southwest even more, the BPDA should work on future plans that call these developments the last large projects in South Boston. We will have contributed enough space and sacrificed livability to assist Mayor Walsh in his quest to add 53,000 housing units. Any others should be low and moderate income units built by reputable non-profits which should awarded the grants, waivers, variances, amenities, and tax relief given to such as GE and others. Can someone discuss with Mayor Walsh?

Time to plan real transit infrastructure that will make Downtown accessible to the bedroom communities in our city and talk about density and clustering housing around transit hubs. What do you think?

I'm a lifelong Southie resident.

Sincerely yours

V Kropas

B

Tim Czerwienski <tim.czerwienski@boston.gov>

# 776 L St. comment

**VIRGINIA KROPAS** [redacted]
Reply-To: VIRGINIA KROPAS [redacted]
To: Tim Czerwienski <tim.czerwienski@boston.gov>

Thu, Aug 3, 2017 at 2:45 PM

Yes, Tim. And please add:

To Whom It May Concern:

I am writing in regard to plans for development of 776 Summer Street/ Edison.I am a lifelong South Boston resident.

I am very excited about this project.I took the first tour of the Turbine Hall.When I spoke with Greg Bielecki about what was to be preserved, what green and public spaces were being thought about and how the rest of the 15 acres would be utilized I realized this is massive.I believe the developers are planning this in good faith.Unlike other developments that have been and also will be disruptive to South Boston this is being guided by their vision to produce a cohesive whole of many parts, old and new, that I think will be distinctive and a credit to the world class city we live in."Where was this planning on Atlantic Ave.?", "… on the Dot Ave. corridor?"," … Old Colony?"

I like the concepts of an possible extension of M St., the passageway through the Turbine Building at First, the different ways of massing the taller structures to the middle of the site while keeping First Street and the channel edge more human scale, and providing access with new green design to enhance the idea of walkable people spaces.The will to preserve vestiges of Machine Age structures is a great handle after decades of (mostly) elimination of anything cast iron: old and new.I hope the residential, business, and commercial spaces add interesting stylistic contrast.All this on land that is now fallow with no access.The landscape firm that is working on design is world class.Check their website.

I attended the IAG.I was impressed by the thoughtfulness and intelligence of the volunteer advisers.They have taken on such a massive task.So many issues to plan for, think about, and resolve!Zoning issues alone!!!From 3 directions.I hope it can be worked out.And thanks to an historian or two there was a bit of guidance regarding cleanup and remediation of the site as well as preservation issues.One talked to me of needing to design a kind of passive boundary (walkway? wall?) between the commercial and hotel structures and the water's edge to indicate it as useable by all, not part of the businesses.

Like many residents I'm nervous about the impacts short- and long-term on mobility in and out of South Boston.As Joanne said it is vital that Boston, the T, Passport take a serious and holistic look at the problem of moving around in the city.Regarding parking, the developers are using a Mayor Menino idea of limited parking in development and none additional in the surrounding neighborhood.Construction will cause huge upheaval in a densely populated part of the city.Getting "for sure" commitment of no higher than 225' (?) for carefully selected buildings among ones with different lesser heights also key to the visual impact.No 6-story blank walls, but maybe green walls and beehives on the roofs.

Enough.

Very sincerely yours,

Virginia Kropas

> On July 25, 2017 at 8:52 AM Tim Czerwienski <tim.czerwienski@boston.gov> wrote:
>
> Thanks, Virginia. I've sent your email along to the Director. Should I include this message in my file of public comments for the project?

On Mon, Jul 24, 2017 at 4:40 PM, VIRGINIA KROPAS [redacted] wrote:

Please forward to Director Bryan Golden

VK

On July 24, 2017 at 4:16 PM VIRGINIA KROPAS <vkropas1@comcast.net> wrote:

Good day, Tim.

Thank you for keeping me in the loop regarding public meetings. Someone sent me the South Boston TODAY article about local pols suddenly up in arms over the Edison redo. I feel this project will be fantastic and I'll suffer the driving problems trying to exit Southie northbound if I have to.

My thought is that, with the Dot Ave corridor going in and blocking west egress from Southie, and the Old Colony slowing southwest even more, the BPDA should work on future plans that call these developments the last large projects in South Boston. We will have contributed enough space and sacrificed livability to assist Mayor Walsh in his quest to add 53,000 housing units. Any others should be low and moderate income units built by reputable non-profits which should awarded the grants, waivers, variances, amenities, and tax relief given to such as GE and others. Can someone discuss with Mayor Walsh?

Time to plan real transit infrastructure that will make Downtown accessible to the bedroom communities in our city and talk about density and clustering housing around transit hubs. What do you think?

I'm a lifelong Southie resident.

Sincerely yours

V Kropas

--

boston planning & development agency

Tim Czerwienski

Project Manager
617.918.5303

Boston Planning & Development Agency (BPDA)
One City Hall Square | Boston, MA 02201
bostonplans.org

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison power plant construction project

Rebecca Lanstein [redacted] Tue, Jul 25, 2017 at 2:54 PM
To: "tim.czerwienski@boston.gov" <tim.czerwienski@boston.gov>

Hi Tim,

I live in east 5th with my family ( 2 kids and husband) and I would support the project if it included the following:

Family friendly units (3 or 4 bedrooms)- most building are 2 bedrooms which is not enough for families who want to stay in the city.

Middle income affordable units for families

2 +acres of grass and park space with a playground for all ages plus area for outdoor entertainment area

A hotel and retail space and office space would be a plus

Over 2,000 + parking spaces are needed as southie already has a horrible parking issues. Please ensure there is more then enough off street parking.

Thanks
Rebecca lanstein
422 e 5th st.

--

Becca Lanstein

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison Project

**c2010.cleahy** [redacted] Sun, Jul 30, 2017 at 7:21 PM
To: tim.czerwienski@boston.gov, [redacted]

Tim,

I live close by and my kids attend southie schools and play southie sports.

The project seems huge. Street traffic already is heavy. People won't just buy fewer cars because you give them fewer spots. But this is so big, there is a lot of money involved.

As such:

I want to see thought about a trolley down the bypass road to the silver line and now down Lstreet to south station. A loop.

I'd like to see a new ball bark for the Babe Ruth baseball team. Completed in advance of the project as a goodwill gesture to the residents. Play ready for Spring 2018. Suburbs with fewer resources have better facilities. Also the same for other sports i.e. softball. Also new fields for little league. They are great, but the kids should have better.

I'd like a 2nd new soccer field for the kids to play on. I'd like to see whatever the hockey program needs to be addressed. I'd like to see whatever the basketball program needs addressed.

I'd like a development funded sports facility mostly for children to be a place for teams and coaches to go with their teams to practice, and if the coaches can't always make it, they offer back ups. It could be a development funded program, managed out of the BAC or a spot well suited.

I'd like the development to fund several paid positions to help the volunteers in hockey, baseball, softball and all southie sports to help offer more clinics and facilities for the kids to practice in.

Chris Leahy

Sent from my Verizon, Samsung Galaxy smartphone

Tim Czerwienski <tim.czerwienski@boston.gov>

# Boston Edison Plant South Boston - Development Proposal

Denise Connolly [redacted] Thu, Aug 3, 2017 at 2:44 PM
To: Tim.Czerwienski@boston.gov
Cc: mayor@boston.gov, city.council@boston.gov, Linda.DorcenaForry@masenate.gov, Nick.Collins@mahouse.gov

My name is Denise (Connolly) Leary and I am a longshoreman (as well as a life-long resident of South Boston). My family has worked as longshoreman in the port of Boston for generations.

I am writing to state my opposition to the proposed development of the Boston Edison Plant in South Boston.

This project would cause irreparable harm to my livelihood and result in severe economic hardships for me.

This project would also adversely impact the Conley Terminal that is currently going under expansion. The new haul road has removed traffic from East First Street and greatly increased productivity and ease of access to the Conley Terminal for trucks. If this new project is built, it will be built on the new haul road which will severely impact the operations of the Conley Terminal (at which work is performed at all hours of the day and night). This would be extremely detrimental to the port of Boston as a valued destination by shippers.

By copy of this email, I'm also asking that my state and local representatives oppose this project.

Thank you.

Denise (Connolly) Leary
1424 Columbia Road
South Boston, MA 02127

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison development

The Lee Clann [redacted] Thu, Aug 3, 2017 at 12:28 PM
To: tim.czerwienski@boston.gov

Dear sir

My name is Brendan lee and I am a third generation longshoreman. I am sending this email to oppose the massive development that is being proposed at the former Edison plant This massive project will be detrimental to many jobs that are related to the shipping industry and Conley terminal. This would cause more traffic, more delays and shippers will chose to send their cargo elsewhere, where the turnaround time is quicker. Growing up in South Boston, I have seen the overdevelopment of the area. The traffic has become a mess at certain times of the day. Please consider the neighborhood and many jobs that will be detrimentally affected. Thank you for your time and consideration.

Brendan lee

Sent from my iPhone with autocorrect

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison Plant

Amy Lindenfelzer [redacted] Fri, Aug 4, 2017 at 9:16 AM
To: tim.czerwienski@boston.gov

Please stop the over development in South Boston. We do not have the infrastructure to handle the proposed Edison project and the fact that it's even being considered is ludicrous. It takes me one hour on public transport to get to Copley for work everyday. It's 3 miles away. The traffic and backup this project will cause is unfair to what is left in our community.

Also, the fact that Mayor Walsh is allowing a building to be built near the Boston Garden is a sin. For what? Foreign investors to buy? Way to sell your souls to the devil.

We are not Manhattan. Please stop this at once before Boston loses its charm and historical quality.

Any Lindenfelzer
Registered Voter!!!
South Boston Ma
[redacted]

Sent from my iPhone

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison Site

Kenneth H Lloyd [redacted] Tue, Jul 25, 2017 at 12:04 PM
To: "tim.czerwienski@boston.gov" <tim.czerwienski@boston.gov>

Mr. Czerwienski,

I own 150 K Street, around the corner from this site, and I am very excited about the proposed development. I think changing the ugly pink monstrosity into mix use is really terrific. I know people will be up in arms about the # of parking spaces, but the bottom line is, Zip Car, Uber, Lyft, and other services have really changed how people in the city get around. I know plenty of people who forego owning a car in the city because of the cost, as well as not being worthwhile given available alternatives.

I do think improving/increasing public transportation in that area would largely address a lot of the concerns.

Kenneth Lloyd

Assistant Director for Administration

Haystack Observatory

99 Millstone Rd, Westford, MA 01886

Email: [redacted]

Ph: [redacted]

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison Proposition

Pattyanne Loftus [redacted] Thu, Aug 3, 2017 at 1:38 PM
To: "Tim.czerwienski@Boston.gov" <Tim.czerwienski@boston.gov>

Edison Bldg on Summer St. in South Boston. I wish you could see your way to making a park or greenway there. It already takes 1/2 hour to come up or down Summer Street from E B'way to Flynn Memorial Park area. It takes another 1/2 hour to go all the way down B'way and to make life any more miserable for those of us who live in the section of Boston is cruel. If you go across the line to Dorchester there is so much space and beach and I believe they would be glad to hear from you. What this section of the City needs is less traffic and density and so much more parking.

I

Hope this won't be ignored...

patty

Tim Czerwienski <tim.czerwienski@boston.gov>

# Port of Boston

Ronald P Logan III [redacted] Thu, Aug 3, 2017 at 8:36 PM
To: tim.czerwienski@boston.gov

If you plan on doing this to the Edison property your jeopardizing the income I need to provide for my three daughters ages 4,2, and 1. I am a longshoreman that works at Conley container terminal and was once a resident for many years in that neighborhood.

Ronald P Logan III

Sent from my iPhone

Tim Czerwienski <tim.czerwienski@boston.gov>

# The Edison Project in South Boston

Peter Logue [redacted] Thu, Aug 3, 2017 at 4:28 PM
To: "tim.czerwienski@boston.gov" <tim.czerwienski@boston.gov>
Cc: Peter Logue [redacted]

Dear Sir,

I am writing to share my opinion that the existing development project, as currently proposed, needs to be significantly scaled back.

Also, we should not move forward without a clear understanding of our existing transportation situation in the area to be directly impacted, and how the proposed development may further impact both the immediate area and the adjoining Seaport and City Point neighborhood traffic, specifically.

Sincerely,

Peter Logue
881 E 1st Street
South Boston

Tim Czerwienski <tim.czerwienski@boston.gov>

# 776 Summer Street (Edison Plant) comment period ends August 4

Linda L ynch [redacted] Tue, Aug 1, 2017 at 8:20 AM
To: Tim Czerwienski <tim.czerwienski@boston.gov>

Hi Tim,

I think, as a lifelong resident, the project sounds wonderful. I know there are problems with zoning, but do believe it will be changed for this project. I wish it could be done in 10 years and not 15. I want to be able to enjoy it, I am a bit of the older generation, but of course, I have the same comment as probably a large percentage has, PARKING. I do live in the area on O & 4th Street, and believe that the parking will spill into the neighborhood. Maybe there is a way to do a few different levels of parking, maybe a 5-6 story building for parking. A floor for the hotel, a couple of floors for those who buy condos there, a couple of floors for visitors. This is my only complaint: parking, otherwise I say great luck to this development company.

Linda L ynch

[redacted]

From: Tim Czerwienski [mailto:tim.czerwienski@boston.gov]
Sent: Friday, July 28, 2017 3:11 PM
Subject: 776 Summer Street (Edison Plant) comment period ends August 4

[Quoted text hidden]

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison plant

Caroline Baker [redacted] Thu, Aug 3, 2017 at 2:11 PM
To: tim.czerwienski@boston.gov

I vehemently oppose this project! The current project proposed will negatively impact the town of South Boston. The additional traffic, people, parking issues, etc.

Caroline Madden
28A Story Street
South Boston, MA 02127

Tim Czerwienski <tim.czerwienski@boston.gov>

# edison pant

nancy [redacted] Fri, Aug 4, 2017 at 6:40 AM
To: tim.czerwienski@boston.gov

hi tim
Please include an arts and cultural center in the L Street Edison Plant Development.
There are enough overpriced restaurants, too many “luxury” condos and not enough art & culture in southie.

thanks,

nancy maggs
240 E street
south boston

Tim Czerwienski <tim.czerwienski@boston.gov>

# Concerns regarding Edison project in South Boston

[redacted] Fri, Aug 4, 2017 at 5:16 AM
To: "tim.czerwienski@boston.gov" <tim.czerwienski@boston.gov>

To Whom It May Concern

These are mine and the rest of South Boston residents reasons why the Edison project is not a good idea...I am a lifeling resident.

·1,500 units, you figure 3,000 people and their cars!
·Only 987 parking spots included and they are going to try for on street parking as well.
·They are figuring between 4,000 and 10,000 (!!) additional cars coming and going to and from this site everyday including commuters to their proposed offices and offering the MBTA as an option for residents.

L Street is already a congested highway for commuters
·busses can't handle the current community
·parking is getting worse and worse as it is
·The town would be gridlock

Multiple buildings 20 stories high?! Ten years of nonstop construction!?

The negative impact of this project would be crippling to the neighborhood. It's outrageous.

Sincerely

Lauren Mahoney

Sent from my MetroPCS 4G LTE Android device

Tim Czerwienski <tim.czerwienski@boston.gov>

# Proposed Development of Boston Edison Plant Site - South Boston

Dorothy Manning [redacted] Thu, Aug 3, 2017 at 9:03 AM
To: "mayor@boston.gov" <mayor@boston.gov>, "Tim.Czerwienski@boston.gov" <Tim.Czerwienski@boston.gov>
Cc: "city.council@boston.gov" <city.council@boston.gov>, "Linda.DorcenaForry@masenate.gov" <Linda.DorcenaForry@masenate.gov>, "Nick.Collins@mahouse.gov" <Nick.Collins@mahouse.gov>

Dear Mayor Walsh and Mr. Czerwienski,

We are writing to voice our strong opposition to the proposed development of the Boston Edison Plant site in South Boston. This project is TOO BIG! The sheer size and scope of the project and the amount of vehicle traffic proposed will have a devastating impact on the residents of South Boston.

The amount of vehicle traffic of 10,000 - 20,000 each day would add too much congestion to an area that's already maxed out in traffic, parking and public transportation - that alone would make this project unfeasible.

Additionally, it is our understanding that development of housing is not allowed on the site. Therefore, the proposal for 1,500 residential units and a 300 room hotel (or any housing) should not be allowed on this site.

Lastly, but no less important, is that a new haul road has been added for truck traffic to the Conley Terminal in South Boston to move trucks off of East First Street and to bolster the expansion of the Conley Terminal as a premier shipping destination. The economic impact to those who work there would be disastrous.

By copy of this email, we would ask all of our elected representatives to do the right thing and strongly oppose this development as well.

Thank you.

Dorothy and Martin Manning

745 East 6th Street, Apt. 16

South Boston, MA 02127

Tim Czerwienski <tim.czerwienski@boston.gov>

# A resident of south boston against the planned Edison developme nt

kevin manning [redacted] Thu, Aug 3, 2017 at 9:56 AM
To: tim.czerwienski@boston.gov

Dear Tim,

I am a south Boston resident and a longshoreman. I live at 805 east broadway. I have lived here for my whole life 28 years. I strongly oppose the Edison Plant development. The proposed density and scale of the project will only serve to further increase the traffic and congestion that the overdevelopment of South Boston and the waterfront had already caused. Parking has always been an issue and the proposed number of 1/2 parking spot per unit is ridiculous. Please do not allow this project to go forward as proposed. Also the added traffic to the city point of south boston will cause to much congestion in an already small neighborhood.

Sent from my iPhone

Tim Czerwienski <tim.czerwienski@boston.gov>

# (no subject)

[redacted] Thu, Aug 3, 2017 at 6:34 PM
To: tim.czerwienski@boston.gov

To : Tim Czerwienski & The rest of the members of the Boston Planning and Development Agency.

From : Brian Manning , forth generation South Bostonian & Member of ILA Local 800

I wish to express my unequivocal opposition to the planned development at the South Boston Edison Plant site. The good people of South Boston have been besieged by over development for years, and this will be straw the breaks the camels back. No sane resident could possibly see this as beneficial, the negative impact will choke the life out of the neighborhood. As a member of the Longshoremen's union I see this as nothing more than the ULTIMATE JOB KILLER for everyone inside the union and many many people outside the union. The reason is simple. The proposed development at the South Boston Edison Plant and the Conley Container Terminal cannot coexist in any form. Period !

The Port of Boston is the main artery of Massachusetts' consumer economy, with imports and exports serving as strong catalysts for growth, investment and opportunity. As Governor Baker said " The Conley Container Terminal's sustained growth is a pillar of the Massachusetts economy, supporting thousands of jobs and local businesses across the Commonwealth, while ensuring people receive the goods they need when they need them". The proposed development does none of these things. Plus the HUNDREDS of MILLIONS of dollars that have and will be spent on harbor dredging, facility expansion, and infrastructure investments makes the Proposed South Boston Edison Plant Development an Idiotic Idea worthy of only the most greediest developers and the most corrupt public officials... Besides I doubt very highly that you Tim and the rest of BPDA members would ever approve of a development that affected you, your family,your neighborhood, and livelihood in such a negative way.

Sent from my iPhone

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison plant

John Marcella [redacted] Thu, Aug 3, 2017 at 1:47 PM
To: "tim.czerwienski@boston.gov" <tim.czerwienski@boston.gov>
Cc: [redacted]

Dear Tim

My name is John Marcella. I am a longshoreman of oval 799 currently working on Conley Terminal in South Boston. I am opposed to the proposed development plans for the Edison building site for the reasons listed below.

1. Detrimental to the operation and future of the Conley container Terminal.
2. Could eventually and realistically put many people who rely on the port to make a living, in the unemployment line. Not only fellow longshoreman but line handlers, truckers and also Massport employees.
3. Put an even greater increase in traffic problems in an already overburdened South Boston.

All of this so some developer can cash in on people's misery and walk away from the mess they created for the men,women and families who have lived and worked and paid taxes here for generations

Thank you for your time

Sent from my iPhone

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison Development

**Linda McCullough** [redacted] Thu, Aug 3, 2017 at 4:52 PM
To: "tim.czerwienski@boston.gov" <tim.czerwienski@boston.gov>
Cc: George McEvoy Jr [redacted] Billy Sullivan [redacted], Dennis McLaughlin [redacted]

Dear Mr Czerwienski

My name is Linda McCullough. I have been employed as a longshoreman for over 20 years. I have seen lots of changes in that 20+ year time frame. Massport combined ports many years ago. They have invested and expanded Conley Terminal. They recently received a $42 million dollar grant to expand the port further & dredge the harbor. This is to accommodate the new larger vessels. These vessels come at all times of day and night. We sometimes work around the clock to accommodate these shipping lines. We load & unload in upwards of 1000 trucks a day with the cargo that comes off or goes on those ships. Most recently to alleviate traffic & move the trucks away from the residences. Massport built a new access road. Now, you want to bring new residents into that area. I guess to me it just doesn't make sense. In all honesty you will bringing new congestion to the area. You could be affecting many hard working blue collar jobs Longshoreman/truckers etc. We are known as a small port with a quick turnaround a selling point to many shipping lines. Please consider rethinking this new proposed development of the area. It is not in the best interest of The Port of Boston

Thank You for listening to my concerns,

Linda McCullough
[redacted]

Sent from my iPhone

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison Development Project

Mary McDonough [redacted] Thu, Jul 27, 2017 at 10:58 PM
To: "tim.czerwienski@boston.gov" <tim.czerwienski@boston.gov>

Dear Mr. Czerwienski,

I would like to convey my concerns regarding the Edison plant project on L Street. First of all, until Boston has a working and reliable public transportation infrastructure (I.e., MBTA), the condo expansion in certain parts of the city needs to cease. South Boston is one of these areas. There was no urban planning in South Boston or in the Seaport. Urban planning is a foreign concept for Boston. People cannot get to work or school now. The streets in Seaport have been narrowed, lanes have been lost, sidewalks are huge and the transportation choices are crowded and few in number. The redline and orange line break at least once a week at rush hour; if it is too hot or too cold, they do not work.

People want green space, walking and bike paths, access to the waterfront and parking. These things are always an after-thought in Boston. After the BigDig project there were no funds left for amenities like green space; it took a long time for the Rose Kennedy Greenway to come to fruition and there is always a controversy about funding continuance. Same goes for the Lawn on D.

I know the State is expanding MassPort and the harbor depth. What happens to that? L Street and First Street have always been industrial and maritime zoned. You cannot have both unless an access road is built that bypasses the residential area for truck traffic. I suppose that will be an after-thought, for the neighbors to figure out and pay for, not the developers.

In the past month, two huge "luxury" condo developments have burned to the ground because they were made of wood. Developers build cheap and charge luxury prices, all the while ignoring the needs of the people who live here now. Many elderly people in Waltham were exposed to smoke and had to evacuate their homes at 3am because of this "shoddy", dangerous construction, bad decision making, and lack of concern for safety. The mayor of Waltham is now concerned but it's too late. Throwing up these projects and not having planning, foresight and concern for public safety is unethical. It provides nothing in the way of quality of life for current or future residents. Southie has seen way too much of this.

Is that area even safe to be built upon or is it a hazardous waste site? If Boston wants to be a world class city, it needs to start thinking strategically with a 50 year plan and not just approve every condo or building project that comes along, otherwise it is short-changing Itself.

Boston does not have a world class zoo or a botanical garden. How about something culturally significant in Southie instead of a condo complex? Why can't there be ferries or shuttles to downtown now to supplement the bus transportation? These could be paid for by charging the large-scale developers in the city and state, a fee explicitly directed to new transportation. Why are the needs of the average citizen always an after-thought in Boston and Massachusetts?

Sincerely,
Mary McDonough

Sent from my iPad

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison project

michael mcevoy [redacted] Thu, Aug 3, 2017 at 12:26 PM
To: tim.czerwienski@boston.gov

As a longshoremen at the Port of Boston I am against your plan to build condominiums and apartments at the Edison site. The scale of your project and the added cars and traffic will affect commerce in a negative way at the Port of Boston, and you do know that we are a Port that works 24 hours a day and I can't imagine that your tenants and owners will not have issue with the noise and lights of a 24 hour operation at the Port. Sincerely Michael McEvoy I.l.A Local 800.

Sent from my iPhone

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison Plant project opposition

George McEvoy [redacted] Fri, Aug 4, 2017 at 1:03 AM
To: Tim Czerwienski <tim.czerwienski@boston.gov>

Dear Tim,

I strongly oppose the Edison Plant project. Conley terminal is New England's only full service container terminal. It generates 4.6 billion dollars in economic activity per year for the Commonwealth. The port of Boston employs 7,000 direct jobs, most of which are blue-collar jobs. Conley terminal is about to undergo a billion dollar upgrade between dredging and land side improvements. Productivity and efficiency have increased almost 30% in Conley terminal over the last three years. This has led to three consecutive years of record breaking volume being shipped in and out of the port. Boston has become an attractive destination for shoppers because of our ability to get trucks in and out with their containers in about 30 minutes. We will lose our competitive advantage if the 10,000 additional cars per day jam up the streets between Conley's new haul road and the highway connections. The US army corps of engineers completed a study a couple of years ago that predicted Conley's container volume to double by 2025. If this development is allowed to go forward, the future of our working port Is in jeopardy . Please consider the workers which depend on this port in order to provide for their families. It will not affect just the ILA members, but about 6,500 other workers spread through the Commonwealth whose businesses depend on the success of Conley terminal. Please do not allow this project to go forward. Thank you for your time.

Sincerely,

George McEvoy
Business Agent
ILA 800

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison development

Zep mac [redacted] Thu, Aug 3, 2017 at 9:45 PM
To: tim.czerwienski@boston.gov

My name is Christopher McEvoy, I am a life long resident of South Boston. During my life here I have seen the change the neighborhood has gone through, and in the last few years it has really ramped up. We were once an actual neighborhood where everyone knew each other and everyone helped out to make life easier. Since the developments have came however, the neighborhood I once knew to love has long lost been forgotten. Gone are the days of helping your neighbor shovel out his or her car, helping the elderly with groceries, or just chit chatting on the stoops talking about the Bruins, Patriots, Red Soxs and Celtics. They've changed literally every aspect of the neighborhood, they even went after the street hockey court behind the rink. I am also a Longshoreman who has been employed at Conley terminal for the last 12 years. I am writing in opposition of the proposed development of the Edison plant. The port of Boston, Conley Terminal, has been the most efficient port in North America the last 5 years and counting. Putting in a development of this size and scope is absolutely going to hinder our progress of our ability to be efficient and attractive to the shipping industry which is quite cut throat. Massport itself has also realized this and has recently received monies to construct a dedicate haul road and expand the terminal. Slowly but surely our efforts and work ethic have made Conley Terminal one of the most attractive places to import and export out of. With all the work we have down to relieve congestion off of East First St., this plan wants to drop at least 1,500 condo units, a 300 room hotel, and an open marketplace all on the street that we just got the trucks off of. They estimated between 10,000 to 20,000 visitors a day. A DAY! All the efforts to get the trucks off of East First will be for naught if this project gets approved. The port of Boston is the gateway to New England, this development will one hundred percent hamper our ability to do our jobs effectively and efficiently. To approve this project would be to throw out all of the infrastructure improvements we have already made and we would have to start from scratch again on what to do about congestion at L ST. and East First st.

Thank you for reading.
Sincerely,
Christopher McEvoy

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison Plant Development

Kristin McFarland [redacted] Tue, Jul 25, 2017 at 2:44 PM
To: tim.czerwienski@boston.gov

Hi Tim,

I would like to express a few opinions on the development of the Edison Plant as a South Boston resident and homeowner.

- I am for the development of the old plant into functional, usable space
- I am for the expansion of commercial / retail space in South Boston. We are currently inundated with residential expansions and there are no commercial spaces to keep up. We need more restaurants, grocery stores, shops, and other amenities. Right now people live in Southie but there is hardly anything around to keep us here without having to travel to other neighborhoods. I want to support my local businesses
- I am totally against any residential development at the power plant. I know this will never happen, but the idea of 1,500++ more units coming in to jam up the already maxxed out busses and blog up the already packed roadways is absurd. Even 200 units sounds like a tremendous amount, but certainly more acceptable than over 1,500.
- Much like any new construction has rules as to number of parking spaces per unit, my support would be contingent on some similar metric for a partnership with the MBTA to bring on additional 7 and 9 busses per residential unit milestone.
- I do not want another hotel coming to Southie. It is a neighborhood community and all of a sudden all of these hotels are popping up bringing tourists to stay. Pretty soon we'll have guided segway tours of Whitey Bulger's old stomping grounds. If I wanted to live in faneuil hall or I'd move there.

Southie is a very unique community in the city and my biggest concern is that this massive development is going to totally and irreparably change the neighborhood....further commoditizing it to be exactly like the rest of the city.

Thank you for your time.

Sincerely,
Kristin McFarland
I Street

Tim Czerwienski <tim.czerwienski@boston.gov>

# Arts and Culture at the Edison (L Street) development

Karen McFeaters [redacted] Thu, Aug 3, 2017 at 6:48 PM
To: tim.czerwienski@boston.gov

Dear Mr. Czerwienski,

I write to you as a BPDA certified artist and member of both the Fort Point Arts Community and South Boston Arts Association.

I believe South Boston would truly benefit from having a dedicated center for the arts. Several years ago I visited the Guthrie Theatre in Minneapolis, MN and was blown away by the facility, which was dedicated to theatrical productions, but when I went I saw a break dancing competition that teens from all over the region (including Wisconsin and South Dakota) took part in. They had dancing teams, read poetry, did monologues, etc. This was a HUGE facility dedicated to the arts with several dining options and a gift shop but it was a place that I never forgot in that it was so inspiring to see how much support the city gave the Guthrie Theatre and I left feeling very impressed with Minneapolis as a whole.

I envision an arts space as a center for education, performance, gallery exhibitions and retail. It would be wonderful if local artists had a place to showcase and sell their work, congregate and share performances with the general public.

We now have an opportunity to showcase the talent of South Boston's artists, with the community at large. Please support an arts and culture space at the Edison development which will demonstrate that South Boston is a cultural destination worth experiencing!

Thank you for reading my email.

Sincerely,

Karen McFeaters

[redacted]

Tim Czerwienski <tim.czerwienski@boston.gov>

# Comments on 776 Summer Street Project

James A. McGee [redacted] Sat, Aug 5, 2017 at 12:09 AM
To: "tim.czerwienski@boston.gov" <tim.czerwienski@boston.gov>

Dear Mr. Czerwienski,

As residents of the City Point neighborhood of South Boston, we are writing in support of the proposed development for 776 Summer Street.

We are proud to live in a city that continues to grow and flourish and are looking forward to seeing the redevelopment of this property with all of the community benefits it will bring. The proposed mixed-use development is exactly the kind of enrichment and investment in our neighborhood that we, as residents, are truly excited about! Specifically, we are most excited about the open space and areas for public use that the developers have shared with our neighborhood. Having a safe place for families and children to visit that is nearby with so many amenities is not only incredibly exciting for our neighborhood but also terribly needed (historically, South Boston has not benefitted from this type of investment as much as other Boston neighborhoods, and we welcome it). In addition, we eagerly await the addition of retail and restaurant space to allow local businesses to expand and better serve the local community.

While we are very much looking forward to the redevelopment of this site, and the restoration of the Edison Power Plant that has been an eyesore for too long in our neighborhood, there are still a few issues that we have questions about. We are most concerned with the potential for increased traffic and the need for additional parking in an already busy area. We would ask that traffic and parking studies be done and careful consideration be made to ensure that the additional vehicular traffic and parking needs of the proposed project will not create an undue hardship for current residents who rely on Summer Street and its many cross streets for parking and commuting to work every day. We would also ask that a coordinated effort be made with the MBTA and other transportation organizations (e.g., Boston Harbor Cruises) to expand the transportation options in and around the South Boston waterfront to better accommodate this rapidly developing community.

We appreciate the developers' continued outreach and communication with the neighborhood and look forward to the much needed development of 776 Summer Street that our neighborhood and city as a whole will be proud of.

Thank you for your consideration.

Sincerely,
James and Jean McGee
893 East 2nd Street, #9
South Boston, MA 02127

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison Project

Patricia Mclaughlin [redacted] Thu, Aug 3, 2017 at 3:08 PM
To: tim.czerwienski@boston.gov

Please, please, please oppose the Edison projected condos, hotel, and retail shops. There isn't room in an already overcrowded city. How will cargo leave the dock? How will cruise passengers be able to even leave the boat to discover our city.

I lived on G Street when the 17 story apartment building was built. It is like a large wart on an otherwise beautiful neighborhood. It also destroyed the view of hundreds of people.

Please preserve the character of this city.

Pat McLaughlin
111 G Street
South Boston, MA 02127

My name is Dennis Mclaughlin. I have been a Longshoreman for 20 years. I have watched Conley Terminal grow exponentially in the last eight years. It has now come to have a 4 billion dollar impact on Boston and New England. Massport has built a beautiful park, now named Butler Park and buffer zone along first st. They have built a by pass bridge directly to Conley Terminal off Summer St. to keep trucks off neighborhood streets. We are good neighbors in close proximity. Now a Developer has bought and plans to cleanup the Edison sight on the corner of 1st and L st. It is not OK and we oppose this project which according to their figures will bring more than 10,000 new car trips PER DAY to the immediate area. It will directly affect our Port and the 7,000 jobs affiliated with the shipping industry. We settled our differences with the close residents. Now you want to allow residents to move closer to where we work. This makes no sense to us. Please rethink your decisions and come up with a different plan. Eliminate this proposed monstrosity along with it's traffic congestion and neighborhood nuisance it's sure to become. Thank you.
Dennis Mclaughlin Longshoreman
Business Agent
ILA 805

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison Plant

Amy McPhee [redacted] Thu, Aug 3, 2017 at 1:29 PM
To: "tim.czerwienski@boston.gov" <tim.czerwienski@boston.gov>
Cc: [redacted]

Mr. Czerwienski,
I am writing to you today to state my opposition to the proposed development of the former Edison Plant by Redgate/Hilco. I am a fourth generation longshoreman and I grew up in South Boston. My family has seen many changes with the port and within South Boston. The last thing South Boston needs is more condominiums and especially in that location. The new haul road was just built to help ease the traffic that is currently on Summer and First St. and now they are proposing a project that will add an additional 10,000 to 20,000 cars to the area.
The port of Boston is vital to our economy. This project will most definitely have a negative impact on the port. Conley Terminal has achieved significant growth in the last decade and Black Falcon Cruiseport has also undergone major improvements and the number of cruise ships that visit the city continue to grow every year. The proposed traffic from this new development will interfere with daily production at both locations. I am sure you know there are a number of jobs supported by our industry. It's not just the longshoremen that this will effect. Please consider how this project will impact everyone who lives and works in the neighborhood. Thank you for your time.
Sincerely, Amy Conley McPhee
ILA Local 800
Sent from my iPhone

Tim Czerwienski <tim.czerwienski@boston.gov>

# 776 Summer Street

Kelly Meade [redacted] Fri, Aug 4, 2017 at 6:52 AM
To: tim.czerwienski@boston.gov

With respect to the proposed development at the old Edison plant, I suggest that more family-sized housing be built. As someone with a child who realizes how impossible it is to find 3 or 4 bedroom apartments in South Boston, and has seen many families leave once they have more than one child, I think the new development should have predominantly 3 and 4 bedroom apartments to meet this need.

Thanks,

Kelly Meade
Resident of South Boston

Sent from my iPhone

Tim Czerwienski <tim.czerwienski@boston.gov>

# South Boston Arts

smfmpm@aol.com [redacted] Fri, Aug 4, 2017 at 9:43 AM
To: tim.czerwienski@boston.gov

Hi Mr. Czerwienski,

I just wanted to offer my support to the proposed Arts Center at the site of the Old Edison Power Plant.

The idea of an Art and Cultural Center at the site would bring a long overdue idea to fruition and provide the residents with something for themselves
especially with all of the building and construction going on in the area the Neighborhood needs something that they call their own.

Please if there is anything further I can to do help this project please feel free to contact me.

Sincerely,

Fred Melchin
718 East Fourth St
South Boston, MA 02127
[redacted]

Tim Czerwienski <tim.czerwienski@boston.gov>

# Cmment Letter -Boston Edison Plant Development

rmeyer rmeyer [redacted] Fri, Aug 4, 2017 at 12:33 PM
To: "tim.czerwienski@boston.gov" <tim.czerwienski@boston.gov>
Cc: "beldridge@msc.us" <beldridge@msc.us>, "lwieland@massport.com" <lwieland@massport.com>

This Comment letter is being submitted on behalf of The Boston Shipping Association, Inc

The BSA is a corporation that represents employers, shipping agents, stevedores, shipowners and others with direct interests in the waterfront in Boston and commerce in the New England Region

I am Richard Meyer, Executive Director of The BSA and these comments represent the concerns our organization has with potential impacts on the operation of Conley Terminal

1. The proposed development must not disrupt what is a 24/7 operation with considerable truck traffic that will continue to operate on a dedicated roadway.

2. The estimated increase in cars coming in and out (10,000-20,000) could hamper the flow of truck movement.

3. It is important that the parties are aware of and protect the DPA.

4. The buffer zone must be configured to give maximum separation of the project from the working terminal.

Conley Terminal is a major commercial hub for the New England region that is responsible for thousands of jobs and the movement of cargo throughout the region. We cannot afford to have Boston's only

Container terminal negatively impacted by this proposed project. It is also worth noting that the State and Federal governments have committed millions of dollars to dredge Boston Harbor to promote

Commerce and allow for larger ships and more cargo to pass through Conley Terminal. We want to make sure that additional condominiums in the area do not trump what is a continuing vital operation for

Boston and the entire New England region.

Respectively submitted

Richard Meyer

Executive Director

Boston Shipping Association, Inc.

Tim Czerwienski <tim.czerwienski@boston.gov>

# (no subject)

**Patricia Hamilton** [redacted] Tue, Jul 25, 2017 at 3:40 PM
Reply-To: Patricia Hamilton [redacted]
To: "tim.czerwienski@boston.gov" <tim.czerwienski@boston.gov>

Hi Tim:

My husband and I have been living in Southie for a few years and consider it to be a gem. We enjoy walking and biking along the South Boston beaches as well as an occasional bike ride through Marine Industrial Park. One of the most dangerous intersections on our route is the corner of L and 1st Street because it is a congested, high traffic spot. I believe the proposed project is just too big and will add to an already overburdened area of South Boston. I am fortunate in that I do not have to take public transportation to work because I work from home. On those rare occasions when I do need to be somewhere, the drive up L St. to Summer St. is a nightmare between the trucks and high volume car traffic. To make matters worse, if there is a convention/show at the Boston Convention and Exhibition Center it can be a long day's journey into night. Adding so much more real estate/people to the mix just doesn't seem like a good idea. Scale it back, scale it down and allow some of the uniqueness that is Southie room to thrive.

*Patricia Michaels-Hamilton*

Patricia Michaels-Hamilton, Esq.
Law Office of Patricia Michaels-Hamilton
86 O Street
Boston, MA 02127
[redacted]
Fax: [redacted]

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Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison Power Plant

**Marc Miller** [redacted] Thu, Aug 3, 2017 at 12:49 PM
Reply-To [redacted]
To: tim.czerwienski@boston.gov

I would like to add Fort Point Theatre Channel's voice to the supporters for a cultural/arts focus as part of the vision for the Edison Power Plant development. We appreciate the discussions with Redgate/Hilco and would love to see space in the final development for performance and other arts. This would not only serve the community and our own needs, but help solidify the arts identity of the South Boston/Fort Point/Waterfront area, with a triangle from City Point to the ICA and Society of Arts and Crafts to the Fort Point community of artists.

Marc Miller
Producer/Co-Artistic Director, Fort Point Theatre Channel
www.fortpointtc.org @fortpointtc 617.750.8900
Follow us on Facebook, Twitter, & Instagram

Upcoming Productions:
Threw the Keyhole, August 19, 2017
***The Ghost Sonata***, October 2017

Tim Czerwienski <tim.czerwienski@boston.gov>

# Opposition to Edison Building Plans

Caitlyn Miller [redacted] Fri, Aug 4, 2017 at 8:30 AM
To: tim.czerwienski@boston.gov

Dear Tim,

My name is Caitlyn Miller and I have been a longshoreman for over ten years. I am sending this email to oppose the development that is being proposed at the former Edison plant. This project will hurt the many jobs that are related to the shipping industry and Conley terminal. This would cause more traffic, more delays and shippers will chose to send their cargo elsewhere, where the turnaround time will be quicker. Over the past ten years I have witnessed the overdevelopment of the area. The traffic has become more dense with every development and the parking for visitors is non existent. Please consider the local economy, the workers that would be effected by this development, and the neighborhood. Thank you for your time.

Sincerely,
Caitlyn Miller

Tim Czerwienski <tim.czerwienski@boston.gov>

# I Oppose the Edison Plant Project

Kate McDermott [redacted] Fri, Aug 4, 2017 at 8:37 AM
To: tim.czerwienski@boston.gov

Dear Tim,

My name is Kate Miller and I am a longshoreman. I am sending this email to oppose the massive development that is being proposed at the former Edison plant. This project will hurt the many jobs that are related to the shipping industry and Conley terminal. This would cause more traffic, more delays and shippers will choose to send their cargo elsewhere, where the turnaround time will be quicker. If it becomes more difficult for drivers and shippers to do their business here, our local economy will suffer. I have witnessed the overdevelopment of the area. The traffic has become more dense with every development and the parking for visitors is non-existent. Please consider the local economy, the workers that would be effected by this development, and the neighborhood. Thank you for your time.

Sincerely,
Kate Miller

Sent from my iPhone

Tim Czerwienski <tim.czerwienski@boston.gov>

## Fed up!!

**Erin Milley** [redacted] [redacted] czerwienski@boston.gov> [redacted]

I am so tired of all you people from the government that are coming and destroying our town just to make money. You should all be ashamed of yourselves. My grandparents worked hard to get their property and wanted nothing more than to just pass it down to future generations. The government is trying to take it all away from us when my grandmother died at shy of 101 and still lived at her home at 555 East 6th St South Boston the property was put in a trust so that her 3 daughters and 2 grand daughters would have a place to live. The government hit our family with a $93,000 inherent tax because the property was valued so high. Well that would be fine if we were renting any of the apartments out my mother and two aunts are in their 70's . They can barely get by on SSI and now they had to take out a loan on the property in order to pay the government. All the people who have lived her generation after generation are leaving they can't afford the taxes. It is really sad that my son has NO CHILDREN to play with because there aren't any. What we do have are a bunch of stuck up rich kids thinking that this town is one big frat party. I can't take my son to the beach here because it's like the girls are have naked, and my son is asking "Mommy why don't these girls pick their wedgies". PLEASE FOR THE LOVE OF GOD END IT !!! NO MORE CONDOS !!! NOT AT THE OLD EDISON NOT ANYWHERE ELSE!! HERE US LITTLE PEOPLE!!!!!!! NO MORE CONDOS NO MORE CONDOS NO MORE CONDOS STOP THE MADNESS

Tim Czerwienski <tim.czerwienski@boston.gov>

## Proposed Development of the Boston Edison Plant

Thomas P Moakley [redacted] Thu, Aug 3, 2017 at 9:14 PM
To: tim.czerwienski@boston.gov

Dear Mr. Czerwienski,

I'm writing to you, to ask you, and your colleagues to reconsider the development of the Boston Edison Plant, located in South Boston.

My name is Tom Moakley, ILA Local 809. I fear that the Port of Boston would suffer tremendously, specifically Conley Terminal.

If this site is over developed, it would cause even more gridlock for that area, which it already has.

Thank You,
Thomas P. Moakley

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison Development

Namas Monahan [redacted] Tue, Jul 25, 2017 at 10:09 PM
To: tim.czerwienski@boston.gov

Dear Mr. Czerwienski,

My husband and I own and reside at 1 Onslow Terrace, not far from the proposed Edison development in Southie.

I honestly don't understand the issues that the longshoreman have with the project, so I won't speak to that. My primary concern is related to the demolition, and the fact that a structure that old will be full of heavy metals, such as lead, that shouldn't be permitted contaminate our fresh air if demo is done carelessly.

However, I do support the Edison development . We are sorely lacking in terms of retail in our neighborhood. The Stop & Shop is a terrible grocery store, and East Broadway is basically a shade-less, tree-less stretch of nail salons and empty storefronts. At least two restaurants close soon after lunch (Cranberry Cafe and Boston Bagel), while Starbucks is full every day, from open to close.

I understand traffic is an issue, but it is a current issue, and it will continue to be an issue, regardless of whether the Edison development moves forward or not.

The Edison development is an amazing opportunity to bring much needed retail and social space to City Point without encroaching too deeply into the community.

I truly hope that you will consider that the loudest voices in Southie don't necessarily represent the majority of residents. And I hope that you will support the Edison development in a way that ensures the cleanliness and safety of its environs.

Sincerely,
Namas Monahan

1 Onslow Terrace
Boston, MA 02127
[redacted]

Tim Czerwienski <tim.czerwienski@boston.gov>

# proposed development of 776 summer street

Gail Moran [redacted] Thu, Aug 3, 2017 at 12:51 PM
To: tim.czerwienski@boston.gov
Cc: [redacted]

Dear Mr Czerwienski,

I am a lifelong resident of South Boston, and I am opposed to the planned development of 776 Summer Street (the old Edison plant). I attended the community meeting at the Tynan School in South Boston and was shocked at the size and scope of the plan. South Boston has seen too much overdevelopment in the past few years. There are too many people, too few parking spots and not enough buses for the throngs of people standing at the bus stops every morning waiting to get onto overcrowded buses. We can't handle the 10,000 more cars this project is projected to bring into our neighborhood everyday. I was stuck in traffic on L Street today at 930 am. The streets are already congested.

Also as a member of Local 800 of the International Longshoremen's Association I am concerned that this type of development at this location will adversely affect the Port of Boston. With the increased volume of cars, delivery trucks, etc. that this development will bring, Summer Street will be backed up in both directions, and the tractor trailers trying to get to Conley terminal will also be stuck in this gridlock. One of the reasons the Port of Boston is doing as well as it is and still a viable port is the turn-around time for the truck drivers. Conley is the only full service container terminal in New England and is an important hub in the shipping of many products in the region. If the area becomes too congested, the port could lose business and thousands of jobs would be affected.

I posted the plan on the South Boston Community Bulletin Board on Facebook, and people were very upset about it, citing traffic concerns, environmental concerns and health concerns. Its the wrong location for a project of this size. It's just too much for this neighborhood.

Sincerely,

Gail Moran
814 East 5th Street
South Boston, MA

Tim Czerwienski <tim.czerwienski@boston.gov>

# Boston Edison Project Opposition

Shannon Moran [redacted] Fri, Aug 4, 2017 at 3:57 PM
To: tim.czerwienski@boston.gov

Good Afternoon Tim,

My name is Shannon Moran and I am a member of ILA Local 1066 in the Port of Boston. I am a fourth generation ILA union member and lifelong South Boston resident. I am contacting you regarding the proposed Edison Plant Project to express my strong opposition the project and outline the devastating effects that this will have on both my livelihood and quality of life.

As proposed, the Edison Plant Project will severely damage Conley Terminal and the regional economy. The Port of Boston is the sixth largest employer in the area. It is not just longshoremen that will be directly effected; in fact, over 7,000 people are employed by the Port of Boston.

This project seeks to completely change the landscape that borders our port facilities. Spanning over eight city blocks and including over 1,500 residential units, the project will limit our productivity and operations at Conley Terminal by adding an additional 10,000 – 20,000 cars to an already dense, congested area. Part of what makes the Port of Boston an attractive place to do business is its average turnaround time of 30 minutes. The drivers that directly service Conley Terminal will spend more time navigating traffic gridlock, decreasing their productivity. Shipping lines will begin to pull out of the port because time is money. The domino effects of this project will put 7,000 people in danger of losing their jobs with the Port of Boston.

Another critical reason why the Edison Plant Project cannot move forward is that it will be adjacent to the new haul road that directly services Conley Terminal. This $75 million haul road was created to appease residents of East First Street who complained about the trucks traveling down their street. Undoubtedly, the new residents of these luxury condominiums will voice similar concerns about truck noise, pollution, and the operations that we conduct at our facility day and night, every day of the week, all year long. The opposition of new residents and temporary hotel guests to our port operations is yet another way that this project will jeopardize the livelihoods of over 7,000 people, including mine. This parcel of land should never be rezoned as residential.

Conley Terminal has been making massive investments to expand their operations. In addition to the new $75 million haul road, they are investing $58 million to dredge Boston Harbor and accommodate larger container ships. The Edison Plant Project will be detrimental to these expansion plans and the $4.6 billion that the port generates each year. Due to the port's substantial impact on the regional economy, this land should remain zoned marine industrial.

Finally, on a more personal note, the Edison Plant Project will ruin the quality of life in the place that I call home. As a South Boston resident, I am appalled by the magnitude of this project. The community cannot handle over 10,000 more cars on its streets and thousands of more residents using the MBTA. Redgate-Hilco has failed to propose any meaningful solutions to the permanent influx of cars that this project will create. Additionally, parking is a constant concern in South Boston. The .5 parking spots per unit that these developers have proposed is far less than the 1.5 parking spots required for residential developments. Furthermore, I am worried that this project will impair my ability to do even simple things, like grocery shopping. We have one grocery store in City Point that is already busting at the seams. We simply do not have the capacity to handle this project; the prospect of adding this many more people and cars is untenable.

I have witnessed firsthand the overdevelopment of my neighborhood for close to a decade, but the Edison Plant Project is the most offensive one to date. It threatens both my livelihood and quality of life. I am asking that you take into consideration the devastating, long-lasting effects of this project on both Conley Terminal and the residents of South Boston.

Sincerely,

Shannon Moran

ILA 1066 and Resident of South Boston (179 M Street)

Tim Czerwienski <tim.czerwienski@boston.gov>

# Opposition to The Proposed Development of the Boston Edison Pla nt site

Colleen Moran [redacted] Thu, Aug 3, 2017 at 4:33 PM
To: tim.czerwienski@boston.gov

Hi there,
Hope all is well.
Wanted to write you to formally state my opposition to the proposed development of the Edison Plant site on Summer Street/East 1st Street. This project will affect my life in a multitude of ways but I will go into deeper detail surrounding only two.

1) As a South Boston resident for my entire life, I have seen all of the progress this town has made in terms of gentrification and I am not a typical, bitter "lifer" to complain. I myself am a young urban professional, and make a decent enough living to enjoy the finer things in life such as the new shopping, restaurants and entertainment this town has newly acquired so I do not oppose most things. However, one undeniable fact is that we are getting so overcrowded in this town, a ride that once took 5 minutes has been quadrupled (from one end to the other) and there just simply is not enough space to put all of the cars that this new project would inevitably bring with it. In addition to that, the streets were not built to sustain such traffic during the construction as well as post construction. The once, quiet town of South Boston will turn into madness, something a lot of people will not be able to bare and eventually might have to move away from

2) I am the daughter, sister, granddaughter, and niece of a number of Longshoremen at the Port of Boston in 3 out of the 4 locals. This port has been in service for hundreds of years and is a major port of the New England economy. This project will surely put this port at great risk for shipping companies to go elsewhere due to traffic, time lost (in/out for trucks) and overall shipping complications that this project will undoubtedly create. With that, not only will hundreds of men and women (near and dear to me and many others) be at risk for job loss, but again the New England economy will most likely suffer.

Thank you in advance for your time and consideration. Let me know if you have any questions/concerns about my opposition.
Colleen Moran

--
Colleen Moran
[redacted]

Tim Czerwienski <tim.czerwienski@boston.gov>

# South Boston Arts

Dorothy Morris [redacted] Wed, Aug 2, 2017 at 2:22 PM
To: tim.czerwienski@boston.gov

As a long time member not only of the South Boston Arts Association, but also of its board, I am pleased that Edison is hearing South Boston and other interested artists to provide a home for the arts in South Boston. I believe it is the only section of Boston without a place to call home.
As for myself, the twelve of more years I have been a member of the SBAA have been very fruitful for me. I have had two poetry books published, and have chaired two semiannual neighborhood readings at the South Boston library for anyone who is interested in writing or reading poetry, the elixir of the soul.

I have also visited two schools in South Boston to talk to young students about poetry and have been supportive of all arts and local artists. My sister and I have also taken many art lessons with Dan McCole which have enriched my retirement years immensely and opened my eyes to skills that I never knew I had.

I hope this art interest can grow and spread in the neighborhood with your help.
Thank you.
Dorothy E. Morris

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison Plant Development

Elizabeth Morse [redacted] Tue, Jul 25, 2017 at 12:11 PM
To: tim.czerwienski@boston.gov

Hi Tim,

I'm writing about a few concerns I have about the Edison Plant Development.

- There must be more parking available -- FOR FREE OR A VERY REASONABLE RATE -- so that the limited residential street parking in Southie, specifically the east side, is not taken by visitors or employees of the new development. This means an adequate parking garage open to the public - not just the residents that live there or employees that work there. The amount of people that will live/work in the area demand a higher number of spaces, and on top of that there must be additional visitor spots as well. Planning for under 1,000 is quite frankly, a joke.

- Along the same vein, there MUST be a better public transportation plan for those coming to this new complex. Yes, more buses that are running 7 days a week are necessary. However, there also needs to be non-street transportation available as well. While more buses will be great, they will also add to local traffic. There needs to be an expansion of the subway system so that it will not add to the already congested area.

- This MUST be a clean, environmentally friendly development. It is 2017 and Boston has a chance to be a leader in the low-emissions, green development of the country. We must continue to set an example of how growth can be done RESPONSIBLY.

Thank you for keeping my concerns in mind as development plans continue. I love Southie and think the development could bring some great success to the area. However, I don't want to see it negatively affect us, the residents of South Boston. I lived in Hoboken, NJ, a bedroom community of NYC for many years before moving back home to Boston, and I'd hate to see what happened there, happen here. Boston is so much better than that.

Please don't hesitate to reach out with any questions.

Thanks again,
Elizabeth

Tim Czerwienski <tim.czerwienski@boston.gov>

# plans for the boston edison property

**dan moylan** [redacted] Wed, Aug 2, 2017 at 2:40 PM
To: bostonplanning and development agency <tim.czerwienski@boston.gov>
Cc: dan mccole [redacted]

it is important to south boston that you include arts and culture in the edison plans. please consider favorably the redgate/hilco proposals, and the arts and cultural community center proposal.

j. daniel moylan
[redacted] (cel)
[redacted]

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison plant: POV from a state employee/librarian in Southie.

Jenny Moyryla [redacted] Thu, Jul 27, 2017 at 1:45 PM
To: "tim.czerwienski@boston.gov" <tim.czerwienski@boston.gov>

Dear Tim,

I am a 40 year old librarian. I'm a single person with a single income, I have a Master's degree, and don't drive. I have been living in Boston for 7 years. Perhaps this is not long enough to be considered a local, but it is long enough to have developed some insights and opinions on what it means to be a member of the disappearing middle class in the city of Boston, and in Southie in particular.

ALL of the new developments in South Boston are aimed at the upper and upper middle classes. From expensive resturaunts, to expensive fitness clubs, to bars, to housing. I've looked into what the city considers to be a solution for "Affordable Housing." I DON'T QUALIFY. I'm not poor enough to apply in most cases, but I certainly don't have the income to rent an apartment at market price. Nor do I have the resources to buy a property, because I'm a Librarian in Boston, which means it's next to impossible to build savings.

When I do see emails from the City of Boston Income Restricted Housing Opportunity mailing list, the rentals are typically offered to Area Median Income ranges that don't include me. My salary as a state employee is made publicly available. If you look it up, you'll find it's just over 59k. According to the newest "affordable housing" guidelines set for by the BRA, I should expect to pay half of my salary to rent a studio apartment. However, anything you read regarding financial intelligence will tell you that you should be paying 25-30% at most. See the chart below, which was provided to me last week by the BRA mailing list. According to this, I can only apply for one of five (only five!) studios available in the 110% median income bracket (my AMI is between 80-90%, by the way.) $1,920 is 64% of my monthly take home! Please, please explain to me how this is affordable and what you see as other options when this isn't one. I currently pay over half of my salary to live in a basement in Southie, and it's necessary to have a roommate because studio or 1BR dwellings are beyond my means. At my age, this is not in any way a dignified or comfortable way to live.

Does the city not need or value young educators? What do you have planned for my demographic? I'd like to know. It seems like you're telling me and my well educated colleagues to abandon our posts and pick a different city, because Boston would rather fill its neighborhoods with the wealthy and the things that are attractive to them. Many people wrongly believe it's an option to simply move to "less expensive" Boston neighborhoods. Guess what? They don't exist anymore. If my tone reads as exasperated, that's accurate.

I've taken the time to include all of that to provide some context for my suggestions. They're fairly simple.

1. Your proposal includes 1,588 units of housing. Personally, I'd rather see closer to 2,000, with a reduction to some of the other items. How many of these will be produced and offered as affordable? I would like to see a substantial number of them offered to the Boston workforce, at ALL AMI ranges. This five unit offering, per AMI, per new development is not enough. Please offer at least 25% of your units as Affordable opportunities, with broader inclusion of the 80-90-100% AMI

ranges . The city website states that "most BPDA opportunities are available to households which earn between 70% and 100% of area median income (AMI)." This has not been my experience at all. I have been following this list for two years and have not been able to apply to a single property during that time. Again, the chart below confirms this.

2. South Boston is a bit of a no-man's land when it comes to public transit. Between the addition of GE, Reebok, and Amazon headquarters, plus the upcoming Edison development, we're headed for disaster if some significant changes aren't made. Why isn't there a single bus that travels from South Boston to Columbia point? I currently have to walk 40 minutes to campus, or spend 40 minutes on the bus/train/shuttles. Please add a bus route that travels between or at least through Columbia point destinations and Southie. This would reduce volume on some of the other buses and redline. I take the #9 on W. Broadway, and most days at least one, sometimes two, busses pass it without stopping because they're too full.

3. Please include green space with trees . Your proposal doesn't mention specifically how it plans to incorporate outdoor space for public use on this property. We're constantly losing open lots in Southie to towering condos with nothing green surrounding them. There used to be two trees on my property; this summer they were cut down when the abutting units next to me were gutted and flipped for a high profit. Now all I see is my neighboring buildings and a parking lot. The parks that do exist are too far apart, too small, and sometimes poorly maintained. It's a sad state of affairs when neighbors bemoan the loss of an empty lot that had been previously used for nothing at all or parking, because that's a place where kids rode bikes and dogs pee.

Thanks for your time. Feel free to send me any follow up questions you might have.

Kindly,

Jenny Moyryla, MLIS.

--

Instructional Services Librarian | Healey Library at UMass Boston | e: [redacted] | p: [redacted]

# AFFORDABLE HOUSING OPPORTUNITY

## THE BE VERLY

101 Beverly Street, Boston MA 02114

43 Low Income Restricted Units and 23 Moderate Income Restricted Units

| # of Units | Type | Rent* | HH Size | % Income |
|---|---|---|---|---|
| 1 | Studio | $673 | 1-2 | 40% |
| | | | | |

| | | | | |
|---|---|---|---|---|
| 10 | Studio | $854 | 1-2 | 50% |
| 5 | Studio | $1,940 | 1-2 | 110% |
| 1 | 1 br | $706 | 1-2 | 40% |
| 3 | 1 br | $900 | 1-2 | 50% |
| 14 | 1 br | $2,063 | 1-2 | 110% |
| 1 | 2 br | $844 | 1-4 | 40% |
| 23 | 2 br | $1,077 | 1-4 | 50% |
| 2 | 2 br | $2,473 | 1-4 | 110% |
| 4 | 3 br | $1,240 | 1-6 | 50% |
| 2 | 3 br | $2,853 | 1-6 | 110% |

*Additionally, 5 units are reserved for referrals from HomeStart.*

| Household Size | 40% of median income | 50% of median income | 110%of median income |
|---|---|---|---|
| 1 person | $28,960 | $36,200 | $79,640 |
| 2 persons | $33,120 | $41,400 | $91,080 |
| 3 persons | $37,240 | $46,550 | $102,410 |
| 4 persons | $41,360 | $51,700 | $113,740 |
| 5 persons | $44,680 | $55,850 | $122,870 |
| 6 persons | $48,000 | $60,000 | $132,000 |

**Maximum Income Per Household Size***

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison plant project

Gary Murad [redacted] Fri, Aug 4, 2017 at 2:20 PM
To: tim.czerwienski@boston.gov

I am a South Boston resident. 147 B At #3. I am opposed to this project as currently designed. It is too big, too dense, and will cause an undue burden to our already overburdened community and negative impact the quality of life for our residents via greatly increased traffic and add to an already extremely overburdened mass transit system. It also does not offer enough in regards to community open space.

Sincerely, Gary Murad

Tim Czerwienski <tim.czerwienski@boston.gov>

# Arts Cen ter at the new Edison development site

**Maureen Murphy** [redacted] Wed, Aug 2, 2017 at 1:53 PM
Reply-To: Maureen Murphy [redacted]
To: tim.czerwienski@boston.gov

If not now ... when? I live in South Boston and am a member of the South Boston Arts Association.. I am also a member of the Quincy Art Assocition and the united South End Artists... we have tried in the past to get an arts/cultural center in Southie, (old Station D for one) and for one reason or another have not succeeded..Can we try again to add a bit more culture to this section of the city! I , for one, can not undersand why these other two coummunities and Fort Point , another example, can have such vibrant , active arts communites and South Boston can not seem to manage it... Please include one in this new development.I
Thank you
Maureen Murphy
W 9th St.

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison Plant Development

Shelby Nelson [redacted] Tue, Jul 25, 2017 at 12:42 PM
To: tim.czerwienski@boston.gov

Hi Tim,

I am writing to express that I do not support the current proposal of 1,588 residential units. I also do not support buildings as tall as 200 feet in South Boston, on the water. With only 987 underground parking spaces, the lack of parking and traffic impact of this property is going to be detrimental to the area.

Best,
Shelby
616 E 4th St, South Boston MA
[redacted]

Tim Czerwienski <tim.czerwienski@boston.gov>

# (no subject)

Gmail [redacted] Tue, Jul 25, 2017 at 10:51 PM
To: tim.czerwienski@boston.gov

Hello Tim
My name is Meaghan Newhall i am a life long south Boston Resident and homeowner and wanted to reach out re: proposed project for the space where the Edison is. As you know southie isn't that big of place and as it is we are crammed for space and often trapped in local traffic due to over building / over populating this small area, as well as the endless construction and their accompanying detours etc. the lack of parking, lack of consistent mbta service / availability and overall feeling of being cramped really negatively impacts that quality of life in south boston - 5 generations of my family lived and raised children here. I have 2 children of my own I would like to raise here however if this endless construction is allowed to continue including adding another 1500 condo units at the Edison remaining in south boston may become less appealing
Please consider the impact on the quality of life of the current residents of south boston before allowing this project to continue
Respectfully
Meaghan

Sent from my iPhone

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison

[redacted] Thu, Aug 3, 2017 at 6:59 PM
To: tim.czerwienski@boston.gov

Good Afternoon Tim,

I am a lifelong resident of South Boston and live just two blocks away from the Edison plant with my growing family. I am 100% against all plans for residential and commercial development on that site. The area should stay a working port.

South Boston is crowded enough and we do not need anymore residents or cars, nevermind a project of this mammoth proportion. Our neighborhood can't handle 3,000 more people. Crowds of 100 people wait at bus stops for crowded busses to drive past them every morning. Residents can't leave their homes after 5:00 pm because there are no parking spaces available after that time. We are surrounded by constant construction and BWSC ripping up our streets for months at a time. We are experiencing power outages because the old systems can't handle the demand being placed on them by all the new condos. Our historical homes have been ripped down and replaced with characterless, gigantic condo buildings.

We have had enough! We need to put a stop to the overdevelopment of South Boston. Single homes need to stop being ripped down and replaced with ugly 20 unit condo buildings. We need 24/7 resident parking in the entire neighborhood. Historical homes need to be protected.

The neighborhood needs to become more family friendly - we desperately need housing that is affordable for average income families! Growing families are forced to move out because they can't afford a place to live that has three bedrooms.

The people of South Boston have had enough with overdevelopment of our beloved neighborhood, and we will no longer allow it to happen. I am a part of a large number of residents that will do whatever is necessary to stop any development of the Edison plant location.

Please feel free to contact me with any questions.
Sent from my iPhone

Tim Czerwienski <tim.czerwienski@boston.gov>

# Boston Edison Plant

Paul Noonan [redacted] Fri, Aug 4, 2017 at 6:26 AM
To: tim.czerwienski@boston.gov

Tim,

I am writing to express my objection to the proposal to develop the Boston Edison plant site. Another major project in that area is only going to cause more chaos for South Boston and the waterfront. Look, I get it, Boston wants to be a player on the national stage. In many ways, the city has done a good job. The waterfront definitely has a new life to it. That doesn't mean every square inch of it needs to be occupied by stores, restaurants, and condos. Southie is already enough of a mess. The parking situation has yet to get better even though developers always promise to include parking elements that will alleviate the pressure. It hasn't been true yet, and it won't be true with this project. Part of the allure of Boston, in my eyes, has always been it's status as a small, but impactful city. It's location, it's history, it's mix of bright minds and some brawn, have made it a city with some true character. The overdevelopment of the city is rapidly ruining that. Traffic has already offset the benefits of the Big Dig. The development of the southern part of the city has already cluttered it, and changed the dynamic. We don't need to exacerbate it.

Add to that the inevitable problems that are going to come from a commerce standpoint. That area is vital to shipping. Already, thanks to the terrible parking situation and increased traffic, trucks and buses are having a harder time navigating East First Street. You really want to add thousands more people to that chaos? Furthermore, how long before residents there gripe about the trucks and Conley Terminal? How long before the constant airplane noise overhead has them clamoring for the travel industry to adjust to them?

Southie, and Boston as a whole, are overdeveloped already. We need to stop trying to squeeze more living quarters into every space, and worry more about infrastructure and the general health of the city. Boston has made itself a great, modern city, but it's now starting to teeter over to becoming a burdensome metropolis. Projects like these are major reasons why. Enough is enough.

Paul M. Noonan

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison Plant Development

Michael Norman [redacted] Wed, Jul 26, 2017 at 9:50 PM
To: tim.czerwienski@boston.gov

Just wanted to lend my voice to the "pro" development plan group.

I've lived in Southie for 12 years. I own here. I'm raising a family here.

I believe that this development brings necessary housing to our city. I also happen to believe that the density described is appropriate considering the fact that we do live in a city, not a small town.

There are concerns, mostly around transportation, but if the city can't figure that out, there's a larger problem.

Thanks,
Mike Norman

Tim Czerwienski <tim.czerwienski@boston.gov>

# Boston Edison plant development

Dan [redacted] Fri, Aug 4, 2017 at 1:49 PM
To: tim.czerwienski@boston.gov

Dear Tim,
I'm writing to voice my opposition of the Boston Edison plant in South Boston.
I'm a longshoreman that works at Conley terminal and the Flynn cruise port. Development of that site would be detrimental to the port of Boston. The economic impact of those terminals to the area is immense and putting living space on that site would hurt the port. Massport is investing lots of money in the port to expand and create well paying jobs, as well as make Boston an attractive place to do business for shipping lines and businesses around the world. This in turn would help support all the jobs that the port currently provides.
In concluding I hope the BRA chooses to stop the development of the site and take into account the tens of thousands of jobs it would hurt.

Sincerely,
Daniel O'Brien

Tim Czerwienski <tim.czerwienski@boston.gov>

# 776 Summer Street/Edison Project

Sean/Patty OConnell [redacted] Thu, Aug 3, 2017 at 2:14 PM
To: tim.czerwienski@boston.gov

My family is against this enormous project. We believe this project is too much for the area and will cause MAJOR traffic/parking issues. Think about quality of life over the almighty dollar for once!!

Tim Czerwienski <tim.czerwienski@boston.gov>

# Proposed Development of the Boston Edison Plant Site

ed o'keefe [redacted] Thu, Aug 3, 2017 at 4:16 PM
To: "tim.czerwienski@boston.gov" <tim.czerwienski@boston.gov>

Mr. Czerwienski, my name is Edward O'keefe and I am a 4th generation Longshoremen Checker from ILA Local 1066. I am writing in opposition to the planning and conceptual planning of the proposed development of the Boston Edison Plant site. The Massport Conley terminal has been redeveloping and expanding it's yard space for the larger business volume we have experiencing, due to the bigger container ships that have been coming to Conley due to the harbor drudging that has been going on in the past couple years. Please consider the larger growth and come back of our Boston and New England economy. The infrastructure of the condominiums and hotel don't even scratch the surface of what the stimulus of Massport's expansion will do for our city. Please reconsider this proposal and encroachment on our livelihood.

Respectfully submitted

Ed O'Keefe

Tim Czerwienski <tim.czerwienski@boston.gov>

# 776 Summer Street (Edison Plant) comment period ends August 4

O'Toole, John [redacted] Wed, Aug 2, 2017 at 3:33 PM
To: Tim Czerwienski <tim.czerwienski@boston.gov>

Tim a regarding the Edison Plant Parcel as a Life Long resident of South Boston I want to voice my strong opposion to the current proposal that HILCO/ Redgate has presented to the South Boston Neighborhood for consideraon.

There is so much wrong with this proposal not sure where to start .

Below is a paral list of my concerns:

My first concern is the outrageous proposal for 1,500 rental / condo units , hotel, restaurant , stores and other small businesses and the esma ted 8,000 to 10,000 ( greatly underesma ted by Hilco) car trips a day that would result from this high density project.

This does not include the addional tr affic for business deliveries, FED X, UPS , US Mail, Amazon , Pea Pod, takeout food deliveries etc.

Currently the traffic at the intersecon of L & Fir st Street is already well beyond its intended capacity. It is one of the most congested areas in all of South Boston / Boston adding 10,000 + trips a day would result in total grid lock.

Even before this project comes on line the traffic situaon is g oing get considerable worse when the Massport Haul road traffic lights are brought on line. Not to menon the pr esumed need for another set of traffic lights at M & First if this project is approved in this current form.

Secondly the proposed 968 parking spots for such a large project cannot be based on any realisc minimum requirements for such a vast project.

It is as if the developers A , don't care about the negav e impact this would have on our community B , assume we are not smart enough to figure out how ridiculous this proposal is and we would just sign off or C, Hilco doesn't really know what the negav e impact this ill-conceived project would have on our community.

Sadly a. er having gone to 8 meengs I no w believe that Hilco's disregard of our neighborhood is based heavily on opons A and B abo ve.

Often asked but never answered ques on at theses mee ng is "Where are the results of the traffic, environmental, noise, shadowing impact studies" ?

I have to assume they were not done or the results would indicate how great the nega ve impact would be they chose not to publish them.

Ini ally I went into these mee ng hoping to work with Hilco towards a mutually beneficial project but Hilco never made an honest effort to work with the community.

The "charre es " were more of a feel good exercise rather than lets work together process.

I think Hilco/ Redgate has been very disingenuous in its outreach to the South Boston Community.

The housing units allowed should be in the 500 range with at least 1.8 parking spots per unit.

Addi onal parking should also be built for the hotel , restaurant and other business as well .

I am sure I will have addi onal comments before the August 4 th deadline.

No serious discussion should take place before Hilco comes back with a reasonable proposal and we can work together to a mutually beneficial plan.

Sincerely,

John O'Toole



Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison plant

Rose O'Toole [redacted] Fri, Aug 4, 2017 at 1:03 PM
To: tim.czerwienski@boston.gov

To whom it may concern,
I completely oppose this project that would create a preposterous amount of people and traffic in this area of South Boston. The amount of development that the city of Boston has allowed in Southie has been ridiculous. An environmentalist that I spoke with from Sweden deemed Boston the worst urban planning she has ever witnessed . No Green Space at all ! Not even when you had the chance to ! All for the all mighty dollar . Every space taken up with more concrete and mortar . Just more ugly buildings and more money for the developers who don't care how it impacts a neighborhood . I doubt this request will be heard but I have to say it anyway . Please don't proceed with those plans that will absolutely overpopulate , create massive traffic jams and cause more pollution to a neighborhood that is busting at the seams .
Sincerely,
Rose O'Toole
149 M St
South Boston

Sent from my iPhone

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison Plant site.

Joseph Picard [redacted] Thu, Aug 3, 2017 at 10:41 PM
To: "tim.czerwienski@boston.gov" <tim.czerwienski@boston.gov>

Dear Mr. Czerwienski

My name is Joe Picard I live at 42 Gates Street in South Boston I am a life time resident of 63 years. I am against this project. Our streets are so congested now with all the new construction, you can't find a parking spot if you get home after 6:00pm and to add 1,500 more units and a hotel what is the BPDA thinking. This is a great community and we don't need 1,500 more units and thousands of more cars on the streets driving and parking. It will also hurt a shipping port with about a 1,000 truck drivers weekly coming and going in and out of Conley terminal. It is just a bad idea. If you lived here you would feel the same way.

Thank you Joe Picard

Tim Czerwienski <tim.czerwienski@boston.gov>

# Opposition to the Edison Project in South Boston

Taryn Powers [redacted] Thu, Aug 3, 2017 at 4:03 PM
To: "tim.czerwienski@boston.gov" <tim.czerwienski@boston.gov>

Good Afternoon Tim,

I am a lifelong resident of South Boston and live just two blocks away from the Edison plant with my growing family. I am 100% against all plans for residential, and commercial development on that site. The area should stay a working port.

South Boston is crowded enough and we do not need anymore residents or cars, nevermind a project of this mammoth proportion. Our neighborhood can't handle 3,000 more people. Crowds of 100 people wait at bus stops for crowded busses to drive past them every morning. Residents can't leave their homes after 5:00 pm because there are no parking spaces available after that time. We are surrounded by constant construction and BWSC ripping up our streets for months at a time. We are experiencing power outages because the old systems can't handle the demand being placed on them by all the new condos. Our historical homes have been ripped down and replaced with characterless, gigantic condo buildings.

We have had enough! We need to put a stop to the overdevelopment of South Boston. Single homes need to stop being ripped down and replaced with ugly 20 unit condo buildings. We need 24/7 resident parking in the entire neighborhood. Historical homes need to be protected.

The neighborhood needs to become more family friendly - we desperately need housing that is affordable for average income families! Growing families are forced to move out because they can't afford a place to live that has three bedrooms.

The people of South Boston have had enough with overdevelopment of our beloved neighborhood, and we will no longer allow it to happen. I am a part of a large number of residents that will do whatever is necessary to stop any development of the Edison plant location.

Please feel free to contact me with any questions.

Thank you,

Taryn & Stephen Powers
--
Taryn B. Powers [redacted]

Tim Czerwienski <tim.czerwienski@boston.gov>

# Boston Edison site

**Stephanie Pyne** [redacted] Thu, Aug 3, 2017 at 12:53 PM
Reply-To: Stephanie Pyne [redacted]
To: "tim.czerwienski@boston.gov" <tim.czerwienski@boston.gov>

Hi...
I'm an ILA Member, Robert Pyne (working as a Longshoreman), I am against the proposal of developing the Boston Edison site.

My job will be afffected in many ways along with Truckers, Shipping Companies and Retail personnel... I hope my voice will be heard.

Robert Pyne

Tim Czerwienski <tim.czerwienski@boston.gov>

## Boston Edison Site

**Stephanie Pyne** [redacted] Thu, Aug 3, 2017 at 12:59 PM
Reply-To: Stephanie Pyne [redacted]
To: "tim.czerwienski@boston.gov" <tim.czerwienski@boston.gov>

Hi....

My name is Stephanie Pyne, I am a wife of a Longshoreman. I am very concerned about the Boston Edison Site and the proposal I've read about. I am AGAINST this project for reasons that my husbands job will be limited.

I would appreciate my input would be considered... Thank You

Stephanie Pyne

Tim Czerwienski <tim.czerwienski@boston.gov>

# 776 Summer Street Development

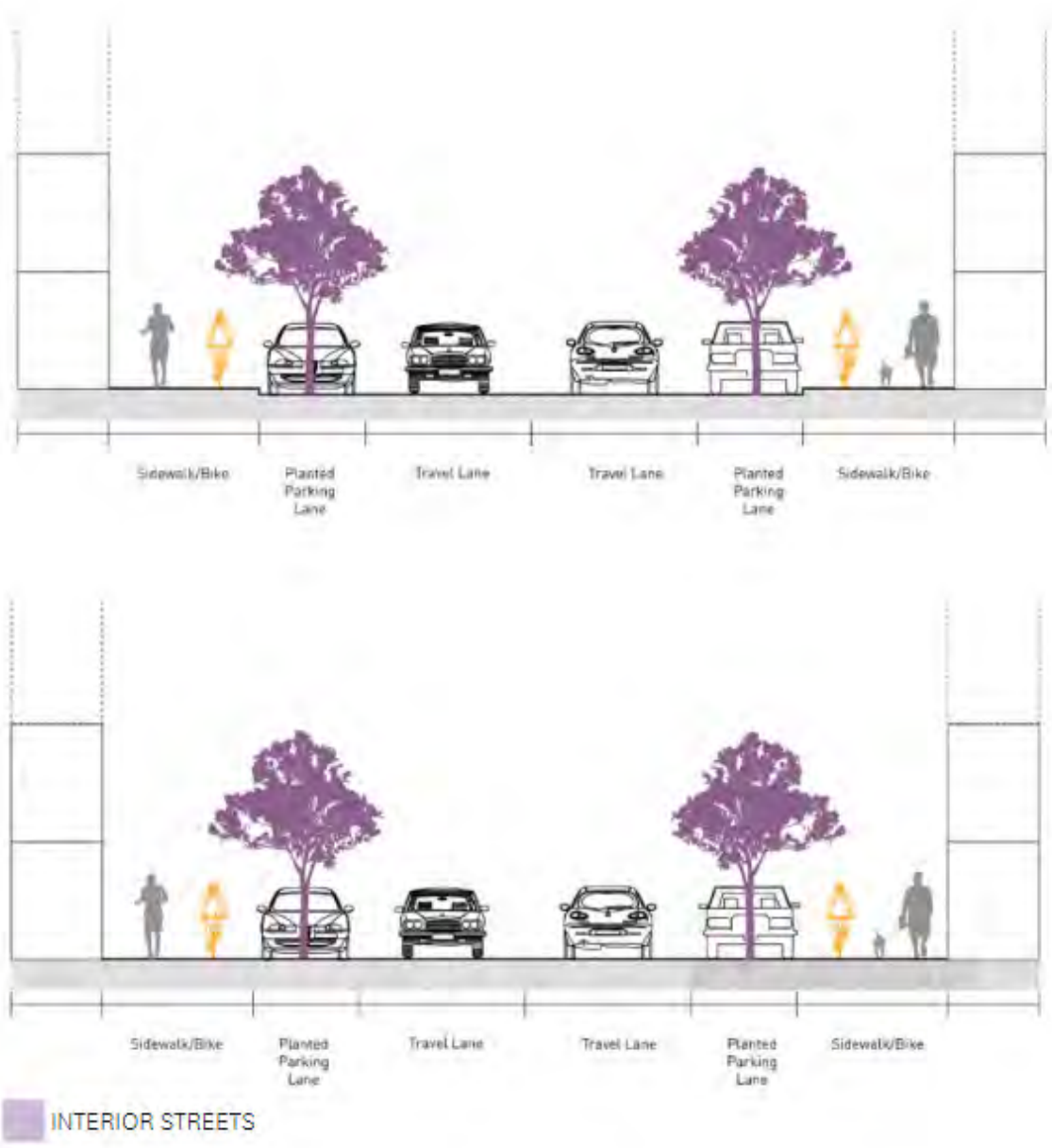
Jon Ramos [redacted] Tue, Jul 25, 2017 at 4:15 PM
To: tim.czerwienski@boston.gov
Cc: Becca Wolfson [redacted], Doug Johnson [redacted]>, Stefanie Seskin <stefanie.seskin@boston.gov>

Dear Tim,

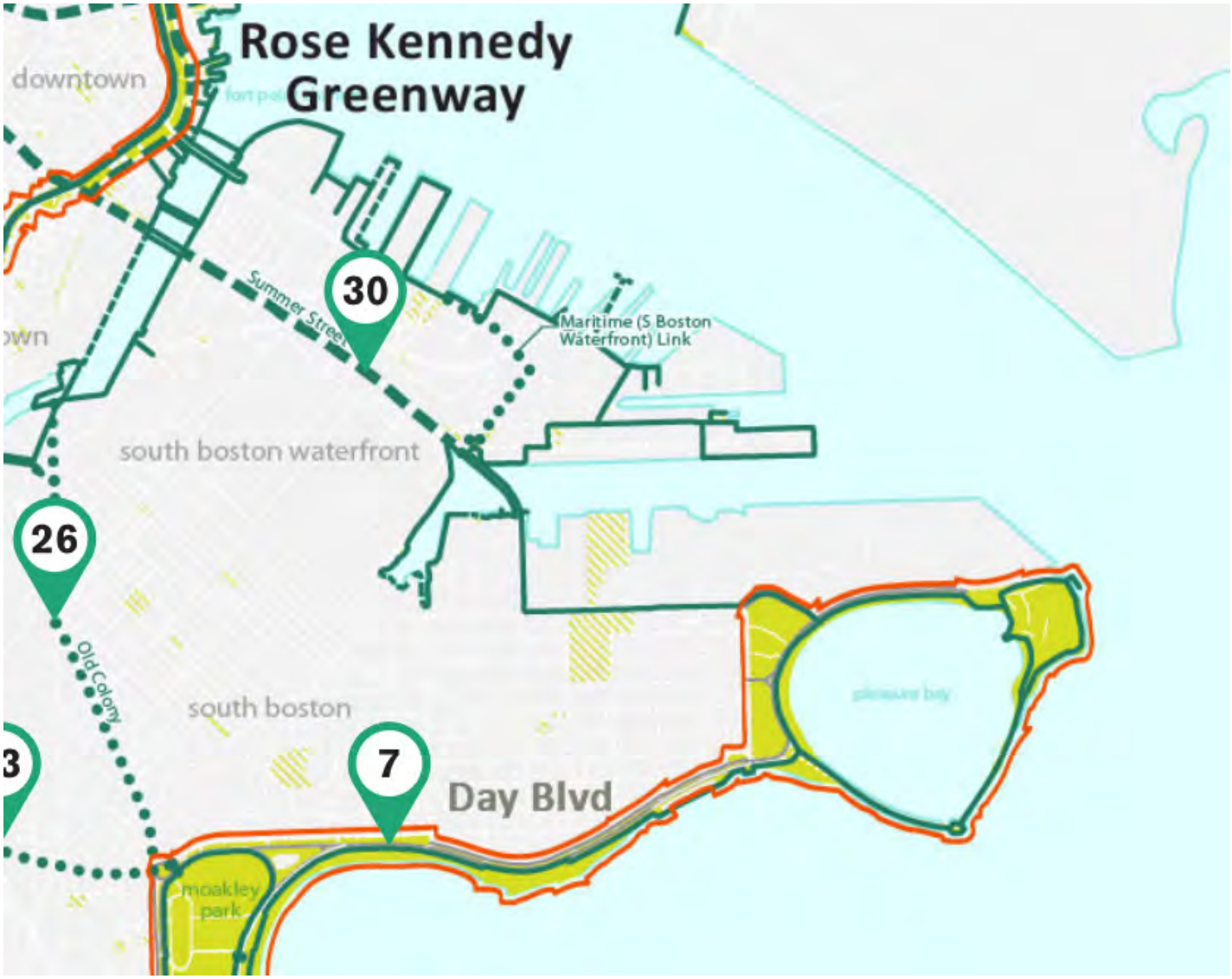
I am writing today to offer my comments regarding the 776 Summer Street Development at the former Edison Power Plant in South Boston.

To start, I am pleased to see language included in the PNF regarding design considerations from the point of view of the pedestrian realm. I am also very happy to see that Complete Streets Guidelines are included in the PNF, especially as it relates to the abutting roadways of Summer Street, & East First Street, both are challenging / uncomfortable roads for people who walk and bike, and both are streets that could most certainly benefit from additional street plantings and green infrastructure.

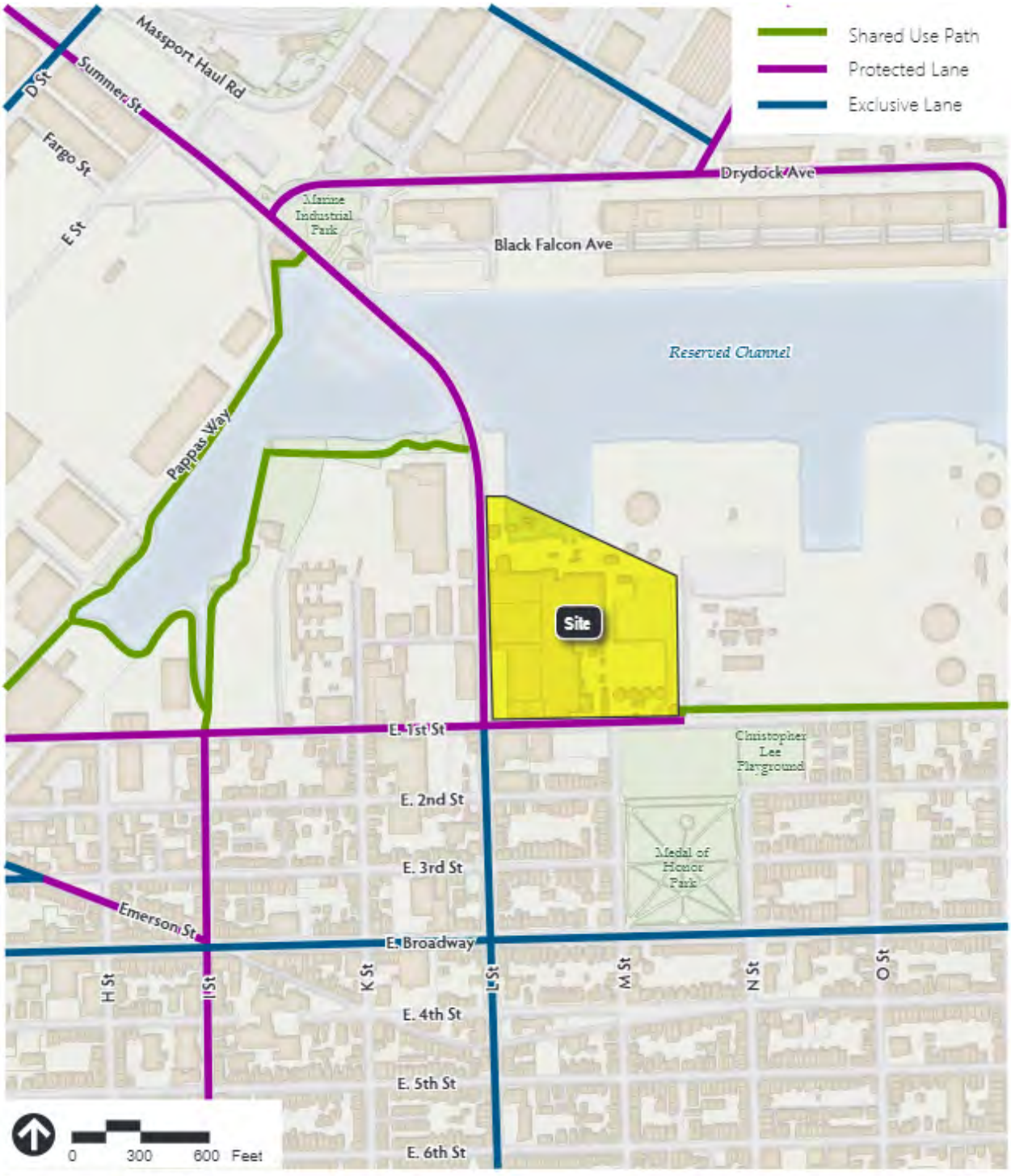
I like that the interior streets appear to have bike infrastructure that is physically separated from the motor vehicle lanes. However, I would like to see the sidewalks & bike lanes be separated as well. In business districts, bikes are not allowed to be ridden sidewalks (MA State Law) and since this is planned to be a retail / commercial area the bike lanes should not be shared sidewalk space. Additionally, the sidewalk appears narrow. I urge the transportation planners to rethink how the bike / ped space is designed, while preserving the separation between bikes & cars.




For the roads surrounding the enormous site, I would like to see the developer contribute the funds necessary to build high quality sidewalks, and separated bicycle lanes. Ideally the bicycle facilities would be for the entire length of Summer Street and East First Street, both of these roads are part of the "Boston Green Links" program, and included in the GoBoston 2030 action plan (page 171).




Boston has committed to the addition of a protected bike lane (cycletrack) the length of Summer Street as a "priority project" as described in the GoBoston 2030 plan as well as described on section 5.7.1 of the PNF. Protected bike lanes here will likely increase bicycle ridership significantly through this area, so I would like to urge the design team to plan vehicular drop-off & pickup locations with the expectation that there will be many more people biking through this area than there are currently. We want to avoid conflicts between drivers & cyclists.




Source: Boston Planning & Development Agency

vhb Figure 5.2

Boston 5-Year Bicycle Network Plan

A project of this size & scale will have a tremendous impact on the neighborhood. I am in favor of this project and I feel that it will liven up this otherwise isolated & lonely corner of South Boston. With the influx of additional people visiting here as a destination, I would like the City of Boston to help mitigate the traffic (& air pollution caused by traffic) by prioritizing public transportation options, and provide people with high quality, reliable, and affordable options for coming to South Boston.

Thank you,
Jon Ramos
South Boston Resident

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison Plant Development-South Boston, MA

Kathleen Reardon [redacted] Thu, Aug 3, 2017 at 9:47 PM
To: tim.czerwienski@boston.gov

Dear Mr. Czerwiekski,

I am writing to you this evening to let you know that I oppose the development of 1500+ condos in the Edison plant's neighborhood, of South Boston, MA. Being a resident of this city for 33 years I have seen this city become more and more developed and more and more populated. Due to the location of my job, I commute to, and from downtown Boston every day. With that being said, traffic has become a burden and headache over the last 5 years due to the already over developed and heavily dense Seaport district. I write to ask that this plan be reconsidered. If this plan is to move forward, it's said that 10,000-20,000 more people will be in the area on a daily basis. There is simply no room for any more vehicles, buses, or people in that particular area of L and First Street. This will do nothing but make that area even more over populated than it already is, causing more of a bigger burden on the current residents and commuters of Boston. Please take this as my opposition to the Edison Plant project. Thank you for your time.

Sincerely,
Kathleen Reardon

Sent from my iPhone

Tim Czerwienski <tim.czerwienski@boston.gov>

# Re zoning of old Edison plant

EDWARD REAVEY [redacted] Fri, Aug 4, 2017 at 1:31 PM
To: tim.czerwienski@boston.gov

I am writing to ask that you not allow this project. The area is already overdeveloped and this project would constitute the last back hoe of dirt forever burying the character and use of this area, it would be devastating to the community.

Ed Reavey

Tim Czerwienski <tim.czerwienski@boston.gov>

# Old Edison plant development

Mary Reilly [redacted] Thu, Aug 3, 2017 at 5:01 PM
To: tim.czerwienski@boston.gov

Dear Tim, I strongly oppose the development of the Edison plant. South Boston is already over populated. Keep it for maritime use only. Thank you, Mary T. Reilly

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison Plant Development

Caitlin Sanchez [redacted] Tue, Jul 25, 2017 at 3:40 PM
To: tim.czerwienski@boston.gov

As six year resident and home owner, my main concern for this development is the lack of parking. South Boston is already a war zone for parking and this project will make the situation so much worse. I support the hotel, but not the residences if there is not enough parking for all.

Thank you,
--
Caitlin Sanchez
p.[redacted]

Tim Czerwienski <tim.czerwienski@boston.gov>

# Opposition T o The Proposed Rezoning of the Edison Plant

Unity [redacted] Thu, Aug 3, 2017 at 8:41 PM
To: tim.czerwienski@boston.gov

Greetings,

I will keep this short and sweet, as hopefully you'll be getting many messages if this type. I'm writing to oppose the Rezoning of the old Boston Edison plant in South Boston. I've read developers want to build huge monstrosities there and more condos in an already overcrowded neighborhood. Please do not let this pass. The last thing Southie needs is more condos.

Thank you very much for your attention to this matter.

Johna Shaffer
Fourth generation South Boston resident

Tim Czerwienski <tim.czerwienski@boston.gov>

# arts

PJScuffles [redacted] Wed, Aug 2, 2017 at 11:55 AM
To: tim.czerwienski@boston.gov

Dear Tim,
Dan McCole speaks for me when it comes to community art projects. Please consider that many of us do not make a living from the arts but consider ourselves artists. Arts improve every culture. The Edison project will hopefully make room for us. Sincerely, Pete Schofield

Tim Czerwienski <tim.czerwienski@boston.gov>

# edison

Suzanne Schultz [redacted] Thu, Aug 3, 2017 at 7:34 AM
To: tim.czerwienski@boston.gov

Dear Tim,

I have sat in at multiple meetings for plans for the Edison Building.

This community will benefit greatly to have it used for Arts and Culture, I support this !

Please consider going forward with the proposal for The Arts and Culture proposal to move forward .

Thank you

Suzanne Schultz

Canvas Fine Arts

516 East Second Street

**Tim Czerwienski <tim.czerwienski@boston.gov>**

# Edison redevelopment project

**Melinda Seifert** [redacted] Sun, Jul 30, 2017 at 7:51 PM
To: tim.czerwienski@boston.gov

Hi. I'm a 20 year resident of South Boston and I'm very happy to see all the changes over the years. I've recently open up an office at 88 Black Fallon and most of my new hires will come from South Boston and the south shore. I'm concern that the traffic is going to be a big issue for those who need to commute by car since there aren't any busses from South Boston direct to the the dry dock or black falcon area. Any plans to create new bus routes or address the traffic in that area?
Regards,

Sent from my iPhone
Melinda Seifert
Director of the Americas &
Canada
The Qt Company
(O) [redacted]
(C) [redacted]

Tim Czerwienski <tim.czerwienski@boston.gov>

# South Boston Condo proposal

Kathleen Shea [redacted] Fri, Aug 4, 2017 at 7:35 AM
To: tim.czerwienski@boston.gov

Hi my name is Kathleen Shea and I am a member of the Longshoreman Union local 800, I am writing with concerns about the proposal of a new development that will run alongside of the new Haul Rd that was recently constructed for the trucks to get in & out of Conley Terminal. It has been brought to our attention that the plans are to develop along that road with 1500 or so condominiums & a storefront shopping area, which will cause more congestion and parking problems to the area, which is already a congested as it is.. and will delay trucks coming in & out of the Terminal, which will in turn cause the work at Conley Terminal to be delayed.. The shipping lines that come in & out of Conley are on a time line to get in and out in a timely manner and if they are held up then that would greatly affect productivity in the Terminal, not to mention jeopardize many jobs for many people.. Our Terminals, at Conley & Flynn Black Falcon produce a tremendous amount of revenue for the state, as I'm sure you know.. Please protect the productivity and employment at Conley.. If we don't it could be a major drop in the revenue coming into our City and as I said cause the loss of many jobs and affect many families that make their living at Conley & Flynn Terminal.. I hope you take these important issues into consideration when you are making your decision.. South Boston is a great community, which is already over contested, the neighborhoods would not benefit from more traffic, and people trying to live in an already crowded area... Thank you for your time. I pray that our jobs & community will not be in jeapody.. Sincerely Kathleen Shea Longshoreman Local 800..

Sent from my iPhone

Tim Czerwienski <tim.czerwienski@boston.gov>

# Fwd: Is Boston' s building boom overwhelming streets and transit?

Nancy Sheehy [redacted] Thu, Jul 27, 2017 at 6:31 PM
To: tim.czerwienski@boston.gov
Cc: [redacted]

Hello Tim,

I understand you are the contact for the Boston Edison Project.

I own a couple homes in South Boston and am VERY concerned about the current proposed Edison project. (1588 new units, 7 new buildings, a hotel, 987 parking spots).
I do not support this project. My reasons are:

1) 1588 units and a hotel AND ONLY 987 Parking spots. Do the math, that does NOT ADD UP.

2) South Boston (and the Seaport/Leather District/Downtown) does not have any infrastructure to accommodate traffic TODAY never mind with 10,000 more vehicles every day, plus guests. It is wishful thinking people wont have cars (per the article). With NO Public transportation, how are people to move around?
(Only public transportation is an unreliable MBTA bus that is full every morning).

3) What are the health concerns for the land, property and neighborhood? I would like to see this study in advance what our health concerns are for the current tax payers in the neighborhood.

4) With the addition of new residents, what will the tax implications be? Are there more police and fire on duty? Additional Schools???

5) Additional 10,000 people. (Minimum). For comparison, the Town of Westin, MA has a population of 11,000 and is 11,070 acres. (Average 1 per son per acre). This plan proposes 10,000 for 15 acres. (Average 667 people per acre)

South Boston is overcrowded today with NO Transportation Infrastructure. Address the infrastructure and health concerns FIRST. If appropriate, then move forward with a proposal.

Regards,
Nancy Sheehy
Owner - 9 M Street, South Boston and 797 East Broadway, South Boston

Sent from my iPad

Begin forwarded message:

From: BostonGlobe.com [mailto:newsletters=bostonglobe.com@mail20.wdc01.mcdlv.net] On Behalf Of BostonGlobe.com
Sent: Thursday, July 27, 2017 4:23 PM
To: Sheehy, Nancy [DPYUS] [redacted]
Subject: [EXTERNAL] Is Boston's building boom overwhelming streets and transit?

Tim Czerwienski <tim.czerwienski@boston.gov>

# Feedback Related to Edison Plan Proposal

Diane Smith [redacted] Fri, Aug 4, 2017 at 6:55 PM
To: Tim.Czerwienski@boston.gov, Lisa.Engler@state.ma
Cc: Nick.Collins@mahouse.gov, MichaelF.Flaherty@boston.gov, Linda.DorcenaForry@masenate.gov

August 4, 2017

Mr. Czerwienski and Ms. Engler:

I am providing the following comments and feedback in response to the Edison Plant Proposal.

As a resident of South Boston, I am very concerned about the feasibility of the proposed development submitted by Redgate Capital Partners and Hilco Redevelopment Partners. The area and South Boston community cannot accommodate such a proposal for many reasons. Although many of the problems associated with the proposed development have probably been identified to both of you, listed below are the ones that most concern me.

--The addition of up to 10,000 to 20,000 more vehicle trips per day, The traffic in South Boston is already untenable. For example, at times it takes 30-45 minutes just to leave South Boston. It just doesn't make sense to add any additional vehicle trips per day.

--The density of the proposed project does not fit in the neighborhood of the Edison Plant. The project mimics that of the Seaport District with its tall buildings in congested locations. As you know, the subject proposal consists of adding 1500 residential units, a hotel, 339,000 square feet of office space, 68,000 square feet of retail space, restaurants and 1.5 acres of open space. (The small open space will look out over the new bridge being finished for the trucks arriving to and from the Connolly Terminal!!) The proposal basically proposes a mini-Seaport District which does not belong in the area. As an aside, what is also a problem is the proposal to only allot 1/2 parking spot per residential unit!! South Boston already does not have enough parking spaces for residents. The only way to minimize the amount of parking in any new development is to only allow residents to live there if they don't own a car (!), allot 2 parking spots per residential unit, and/or include additional parking in a parking lot.

--The Edison Plant is in the Designated Port Area and a hotel and housing is prohibited on the site. It was designated that way for a reason. There should be no waivers to the Designated Port Area requirements.

--The heights of the proposed buildings do not fit in with the adjacent residential neighborhood. The South Boston neighborhood is already being ruined with new developments, especially with tall buildings near Broadway Station and eventually near Andrew Square. The Seaport District already consists off basically just tall high rise buildings. When is enough going to be enough?

Overall, the idea that such a project would be allowed at the Edison Plant location does not make sense and should not be allowed. Whatever agreement was made with the developer should be terminated.

Thank you in advance for providing me with the opportunity to comment.

Diane Smith

Tim Czerwienski <tim.czerwienski@boston.gov>

# Comments on Edison Plant development

Chris Soule [redacted] Fri, Aug 4, 2017 at 9:28 AM
To: Tim Czerwienski <tim.czerwienski@boston.gov>

Hi Tim,
My input to the proposed development is as follows:
1. The Boston transportation department needs to analyze the traffic flows around the sight, specifically at L St. to alleviate existing gridlock traffic patterns.
2. Public transportation needs to be expanded.
3. Accommodations for a 1,000 seat auditorium/arts center/community space needs to be incorporated into the design as mitigation for the density that the project proposes
Thanks,
Chris Soule - Resident
402 E. Eight St.
S. Boston

Tim Czerwienski <tim.czerwienski@boston.gov>

# 776 Summer Street - Edison Power plant

Michael Stavrakos [redacted] Wed, Jul 26, 2017 at 10:43 AM
To: tim.czerwienski@boston.gov

987 underground parking spaces are not sufficient with the proposed residential, commercial, and hotel units proposed. Parking is already an issue with resident parking every night (cannot have a guest visit) and with 1-2 cars per unit this will make parking even more of a nightmare. If underground parking is not feasible, a parking structure/garage is a must!

-City Point Resident

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison Plant

Patricia Steiner [redacted] Wed, Aug 2, 2017 at 12:45 PM
To: "tim.czerwienski@boston.gov" <tim.czerwienski@boston.gov>

I hope the redevelopment of this property will include a space to create and showcase the visual, musical and dramatic arts. I think it would be a cultural and financial boon to the area.

Tim Czerwienski <tim.czerwienski@boston.gov>

# Arts in South Boston

Tracy Heather Strain [redacted] Thu, Aug 3, 2017 at 9:31 PM
To: tim.czerwienski@boston.gov

Dear Tim Czerwienski:

Please do make sure that art and culture are factored into the development of the Edison Building.

Thank you for your thoughtful consideration.

Sincerely,

Tracy Heather Strain
The Film Posse
15 Channel Center Street #210
Boston, MA 02210-3424

Sent from my iPad

Tim Czerwienski <tim.czerwienski@boston.gov>

# Proposed Edison Plant Development in South Boston

Ryan Stratton [redacted] Tue, Jul 25, 2017 at 12:06 PM
To: tim.czerwienski@boston.gov

Hello,

I was unable to attend the meeting this week but am a South Boston resident who resides at 76 Marine Road in South Boston between L Street and K Street. I feel that the thought that we can accommodate a hotel and 1500+ housing units at the old Edison Plant site is unrealistic. Especially since the number of units is not matched with parking. There is no way South Boston can accommodate the off-street parking (at one point it was estimated that there would be 900 units without parking!) or handle the addition of that number of residents taking public transport since the area is really only serviced by 4 bus routes with one (the #7) not running 7 days a week.

It would be helpful if a public parking facility was set up in the area that could service South Boston and the Seaport area. It would take a lot of parking congestion for bars and restaurants off of the residential streets in the area. I think a hotel would be overkill since there are so many in the Seaport already that I believe are underutilized as it is.

A smaller housing development would make sense, 500 units or so, considering there are several developments already in the works in the area of where L street transforms into Summer Street. South Boston is in dire need of affordable housing for middle class families. It is quickly turning into either wealthy housing or people from the housing projects, no in-between.

Retail space would make sense and maybe even an area for a gym since there is not a large gym available to City Point residents. The only large gym is Gold's Gym near Broadway Station.

Finally-I think the EPA needs to be heavily involved in giving clearance that it is even safe to build on this site! The city needs to evaluate the residents who lived in the area long term for cancer rates, etc to see how the Edison Building affected the health of the residents nearby and how it could affect the health of people living right on the site.

Thank you for your time,
Ryan Beth Stratton
76 Marine Road #2
South Boston, MA 02127

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison project

Courtney Subatis [redacted] Tue, Jul 25, 2017 at 9:14 PM
To: "tim.czerwienski@boston.gov" <tim.czerwienski@boston.gov>

Hello,

I own a 2 family house on East 7th in between L & M streets. I am currently a stay at home Mother and am often walking along L/Summer street. Currently, despite crosswalks, L/Summer street is extremely unfriendly to walkers and bikers. People don't stop for the crosswalks and many areas have extremely narrow sidewalks. If you are walking during the morning/evening commute with a stroller you can't even walk on the congested sidewalks. In the mornings people crowd bus stops as buses pass them by because they are full. In the evenings the sidewalks are flooded as it seems almost an entire bus empties between 1-2 stops. If you're driving, it takes 20 minutes to get from east 7th to the Summer St Bridge.

I am extremely worried about the congestion a project of this size will bring. What are the plans to improve L/Summer st for walkers, bikers AND drivers? What is the plan to improve bus lines?! What is the plan to get another form of transportation to our side of South Boston--mainly T access?!

Please let me know what the plan is because these concerns already resonate with many South Boston residents and will only increase as more people move into the Edison.

Sincerely,
Courtney Subatis
--
Please save & use my current email [redacted]. Best, Courtney Subatis

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison

Bill Sullivan [redacted] Thu, Aug 3, 2017 at 8:54 AM
To: tim.czerwienski@boston.gov

Dear Tim,

As a concerned longshoreman, I am writing you in opposition to the proposed development of the current Edison plant. I believe it will adversely affect the operations in the port of Boston which is vital to the Massachusetts economy. As it is now, we are developing and expanding the port with considerations for existing residents on east first street by building the new haul road; effectively removing tractor trailer traffic off of E. First St. Once there are upwards of 1500 new families in such a congested area this will put the traffic plus some back onto E first st. Also the farmers market and the other retail shops going in to the site will bring more outside traffic to E first st and parking will be a concern too. We operate at a lot of different times day and night at conley terminal. This would affect people living in that area and would hamper our ability (if opposed) to service shipping companies in the fast efficient manner that has been achieved throughout the past 20 years. We are now one of the most efficient and productive ports in the country considering our size and are now expanding to accommodate future commerce. There are already many many obstacles we face on a daily basis just to accomplish what we do everyday. This situation could bring things to a halt and have a huge affect on the billions of dollars generated in local economic activity currently being produced out of the work we do at Conley Terminal. The ILA has over 400 members working in the Port of Boston we are concerned for our lively hoods and the future and security of our families.

I thank you in advance for your attention to this email.

Sincerely,
William Sullivan
Business Agent
ILA Local 799

Sent from my iPhone

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison plant

dan sullivan [redacted] Thu, Aug 3, 2017 at 12:52 PM
To: tim.czerwienski@boston.gov
Cc: Billy Sullivan [redacted]

Hi , my name is Daniel Sullivan. I'm a 48 year old life long boston resident . I'm sending and email to voice what I believe to be a bad plan for the Edison site . It's bad for South Boston and my livelihood. I'm a full time employee of the Boston Longshoremans Association . I've been to most of the community meetings and don't like what I hear . The traffic is almost unbelievable now and to bring more cars into this community will most certainly destroy the environment the noise level and the simple family life that most enjoy . Also there is talk of a 300 unit hotel that will bring here people that don't care of what this community has been for over a hundred years . Conley terminal is going to expand in the next couple of years and with a project this size there will certainly be controversy about land , noise and the traffic of the trucks that are here now . The bypass bridge is coming to completion very soon to . The reason for that is to take the trucks out of the community for the residents that live on first st. Now there is a proposal to move more people into the direct location the trucks were to avoid . This plan for the Edison should not move forward . Please take this into consideration.

Tim Czerwienski <tim.czerwienski@boston.gov>

# Arts and Cuyltural center in Old Edison Bldg development plan?? ????? PLEASE....PLEASE

Judith Sweeney [redacted] Thu, Aug 3, 2017 at 9:09 AM
To: tim.czerwienski@boston.gov

Hello Time,

I'm a member of South Boston Arts Association and have participated in our Free Youth Art classes this summer at the administration building on the site of the development. Thanks to Ralph Cox and Greg Bialecki for setting this u for our group. They have also set up Wednesday after noon for our light house painting project. I believe that Hilco is committed to be part of the South Boston Community. I urge you to vote for their proposal and not hold up something sorely needed in this community.

Thanks
Judith Sweeney
Treasurer/membership

Tim Czerwienski <tim.czerwienski@boston.gov>

# 776 Summer Street (Edison Plant) comment period ends August 4

Cyrus T ehrani [redacted] Fri, Jul 28, 2017 at 3:52 PM
To: Tim Czerwienski <tim.czerwienski@boston.gov>

Hi Tim,
I'd like to voice my full support for the project as a South Boston resident and homeowner. I was at the meeting this past week and spoke in support. As member of an underrepresented demographic (millennials) who, unfortunately, aren't involved enough in the development process, I feel like these meeting completely misrepresent the community sentiment. I firmly believe that the majority of South Boston residents are for this project, but are simply not engaged enough to leave work early on a Wednesday afternoon to make a 6pm meeting, nevermind know the meeting exists in the first place.

I am sure you're aware of these studies and info, but I'd like to use them in support of my points.

Young people in this city are starved for affordable housing, not IDP or luxury housing. The only way to bring the prices down is to grow market rate housing supply. From 2010 to 2015, there were 4 new jobs for every permitted housing unit. 1,600 units would be a huge and necessary addition to the housing supply.

**Jobs per Permit:**
**10 Most Undersupplied Metros**

| | Metro | 2005-2010 | 2010-2015 | 2005-2015 |
|---|---|---|---|---|
| 1. | San Jose, CA | -0.8 | 5.5 | 3.2 |
| 2. | San Francisco, CA | -1.6 | 6.8 | 3.0 |
| 3. | Boston, MA | 0.3 | 4.1 | 2.4 |
| 4. | Salt Lake City, UT | 0.8 | 3.6 | 2.2 |
| 5. | San Antonio, TX | 1.1 | 3.1 | 1.9 |
| 6. | Denver, CO | 0.0 | 2.9 | 1.7 |
| 7. | Dallas, TX | 0.6 | 2.3 | 1.5 |
| 8. | New York, NY | -0.3 | 3.1 | 1.5 |
| 9. | Austin, TX | 0.9 | 1.8 | 1.4 |
| 10. | Seattle, WA | 0.3 | 2.3 | 1.3 |

apartment list

https://www.apartmentlist.com/rentonomics/housing-shortage-undersupply-of-new-construction/

A low parking space/unit ratio is necessary to keep both development costs down to create more affordable units and to reduce the traffic in the neighborhood. The hypocrisy displayed at the meeting was unbelievable as people were lobbying for more parking spots/unit and against the creation of traffic.

The future of Boston was not represented at the meeting Wednesday. The future of Boston is frustrated with the housing costs in this city. The following is evidence of the frustration of millennials with Boston housing costs, and how solving this problem is crucial to Boston's future:
The Boston Foundation found that 70 percent [of millenials] are "dissatisfied" with the local housing market…"Our future prosperity depends in no small part on our ability to support our millenial population, " said Boston Foundation president Paul Grogan. "While our city is thriving in manys, this survey of young adults in Boston surfaces some deep anxieties." - The Boston Globe, May 2017

https://www.bostonglobe.com/business/2017/05/26/will-housing-prices-push-young-workers-out-boston/f2Fcq59zwjFXKBzRN9tGHJ/story.html

Boston doesn't just have a prominent millenial demographic; it has the most prominent millennial demo of the top 25 largest cities. The BPDA needs to look into their best interests and not just the 20 disgruntled South Boston residents who were able to show up to the meeting this past week or who are involved enough to submit comment letters.
With a full 34 percent of its population between the ages of 20 and 34, Boston has the highest concentration of millennials among the 25 largest U.S. cities, the Chamber report said. - The Boston Business Journal, May 2017
https://www.bizjournals.com/boston/news/2017/05/24/boston-is-thriving-and-thats-a-prob

My only criticism is that I'd like the retail to include some national chains. It'd be nice to stay in South Boston to do some shopping and not have to go to The Pru or Newbury Street.

The only question I would pose to the developers is why not more than 1,600 units? Can they increase the density of the residential buildings in order to build more units?

I look forward to more details on the developer's proposal and more discussion on the project. I plan to do my best to increase the turnout of young people at these meetings and I'm looking forward to continued discussions.

Lastly, I hope the BPDA sees as much value in comments from people from other neighborhoods in the city because the housing crisis in Boston isn't just a South Boston problem nor a Boston problem, but a regional problem and this goes a long ways in solving the problem.

Regards,
Cyrus Tehrani
237 Dorchester Street Unit 1
Boston, MA 02127

[Quoted text hidden]

Tim Czerwienski <tim.czerwienski@boston.gov>

# L st. Project

Mark Thomas [redacted] Thu, Aug 3, 2017 at 9:53 AM
To: "Tim.czerwienski@boston.gov" <Tim.czerwienski@boston.gov>

Dear Tim,

I am a south Boston resident at 158 I st, and I strongly oppose the Edison Plant development. The proposed density and scale of the project will only serve to further increase the traffic and congestion that the overdevelopment of South Boston and the waterfront had already caused. Parking has always been an issue and the proposed number of 1/2 parking spot per unit is ridiculous. Please do not allow this project to go forward as proposed.

Tim Czerwienski <tim.czerwienski@boston.gov>

# (no subject)

**Billy T @ Tompkins** [redacted]
Reply-To: "Billy T @ Tompkins" [redacted]
To: tim.czerwienski@boston.gov

Thu, Aug 3, 2017 at 8:46 AM

Good morning Mr. Czerwienski

I am writing to you today regarding the South Boston Edison plant and its proposed development. As a longshoreman employed in the South Boston area, specifically at the Conley Container terminal. I have a wide range of concerns with this proposed development. The developers Redgate / Hilco have proposed some 1,588 condo's and residential units, along with other new buildings, and hotel. One of my concerns is the influx of cars and traffic to this portion of the city. The Conley Container terminal is 1/2 mile away from the Edison plant and roadways all thru the seaport and S. Boston area(s) already are congested.

Another item is the ongoing is the Conley Container terminal expansion. After receiving $42 million federal grant from the US Department of Transportation to repair the Conley's two existing berths and subsidize new gate facilities. Massport is about to embark on a massive dredging project, with the US Army Corps of Engineers, to make it easier for bigger ships to navigate Boston Harbor. All this money is being invested into the Conley Container terminal to make it a more competitive and attractive port to draw in more shipping lines and their business. Also the Massport project of the new access road meant to divert truck traffic off of East First Street is nearly complete and runs directly in front of the Edison plant. These monies were invested by Massport to divert truck traffic and noise away from residential homes. Now someone is proposing 1,588 residential units to be built directly overlooking the new access road.

Again I must stress my strong opposition to this proposed development. I would hope after careful consideration of all facts, yourself and the Boston Planning and Development Agency deny the proposal by Redgate/Hilco.

Respectfully submitted,

Billy Tompkins
[redacted] Cell

Tim Czerwienski <tim.czerwienski@boston.gov>

## Edison Plant/ 775 Summer Street

**Erica Tritta** [redacted] Fri, Aug 4, 2017 at 5:09 PM
Reply-To: Erica Tritta [redacted]
To: "tim.czerwienski@boston.gov" <tim.czerwienski@boston.gov>

Mr. Czerwienski -

I am writing as a resident of South Boston (264 Bolton Street, Apt 2). I have enormous concerns for the project as proposed. First, I am still concerned about the environmental impact of any construction at this site. I have not seen the due diligence needed to ensure safety for the ground and air should any demolition or construction be allowed. Second, I am concerned with the size of the proposed project. Our neighborhood has seen dramatic growth in the number of residents and business in the last several years but we have not had infrastructure changes to support that growth. The most obvious shortcoming is public transportation. Lack of buses, subway or other public transit to this section of Southie, would increase all forms of traffic (pedestrian, public, cars, bikes, etc) to an unbearable level. The impact of this project will also be felt on the community. The proposal includes 20 story towers. This part of the proposal is entirely different than the esthetic of the rest of 02127. We need more housing units, but it does not need to look like this, nor does it need to include the large amount of mixed use space.
In summary, I do not support this project and request it be denied in its current proposal.
Thank you,
Erica Tritta

Tim Czerwienski <tim.czerwienski@boston.gov>

# Arts & Cultural space at Edison Building in Southie

AedeenTwomey [redacted] Tue, Aug 8, 2017 at 11:04 PM
To: tim.czerwienski@boston.gov

Dear Tim,

Please include a space to facilitate the Arts and Cultural activities in the Edison Building in Southie.

I am an educator and completely support this much needed space in Southie. I would love to help volunteer there and give back to our wonderful community.

Thank you for your consideration.

Best,

Aedeen Twomey
Montessori Educator

Tim Czerwienski <tim.czerwienski@boston.gov>

# arts

[redacted] Thu, Aug 3, 2017 at 11:48 AM
To: tim.czerwienski@boston.gov

Dear Tim Czerwienski,

Please help South Boston obtain a space for the arts in the Edison Development. South Boston has exceptionally talented artists who have willingly given their time to teach the youth and community in South Boston. They have taught children for free in whatever space was available....church basements, spare rooms in rectories, etc. The classes were enthusiastically attended.

The South Boston Arts Association has worked diligently towards a Community Arts Center which includes art, dance, music, theatre, photography and writing. For over fifteen years this organization has put their bids in for a variety of opportunities. To mention one, they presented an outstanding proposal including architectural design for the abandoned Police Station on D Street.. Despite a strong response from the business and community in South Boson, they lost out.

I have been a member of the South Boston Arts Association for ten years and a board member for two. I was born and raised in South Boston and educated in music at the New England Conservatory. Enjoyed years of performing in opera, musical comedy and as church soloist and choir director with the Gate of Heaven Church and Saint Bridget Church in South Boston.

The South Boston community has always appreciated the arts and will respond with deep appreciation if a space is made available for them in the Edison project.

With appreciation and hope,
Lorraine Walsh

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison

Nora Wasserman [redacted] Wed, Aug 9, 2017 at 12:46 PM
To: tim.czerwienski@boston.gov

Good Afternoon Tim,

I am a lifelong resident of South Boston and live just 2 block over, from the Edison plant with my growing family. I am 100% against all plans for residential and commercial development on that site. The area should stay a working port.

South Boston is crowded enough and we do not need anymore residents or cars, nevermind a project of this mammoth proportion. Our neighborhood can't handle 3,000 more people. Crowds of 100 people wait at bus stops for crowded busses to drive past them every morning. Residents can't leave their homes after 5:00 pm because there are no parking spaces available after that time. We are surrounded by constant construction and BWSC ripping up our streets for months at a time. We are experiencing power outages because the old systems can't handle the demand being placed on them by all the new condos. Our historical homes have been ripped down and replaced with characterless, gigantic condo buildings.

We have had enough! We need to put a stop to the overdevelopment of South Boston. Single homes need to stop being ripped down and replaced with ugly 20 unit condo buildings. We need 24/7 resident parking in the entire neighborhood. Historical homes need to be protected.

The neighborhood needs to become more family friendly - we desperately need housing that is affordable for average income families! Growing families are forced to move out because they can't afford a place to live that has three bedrooms.

The people of South Boston have had enough with overdevelopment of our beloved neighborhood, and we will no longer allow it to happen. I am a part of a large number of residents that will do whatever is necessary to stop any development of the Edison plant location.

Please feel free to contact me with any questions.

Thank you,
Nora Wasserman
[redacted]

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison Plant include Arts and Culture

[redacted] Thu, Aug 3, 2017 at 2:50 PM
To: tim.czerwienski@boston.gov

Hello

I and my husband Glenn Williams have been lifelong advocates for communities supporting local arts and culture. We both are members of the South Boston Arts Association and the producers of  a long running(20 years) local arts television program called It's All About Arts. We support and ask.that the Edison Plant development include a large arts and culture presence to be used by South Boston residents and to attract tourists.

Thank you
Janice and Glenn Williams
[redacted]

Sent via the Samsung Galaxy S® 6, an AT&T 4G LTE smartphone

Tim Czerwienski <tim.czerwienski@boston.gov>

# Edison Plant project

**Rick Winterson** [redacted] Wed, Aug 2, 2017 at 11:12 AM
To: "tim.czerwienski@boston.gov" <tim.czerwienski@boston.gov>

Tim -
I have one, simple request for this project - a "space" for the arts that could be used for exhibitions, workshops, and performances/presentations of various kinds. With movable partitions and removable seats and tables, one such space could be used for an immense variety of cultural pursuits - mornings, noons, and nights.
Fair warning: the wiring for lights and sound for such purposes will be expensive, but the space itself (ex furnishings) won't cost any more than other parts of the Edison Plant project.
I have some background in these matters, so contact me for any advice you need.
Rick Winterson

George F. "RICK" Winterson
Cell: [redacted]
Email (personal): [redacted]
Email (work): [redacted]

Tim Czerwienski <tim.czerwienski@boston.gov>

# (no subject)

David Zox [redacted] Wed, Aug 2, 2017 at 5:06 PM
To: "tim.czerwienski@boston.gov" <tim.czerwienski@boston.gov>

Dear Mr Czerwienski,

As a musician who has performed regularly for many years at venues in South Boston (Lucky's Lounge, World Trade Center, Capo, South Boston street festival, etc). I would like to express to you that I feel strongly that the plans for the former Edison power plant property on First and Summer Streets should include an Arts and Cultural Community Center. I would very much like to see that. It would add much to the thriving community of South Boston.

Thanks so much, Dave Zox

Get Outlook for iOS

776 Summer Street Public Comments via website form 2017-08-09

| Date | First Name | Last Name | Organization | Street Address | Address Line 2 | City | State | Zip | Opinion | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| 08/04/17 | Catherine | O'Flaherty | | 588 E 6th St | | South Boston | MA | 02127 | Support | While I support development in this area, buildings that are too high are will cast shadows over our neighborhood, and I will actively oppose huge high-rises that do so and simultaneously block our current water views and access. Also, there should be public areas for citizens--bike paths surrounding the development are key. Finally, please keep in mind that there are at least 5 schools within walking distance of the development. In an effort to keep families in South Boston, please consider including aspects that our children can access such as a performance space, an exhibition gallery, and/or play areas. |
| 08/04/17 | William | Miller | I.L.A. | 8 Frazer St. | | Dorchester | MA | 02124 | Oppose | I strongly oppose this development. There are so many thing to take into consideration with any development, let alone one this size. The traffic that this project would cause will affect everyone that resides, & works in South Boston. Adding 1500 condos, with an allotment of 5 vehicles per unit is not a reality. Then add the hotel, and people coming in and out of the area for the new development alone will be upwards of 10,000 vehicles per day. For the last 20 years, Elected Officials, Massport, the I.L.A., and local community leaders have worked tirelessly to remove the trucks entering Conley Terminal away from the community. Developing this parcel of land for residential/mixed occupancy would only be bringing the community back towards the trucks. All the hard work put in to achieve the trucks off of<br>E. 1st St. would be for not. The land is in an area designated for Maritime/Industrial use. The reason this was done so many years ago, was because the Port of Boston is about more than the neighborhood in which it resides in. It is about the entire New England Region. Switching the DPA & Ch. 91 could potentially change things that would negatively affect not only the Commonwealth, but the entire Northeast. For these key reasons, I personally feel that a project of this magnitude would be detrimental to all of New England. Thank you for your time regarding this matter. |
| 08/04/17 | Paul | Sullivan | Reident | #31 | 516 E 2nd | South Boston | MA | 02127 | Oppose | The building of anything over 10 stories is too much with flight paths and also does not account for the filled land that is already threatened by rising waters.<br><br>I was fine with doing the redo of the building but the additional buildings and people are too much with the police department understaffed as it is...<br><br>We would need 30 more officers. Also we were having brown outs and it is because even Eversource people are saying the system would need to be redone again |

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| 08/04/17 | peggy | kelly | murphy's law | 837 summmer street | | south boston | MA | 02127 | Support | The 776 Summer Street location is the gateway into the heart of South Boston. The use and development of this project will impact the City of Boston and the South Boston community for decades to come.<br>Development of this parcel in such a manner as to provide commercial, rental, retail and hospitality to the community would provide a beneficial economic impact to the surrounding area.<br>This is a large and presently unused area of land in a vibrant City and the development of this land with a mixed use of offices, stores, hospitality venue, residential units and possible some "green" industrial use would provide numerous opportunities to the members of our community and the surrounding area.<br>Thank you for this opportunity to start to formalize our opinions and the open and professional manner in which the many neighborhood meetings have been conducted by your office.<br>Sincerely,<br>Peggy Kelly |
| 08/04/17 | Alexandra | Merriweather | | 336 E St. | Apt. 1 | South Boston | MA | 02127 | Support | Tim Czerwienski<br>Boston Planning & Development Agency<br>City Hall, 9th Floor<br>One City Hall Square<br>Boston, Massachusetts 02201<br>Re: 776 Summer Street<br><br>Dear Mr. Czerwienski,<br><br>I am a South Boston resident and I am writing in support of the proposed development at 776 Summer Street.<br><br>My fiance and I chose to buy an apartment in South Boston because we were drawn to the community. The arts and culture, the restaurants, the people - there is a tangible feeling that Southie is bustling in the best way, and I think this project is a continuation of the positive change coming to the neighborhood.<br><br>From Day 1, the development team has been interacting directly with the neighborhood, asking what we want to see, and has been transparent with us. Yes - there will be traffic impacts. But the plans for the site, which has been inaccessible for decades, offer the community many positives which will offset the transition. The community will have more waterfront space; there will be more restaurants (maybe even an open market!), shopping, and indoor and outdoor places to bring friends and family. If we work closely with the developers I think we can create a project that will really benefit everyone. I think the community should be excited to embrace positive change as outlined in this project. |

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| 08/04/17 | Catherine | Kellogg | | 68 O St. | #1 | South Boston | MA | 02127 | Support | Tim Czerwienski<br>Boston Planning & Development Agency<br>City Hall, 9th Floor<br>One City Hall Square<br>Boston, Massachusetts 02201<br>Re: 776 Summer Street<br><br>Dear Mr. Czerwienski,<br><br>As a resident of South Boston, I am writing in support of the proposed development for the L Street Station at 776 Summer Street.<br><br>I chose to live in South Boston because it's such a great community - one that I think should be excited to embrace positive change as outlined in this project. With over 15 acres of waterfront space, there is a huge opportunity to re-connect this previously inaccessible site to the rest of the community. In the plans the developer has laid out so far, I've been impressed to see dedicated space for arts and cultural uses; more opportunities for local retail and restaurants, and more waterfront open space where residents can walk, run and hang out.<br><br>While I understand that some residents are nervous about a project of this magnitude, I think, by working directly with the developers to influence the types of uses on the site, we can create something really exciting for the Southie community.<br><br>I appreciate the developers' communication with the neighborhood and look forward to the much needed development of 776 Summer Street. |
| 08/04/17 | Ita | Kane | | 730 East Third St | | Boston | MA | 02127 | Oppose | -Parking and transportation. Much of their plan regarding the needs of parking are based around assumption of new technology and improvements to public transit. We have seen multiple time such projects fail to reach full potential, but there is not a backup plan regarding transit without this. |
| 08/04/17 | nancy | torkomian | | 881 East 1st St | | Boston | MA | 02127 | Oppose | please do not ruin our community and sense of home with the development at Summer & L st. |
| 08/04/17 | Lorraine | Cox | | 365 K Street | | South Boston | MA | 02127 | Oppose | I am strongly against this because it will add to the growing congestion and traffic problems in South Boston. Also there is a major lack of parking already and this will only add to it despite the 1 parking spot per apartment or whatever will be issued to an apartment. It still won't be enough. |

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| 08/04/17 | Anne | Farma | | 53 Farragut Road | | South Boston | MA | 02127 | Oppose | My family has lived in South Boston since 1832. The generations have seen many changes, but change has been gradual and on a human scale. The current scope and extent of development in South Boston is extreme. Several negative impacts on the community have accelerated as a result of over crowding and over development. These include increased crime, traffic congestion, inadequate public transportation, and environmental deterioration due to dust and other building materials being unsafely removed from old buildings. Our way of life, our health, and the health of our children have been jeopardized due to this unchecked growth. Investors, developers, and speculators involved in most of these projects do so with the sole intention of profit. There is no concern or awareness of the existing community or our way of life. I strongly oppose this over-reaching, money grabbing folly of a project for the sake of this and future generation of South Boston residents. |
| 08/04/17 | William | Dalton | I.l.a. | 7 s. Main st | | Winthrop | MA | 02152 | Oppose | I am a 3rd generation longshoreman , I've worked at Conley term since 1969 , and I really believe the building of a condo / hotel / mall , at the old Edison plant on 1st and L st. In south Boston will be detrimental to the area , the Waterfront cargo terminal , and all the new homeowners that are there now , mass port was allotted about 1+ billion dollars in grants to take our truck traffic off of 1st st for those residents , now if allowed to build 1500 condos , hotel space , etc. that will definitely kill our port , because once that is complete the new condo owners will be petitioning to stop truck traffic again ,,,, please look into this a bit deeper and see in the long run what will happen to that area , Conley terminal , and the vital shipping trade port ,<br>Thank you for your time , please use your best judgement<br><br>Sincerely William dalton jr . |
| 08/04/17 | Tim | O'Brien | Colliers International | 381 Congress Street | Unit 311 | Boston | MA | 02210 | Support | As a resident of South Boston, Fort Point Channel Neighborhood, I am writing in support of the proposed development for 776 Summer Street.<br><br>I am proud to live in a city that continues to grow and flourish and am looking forward to seeing the redevelopment of this property with all the community benefits it will bring. Specifically, I am most excited about the open space and areas for public use that the developers have shared with our neighborhood. Having a safe place for families and children to visit that is nearby with so many amenities is not only incredibly exciting for our neighborhood but also terribly needed.<br><br>We appreciate the developers continued outreach and communication with the neighborhood and look forward to the much needed development of 776 Summer Street that our neighborhood and city as a whole will be proud of.<br><br>Thank you. |

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| 08/04/17 | Maura | Walsh | | 8 Peters Street | | South Boston | MA | 02127 | Support | As a resident of South Boston's City Point neighborhood, I would like to provide my support for the redevelopment of the sight of the former Edison Power Plant at 776 Summer Street. This piece of land has laid dormant for years and with its premium location along the reserve channel, it has been a waste of potential. The Hilco and Redgate teams have been engaged with the community early and often and their plans aim to provide a great family oriented public park space along the water for all South Boston residents to enjoy. I have strong support for the project with two small exceptions. The first is the need to address the already strained bus system providing for City Point commuters access to the city. The second is the need for an increased number of parking spaces needed versus the proposed number. With over 1500 units there will be at least one car per unit and the current proposal of ~978 parking spots (including both hotel and commercial spaces) is woefully inadequate. Aside from these easily addressed minor pain points, this redevelopment has my support and is a welcome addition to our already vibrant community. |
| 08/04/17 | Elvi | Jorgaqi | | 1410 Columbia Road | | South Boston | MA | 02127 | Support | As a resident of South Boston, I am writing in support of the proposed development for 776 Summer Street.<br>The Edison Power Plant has been an eyesore for years and I am looking forward to the clean up<br>and rejuvenation of the site. Many in the neighborhood have been concerned about the safety of<br>the power plant, given the state of disrepair a lot of the buildings are in. Having a team come in<br>to not only safely clean up the property, but also restore some of the historic components, will<br>bring life and vitality back into that part of the neighborhood.<br>We appreciate the developers continued outreach and communication with the neighborhood and<br>look forward to the much needed development of 776 Summer Street that our neighborhood and<br>city as a whole will be proud of.<br>Thank you. |

| | | | | | | | | | | |
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| 08/04/17 | Justin | Pierce | Harvard Management Company | 600 Atlantic Ave., 14th Floor | | Boston | MA | 02210 | Support | In addition to addressing the dire need for more housing units in South Boston, this project will bring much needed Class A office space and employers to the area, which will help South Boston transition into a live/work/play area. Currently, the great majority of South Boston residents leave the area each day to the Financial District and Back Bay and local businesses in South Boston suffer as its commerce essentially pauses from 9AM to 5PM. Mixed-use projects such as this foster economic growth and community engagement. As office rents continue to soar to records levels in the thriving Seaport/Innovation District, small businesses and start-up companies may be pushed out. Approval of this project will serve as a great opportunity for South Boston to become a new hub for small businesses and start-ups as a lower cost alternative to Seaport/Innovation District while providing great housing options, retail amenities, and public spaces for both current and new residents. Boston is an innovative city and its neighborhoods are constantly evolving and competing for prosperity. South Boston should certainly protect its unique identity but it also needs to evolve with Greater Boston. This site is a great location to achieve the aforementioned as it is on the edge of South Boston, in the path of office growth coming from the Seaport/Innovation District. |
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| 08/04/17 | Frances (Lucky) | Devlin | Resident | 718 East Second Street | 718 East 2nd street | South Boston | MA | 02127 | Support | Before RedGate backs is eliminated we need a community meeting to ask questions about this property Presently this property is zoned marine/industrial.Under this zoning many uses are allowed Example I clearly remember a short time ago the divison of transportation (DOT) want to put their maintenance facility on this land now If allowed this would have been an Environmental Nightmare. Community also fought hard to stop a Garbage Barge operating because it was allowed under Marine/Industrial use .<br>Community needs to be viligent when we have a large piece of land Zoned for i/Marine/industrial use only because it allows business to move into our back yards that no one wants or would allow in their back yards. Please take a deep breath lets do this right and ask the questions to be sure we won't regret a rushed dissuasion.<br>Lucky Devlin south Boston Ma |
| 08/04/17 | Katherine | Gentile | | 697 East 6th Street, Unit 2 | | Boston | MA | 02127 | Oppose | I strongly oppose this project. As a 10-year resident of South Boston, I have already seen the negative effects of overdevelopment on this neighborhood. I am greatly concerned about the size and scale of this project. Specifically: the lack of additional community resources such as police, fire, etc. that will be (and already is) greatly needed with the influx of new residents; the insufficient infrastructure to accommodate the influx of traffic in and out of Southie; the unknown health and environmental issues that will inevitably happen due to a project of this size and on land that has already been deemed hazardous. I would be remiss to not mention the already overburdened and mismanaged MBTA - I can't even imagine the impact an additional 1500+ residents would have on the system as it is now. I love this neighborhood and community, and have chosen to raise my family here. However, after hearing about this project and the magnitude of its impact, I am seriously reconsidering my decision. In my opinion, this is the proverbial last straw, and truly reflects the greed and money-hungry mentality that has taken precedent over the safety and well-being of the residents of this neighborhood. |
| 08/04/17 | James | Bailey | | 58 Cabot Street | | Everett | MA | 02149 | Support | I am in support of the proposed development at 776 Summer Street in Boston. Though I am not a resident of South Boston, I have worked full time in South Boston the past 6 years. In fact I worked in the Cahill Building adjacent to the project site from 2012 until 2015. I've watched as the Seaport District has expanded and as condo developments have gone up all around South Boston and I am in full support of this development proposal as it will continue to enrich the improving fabric of South Boston. The site is obviously massive and I think that the architecture should mirror the scale and significance as such. |

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| 08/04/17 | Katherine | Gentile | | 697 East 6th Street, Unit 2 | | Boston | MA | 02127 | Oppose | I strongly oppose this project. As a 10-year resident of South Boston, I have already seen the negative effects of overdevelopment on this neighborhood. I am greatly concerned about the size and scale of this project. Specifically: the lack of additional community resources such as police, fire, etc. that will be (and already is) greatly needed with the influx of new residents; the insufficient infrastructure to accommodate the influx of traffic in and out of Southie; the unknown health and environmental issues that will inevitably happen due to a project of this size and on land that has already been deemed hazardous. I would be remiss to not mention the already overburdened and mismanaged MBTA - I can't even imagine the impact an additional 1500+ residents would have on the system as it is now. I love this neighborhood and community, and have chosen to raise my family here. However, after hearing about this project and the magnitude of its impact, I am seriously reconsidering my decision. In my opinion, this is the proverbial last straw, and truly reflects the greed and money-hungry mentality that has taken precedent over the safety and well-being of the residents of this neighborhood. |
| 08/04/17 | Elizabeth | Aguilo | resident | 47 Dorchester St. #4 | | South Boston | MA | 02127 | Oppose | The scale is too large and the current plans would severely negatively impact the community--too much foot traffic, not enough parking. The public transportation system cannot meet the current demand for services--what would happen with the proposed increase? |
| 08/04/17 | Loren | Miller | ILA | 365 elmwood Ave | | Quincy | MA | 02170 | Oppose | I oppose the Edison project. This project would affect many people in a negative way. The traffic that this project would cause will affect everyone that lives and works in South Boston, & surrounding area. Adding 1500 condos, with not enough adequate parking for the vehicles that reside there would be devastating for the community. Recently there was a designated freight corridor put in place to move be the trucks entering Conley Terminal away from the residents of the community. This project would bring the community back towards the trucks, which seems counterproductive for the reason the freight corridor was established in the first place. The location for this project, would add 10,000 - 15,000 cars a day. Having a vibrant Port in the city of Boston provides well over 15,000 direct and indirect jobs. Conley Container Terminal provides upwards of $3 Billion dollars to the economy of Massachusetts. This is not including the economic impact to the entire New England Region. Removing any of the Designated Port Area isn't worth the risk to the economy. The project proposed isn't realistic and I hope you take everything into consideration realizing this isn't the place for this size of a project. |

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| 08/04/17 | Bernard | O'Donnell | International Longshoremen's Association | Boston Fish Pier West Building Ste 304A | | Boston | MA | 02110 | Oppose | and my members oppose the proposal for 776 Summer Street power plant. This project will have a negative impact for Conley Terminal and the Port of Boston. The Port of Boston generates thousands of good paying blue collar jobs for the City of Boston. The ILA along with various State agencies have secured funds to develop. A main goal for the ILA was to support the community and push for a haul road to get the trucks off the local roads. We have been successful and the 650 trucks that travel to the port will now use the new haul road. this new road along with many improvement slated for Conley Terminal has made the Port of Boston very competitive with other ports on the East Coast. A project that proposed for Summer street cause a tremendous amount of additional traffic to an already highly congested area. With thousands of potentially more vehicles that will be traveling in this area the Log jam would greatly affect the Port area. Boston would lose any competitive gains that have been achieved over the past years to promote the Port. The added congestion will slow the Truckers and make us less competitive. Shippers will look to Ports outside of Massachusetts and ship cargo through New York or Canada. This would result in job losses in the trucking, warehousing and any other local industry that relies on the Port to move their product. We ask you to consider the blue color jobs that rely on industries around the Port. We struggle to preserve the middle class here in the City of Boston. A project of this size and size will not create good paying jobs. This project will further the impact of middle class people trying to get a good paying job so they can afford to raise their families in the Boston area.<br>Thank You,<br>Bernard O'Donnell |
| 08/04/17 | Cheryl | Conley | | 50 West Broadway #215 | | South Boston | MA | 02127 | Support | South Boston Community needs more affordable housing and this development should be required to give more than 13%. |
| 08/04/17 | Kevin | Cox | Resident | 365 K St | | SOUTH BOSTON | MA | 02127 | Oppose | I am opposed to this project as it will block our view of the city. I am opposed to this project as it will bring in too many vehicles creating traffic jams. I am opposed to this project as the buildings will be too high, from 10-20 stories high in a residential neighborhood. This will look out of place and does not conform to the rest of the 3 story family homes. We are not zoned for these types of building in this residential neighborhood.There is not enough parking for the residential units they are planning. there is not enough open space. I am opposed to this project as the land they will be building on contains hazardous waste and I do not want this to be released into the air/neighborhood or to have living, eating and shopping facilities on this site. We do not want this project in our neighborhood. |
| 08/04/17 | MAry | MCAuliffe | Resident CPNZ | 51 M St | | South Boston | MA | 02127 | Oppose | I believe that it will only increase our current problems. Neighborhood overdeveloped. Unable to provide sufficient public transportation as is. Insufficient parking causing overflow to park on neighboring streets. Need affordable housing not luxury housing.,. Increased pollution from truck traffic needed to create this project |
| 08/04/17 | MAry | MCAuliffe | Resident CPNZ | 51 M St | | South Boston | MA | 02127 | Oppose | I believe that it will only increase our current problems. Neighborhood overdeveloped. Unable to provide sufficient public transportation as is. Insufficient parking causing overflow to park on neighboring streets. Need affordable housing not luxury housing.,. Increased pollution from truck traffic needed to create this project |

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| 08/04/17 | Moira | Toomey | Bushari Real Estate | 11 Middle Street | #1 | South Boston | MA | 02127 | Support | To Whom It May Concern:<br><br>As a resident of South Boston, for over 10 years, I am writing in support of the proposed development for 776 Summer Street.<br><br>I am proud to live in a city that continues to grow and flourish and am looking forward to seeing the redevelopment of this property with all the community benefits it will bring. Specifically, I am most excited about the open space and areas for public use that the developers have shared with our neighborhood. Having a safe place for families and children to visit that is nearby with so many amenities is not only incredibly exciting for our neighborhood but also terribly needed.<br><br>We appreciate the developers continued outreach and communication with the neighborhood and look forward to the much needed development of 776 Summer Street that our neighborhood and city as a whole will be proud of.<br><br>Thank you.<br><br>Moira Toomey |
| 08/04/17 | Sanja | Malicbegovic | | 165 west 6th st | Unit b | South Boston | MA | 02127 | Support | As a resident of South Boston, [reference specific neighborhood in South Boston if applicable], I am writing in support of the proposed development for 776 Summer Street.<br><br>I am proud to live in a city that continues to grow and flourish and am looking forward to seeing the redevelopment of this property with all the community benefits it will bring. This mixed-use development is the exact kind of enrichment and investment in our neighborhood that we as residents are truly excited about.<br><br>We appreciate the developers continued outreach and communication with the neighborhood and look forward to the much needed development of 776 Summer Street that our neighborhood and city as a whole will be proud of.<br><br>Thank you. |
| 08/04/17 | Eric | Frasch | | 637 East 1st St | Unit 304 | Boston | MA | 02127 | Neutral | I support the development however I am extremely concerned with how the construction will impact the living conditions in our building at 637 East 1st St. We are located directly across the street from the development. Loud construction noise at all hours of the day and night will be 100% unacceptable. There needs to be a solid plan to mitigate impact on our building. There should be no construction noise or even moving of vehicles before 8 AM or after 5 PM or anytime on the weekend. From my experience, the City of Boston does a very poor job of protecting abutters and enforcing noise ordinance. They also seem to give out a lot of "exception" permits to work on the weekend. The City typically seems to let the developers & general contractors run wild and get away with many violations, showing a lack of respect for neighbors. If that happens on this 10 year project, we will sue the City and developer. |

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| 08/04/17 | Frances | hamilton | | 813 east broadway | | South boston | MA | 02127 | Oppose | As a 40 year resident and taxpayer I am wary of any huge development right on my doorstep. Southie has been overrun and overbuilt in the last few years as the Walsh administration rushes to create a "world class" city.<br>The appealing architectural character of Boston is being crushed by avaricious developers creating ugly boxes of steel and glass.<br>These are my top five objections:<br>(1)Traffic management, (2) Air quality, (3) Parking, (4) Noise,(5) Public transportation, (6) density |
| 08/04/17 | Douglas | Stefanov | Stefanov Architects Inc. | 423 West Broadway | Ste 404 | Boston | MA | 02127 | Support | I do support the project but there are concerns. Other than the obvious parking and transportation issues, I feel that there should be a contribution to the South Boston community, of which they would be a part. First a higher percentage of affordable housing, perhaps targeted towards the elderly, or a building for them. In addition some type of large scale art, performance, meeting space. Thank you. Doug |
| 08/04/17 | Kelsey | Thomas | | 660 East 6th St. | | Boston | MA | 02127 | Oppose | I oppose this project. Southie does not have enough infrastrcture (road bandwidth, parking, public space) and amenities (grocery store, restaurants, etc) to accommodate this. The area is already over saturated with people with not enough infrastructure to sustain it. As a tax payer and resident, this project grossly takes away from my desire and the value to live here. There is just not enough room for this type of project. The amount of development needs to be regulated. |
| 08/04/17 | Kathleen | Wallace | | 40 N Street | | South Boston | MA | 02127 | Oppose | South Boston is too dense today. Between people, cars, and trucks, there are congestion problems today. A project of this many units cannot be sustained unless serious infrastructure changes are made. |
| 08/04/17 | Joanne | McDevitt | IAG/ CPNA/long time resident | 787 East Broadway | | South Boston | MA | 02127 | Support | I know many in our community are concerned with traffic , density , pollution etc as am I.<br><br>The issues which need to be addressed 1)Traffic management, (2) Air quality, (3) Parking, (4) Noise, (5) Public transportation, (6) density (7) Preservation of more of the historic structure(s), (8)inadequate availability of fire and police 9) Affordable Housing. (10) Utility and infrastructure impacts, (11) Continued successful operation of the Conley Terminal, (12) Height of structures in the current plan (13) community access (14). Pressure on existing recreational facilities,(15) inadequate public transportation to meet growing needs of the community,<br><br>However , I feel that this project has merit and we should also look at some of the positive impacts of the proposal on the community : removal of industrial eye sore which was decommissioned several years ago as a power plant , cleaning up of a possible contaminated area, housing for Artists and over 55 housing and increase the number affordable housing in the community ,and an arts and cultural center. The site could provide City Point with much needed amenities such as a butcher shop, fresh vegetables and farmers market , wine shop and family oriented restaurants. |

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| 08/04/17 | Deborah | Waldman | | 637 East 1st Street | Unit 201 | South Boston | MA | 02127 | Oppose | I am a direct abutter and oppose the project in its present state. I think that the number of residential units is too high and the parking spaces are too few. I don't think the neighborhood can absorb the traffic a project this size would generate. I think that the limited parking would put increased pressure on the neighborhood parking problem instead of providing some much needed relief.<br>I look forward to reviewing a revised proposal and hearing how the project will move forward respecting the abutters and neighbors of this project.<br><br>Deb Waldman |
| 08/03/17 | Matthew | Furey | CBRE/New England | 521 E 2nd Street | Apartment 2 | Boston | MA | 02117 | Support | As a resident of South Boston, I am writing in support of the proposed development for 776 Summer Street.<br><br>The Edison Power Plant has been an eyesore for years and I am looking forward to the clean up and rejuvenation of the site. Many in the neighborhood have been concerned about the safety of the power plant, given the state of disrepair a lot of the buildings are in. Having a team come in to not only safely clean up the property, but also restore some of the historic components, will bring life and vitality back into that part of the neighborhood.<br><br>We appreciate the developers continued outreach and communication with the neighborhood and look forward to the much needed development of 776 Summer Street that our neighborhood and city as a whole will be proud of.<br><br>Thank you. |

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| 08/03/17 | Lisa | Cox | SB Resident | 365 K St | | SOUTH BOSTON | MA | 02127 | Oppose | This development will ruin our view of Boston, create shade on abutting areas that have had sun for years and create way too much traffic and our neighborhood can't handle it. This project would bring in 10,000-20,000 more vehicles daily in addition to what we have cutting thru our streets as people try to get into work in Boston almost 7 days a week. This would affect our day to day living in a negative way. Our small square footage of a neighborhood can not handle 8 sites that contain buildings that are 10-20 stories high! And once again, another development without enough parking. When is this going to stop? ONE PARKING SPOT PER BEDROOM. And a bedroom is considered any room other than kitchen, parlor or bathroom, period. No getting around this by saying it's an office etc. Another thing that scares me about this project is the decontamination of the site. It had been put into service in 1898 and they didn't have the same industrial guidelines that we have today. What will be released into our neighborhood when demolition/excavating starts? We aren't getting new roads and we only have a few ways to exit and enter South Boston. This project would cause gridlock. If you've driven through SB during the morning/evening commute over the past 10 years you have noticed a significant difference. On a Sunday morning it took my family 10-15 minutes to drive to St Anthony's Shrine on Arch St for morning mass, now it takes us 30-45 minutes. Projects like this have a huge impact on people's day to day living. I was born and raised here. I am opposed to the additional traffic this development will cause. I am opposed to the height of this project. We are a community, a neighborhood of families. This project does not belong on First St. You are taking away our neighborhood. Just to let you know, I have tried to send this email before but the website was "unresponsive" (that was the error message I received). I have also had people ask me if your website was down. I hope this is due to the fact that you have been getting a lot of opposition to this project. |
| 08/03/17 | Nicholas | Binder | | 150 Dorchester Ave | #502 | Boston | MA | 02127 | Support | As a resident of South Boston, [reference specific neighborhood in South Boston if applicable], I am writing in support of the proposed development for 776 Summer Street.<br><br>I am excited to see a redevelopment project for the Edison Power Plant which addresses the growing nature of South Boston. This project will be a connection between South Boston and the Seaport/Design Innovation District that is currently segregated by several plots of industrial zoning. It has the opportunity to be a community center with the farmers market and other retail amenities as well as be a new hub connection for transit back to Downtown and the rest of the T system. To see this property be cleaned up and rejuvenated is a truly exciting opportunity.<br><br>We appreciate the developers continued outreach and communication with the neighborhood and look forward to the much needed development of 776 Summer Street that our neighborhood and city as a whole will be proud of.<br><br>Thank you. |

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| 08/03/17 | GAIL | MORAN | ILA LOCAL 800 | 814 EAST FIFTH STREET | | SOUTH BOSTON | MA | 02127 | Oppose | I am a lifelong resident of South Boston and I am opposed to the planned development of 776 Summer Street. I attended the meeting at the Tynan and the size and scope of this development is too much for the neighborhood. South Boston has seen too much overdevelopment in the past few years. There are too many people too few parking spots, too few buses and we can't handle much more traffic before the streets are gridlocked. I was stuck in traffic on L Street today at 930 am and this is before the expected influx of the 10,000 more cars this development is expected to bring in everyday.<br>Also as a member of Local 800 of the International Longshoremen's Association in Boston I am aware of the fact that this type of development in that location will adversely affect the Port of Boston. With the increased volume of traffic, Summer Street will be backed up both ways and the tractor trailers trying to get to and from the new haul road will be stuck sitting in traffic. One of the reasons the Port of Boston is doing as well as it is and is still a viable port is the turn-around time for the truck drivers. Conley Terminal is the only full service container terminal in New England and an important hub in the shipping of many products across the region. If the area becomes too congested, the Port could lose business and thousands of jobs would be affected.<br>This development plan is wrong for this area and after posting it on the South Boston Community Bulletin Board on Facebook I see that most of my neighbors agree. |
| 08/03/17 | Zachary | Cary | | 584 E 8th St | Apt 3 | Boston | MA | 02127 | Oppose | Dear City of Boston,<br><br>I am a resident of South Boston and want to make sure the Edison Plant Development is a positive addition to this special Boston neighborhood. The current proposal from Redgate/Hilco does not do enough to add public amenities to the neighborhood, nor does it plan for the increased population/traffic density. The current transportation infrastructure does not go far enough to accommodate the significant number of condo units included in the current plan. Car traffic and parking is already an issue and the 7 and 9 bus lines are already over capacity. I can only imagine the congestion that will result from this proposal should it be approved in its current form.<br><br>The development needs to do more for the residents of South Boston. Construction should begin with public amenities, not condo units. As a South Boston resident I want:<br><br>- Better transportation options. We live 2-3 miles from downtown and it takes us 45 minutes to get there. We need better bus service, with more frequent buses and priority for buses on the streets.<br>- Parking. Parking is already at a premium in South Boston, and 1,500 condo units will further exacerbate this issue. We need an underground parking deck(s) that are accessible to South Boston Residents. Otherwise double-parking will only get worse, which will clog up Broadway and L St and make traffic even worse.<br>- More local businesses that we can support: small retail, local gyms, daycare, butcher, restaurants, bars, grocery stores<br>- Wide sidewalks for pedestrians. We want this space to be pedestrian friendly, especially during construction. |

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| 08/03/17 | William | Eldridge | Peabody & Lane Corporation | 8 Essex Center Drive | | Peabody | MA | 01960 | Neutral | Thank you for the opportunity to comment on the proposed project @ 776 Summer Street in South Boston.<br>I have great concerns on the impact to traffic in this area that such a mega project will bring.<br>This project sits at the head waters of the working port with 15 acres being in the Designated Port Area.<br>Nothing in this project should have the ability to alter present terminal operations at either Conley Terminal or the Black Falcon Terminal. Any agreement forthcoming in this development should include an iron clad agreement for all parties to develop a long term 24/7 dedicated truck route.<br>The project should not impinge on the DPA.<br>Protection for the working waterfront is paramount! How are we to move all the goods in/out of the communities without a vibrant working port.<br>A 900 million dollar investment has been agreed to by the Federal Government, the Commonwealth and Massport to establish a vibrant working port; nothing in the development should negatively impact such an investment.<br>Our Company has worked on the waterfront since 1916 and hopes to be here for many more years. Please insure this development is proper in size, in accordance with existing rules for the DPA, and is taken slowly enough to make sure it is done correctly.<br><br>Yours truly,<br>William Eldridge<br>President |
| 08/03/17 | John | Murray | | 549 East Fourth | | South Boston | MA | 02127 | Oppose | I strongly oppose this project. South Boston is also already overdeveloped. This project is way too large in scale. It is my understanding that this site is in a designated port area designed to protect maritime industry. The city should be looking to protect and promote blue collar jobs instead of pricing out long time residents with luxury condos. |
| 08/03/17 | Razeen | Jeena | | 109 F Street | Apt 1 | Boston | MA | 02127 | Support | The development in South Boston needs to continue for the city would like to attract large companies such as GE and Amazon. I fully support this initiative and trust there is a plan to address any increased traffic related to the South Boston's increased developments. |

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| 08/03/17 | John | McGahan | Gavin Fooundation | 675 East Fourth Street | | South Boston, MA | MA | 02127 | Neutral | August 1, 2017<br><br>Tim Czerwienski<br>Boston Planning & Development Agency<br>One City Hall Square<br>Boston, MA 02201<br>bostonplans.org<br><br>Re: 776 Summer Street, South Boston (L Street Station Redevelopment)<br><br>Dear Mr. Czerwienski:<br>I am writing to express my concerns about the proposal to develop the former Boston Edison plant at 776 Summer Street in South Boston. As a local resident and President/CEO of a Gavin Foundation, I have seen many neighbors, friends, family, employees and clients forced to move because of high rents. The proposed development of the Edison Plant will have serious negative impacts on our neighborhood and fails to address the urgent need for affordable housing for working families and the elderly.<br>The proposed development includes nearly 1,600 units of housing. To address the need for affordable housing in South Boston, the developer should commit to a much higher percentage than the 15% minimum City of Boston requirement of affordable housing on site. Both lower income and middle income residents are being displaced in South Boston because of rapidly increasing real estate prices. The City's Inclusionary Development requirement is not adequate to address this critical neighborhood need because the income levels for IDP units are not low enough to address the needs of low income workers who earn less than $50,000 annually. Elderly residents are most at risk of displacement because their income is usually |
| 08/03/17 | Michael | Devine | | 9 Grimes Street | | South Boston | MA | 02127 | Oppose | The scale of this project is way too large for the area and its already diminishing infrastructure. It will be shameful if the BPDA gives the go ahead on it as it currently stands. |
| 08/03/17 | Jeffrey | Docking | | 528 E 3rd St | Unit 2 | Boston | MA | 02127 | Support | I wholly support the redevelopment of the Edison plant.<br><br>I bought a condo in South about a year ago, moving to the area from the Sullivan Square area of Somerville. Having lived through the multiple delays and eventual build of the Assembly Row project, I can tell you that the final project has brought a great set of amenities and opportunities for people to collaborate in that neighborhood. It also sparked improvements to public transportation.<br><br>I would love to see something as functional and possibly even better due to the historical site and the access to our beautiful seaport area. And I would be ecstatic to also see the MBTA pay more attention to this area, as it is embarrassingly underserving my neighborhood currently.<br><br>Please let me know if there is anything I can do to help move this project through so that we can add a great destination into the heart of South Boston for people inside the neighborhood to gather and people outside the neighborhood to visit and spend time.<br><br>Thanks! |

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| 08/03/17 | Linda | Zenga | | 367 West Broadway | | South Boston | MA | 02127 | Support | I support this project only if the South Boston Community is going to receive more than 13% of affordable units. We need more affordable housing in the South Boston Community. |
| 08/03/17 | Claire | Miller | | 611 East Fifth st | | South Boston | MA | 02127 | Support | I oppose this development plan.. no changes have been made.. The South boston neighbors deserve a voice and we need more housing available for blue collar workers . My children and my friends family would to keep our South Boston Tradition alive.. |
| 08/03/17 | Meaghan | Monahan | Gavin Foundation | 76 Dorchester St | | South Boston | MA | 02127 | Oppose | My name is Meaghan Monahan, a 4th generation South Boston Resident. I've seen South Boston ("Southie") change immensely since I was younger. Southie was a place comprised of mainly working class families; you'd walk down the street and know or know of every person you walked by. Both of my parents grew up poor, fighting for food on the table with their abundance of siblings. They have worked very hard to live comfortably in Southie, but not in any way lavishly.<br><br>When I got home from college, it seemed like everything was completely different, unrecognizable. Instead of families, Southie is filled with young urban professionals who can afford to live here. I, on the other hand, am a young urban professional who cannot afford to move out of their parents' house at the age of 25. I received my Master's of Education in School Counseling last May, but now working at a local non-profit, it's hard to imagine ever being able to live in South Boston without low-income housing.<br><br>I do the work I do because I am passionate about helping others, not because of the money. Having the opportunity to move a few blocks from the house I have lived in for 25 years would be incredible, but the issue is that there are no enough low-income units. We do not need more luxury units, we need more affordable housing with preference a for those who grew up here.<br><br>Without the opportunity low-income housing, I fear that I'll never be able to live in South Boston. I greatly appreciate your consideration for housing.<br><br>Best Regards,<br>Meaghan Monahan |

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| 08/03/17 | Hannah | Camilleri | | 675 E. 2nd St. | Apt. 2 | Boston | MA | 02127 | Support | Dear Mr. Czerwienski,<br><br>I live in South Boston and I am writing in support of the proposed development for the L Street Station at 776 Summer Street.<br><br>I live just a couple of blocks away from the site. Right now, the site is closed off from the community. Yes, the turbine halls are beautiful, but the rest of it is inaccessible, on terrain that has a HUGE amount of potential for the community. And the development team says they will restore the turbine halls - something I think would be incredible.<br><br>While I understand the concern in the neighborhood around traffic, there are two reasons I think this can be mitigated. 1- The City and developer are working together to create solutions. 2- In the next 10 years that this project is built, I imagine a city that is less connected by individual cars, and more by people biking, taking public transit, walking or ride-sharing. However, I do look forward to hearing from the team how they will be part of helping us to improve public transportation to our neighborhood.<br><br>I'm very excited about what has been proposed for the site so far, and look forward to hearing more from them as we move through the process.<br><br>Thank you!<br><br>Hannah Camilleri<br>675 E. 2nd St. Apt. 2, South Boston |
| 08/03/17 | Michael | Flaherty | | 630 East 3rd Street | | South Boston | MA | 02127 | Oppose | I'm a lifelong resident of South Boston,I live on 3rd Street between L & M,this project is way to big for our neighborhood,we are already to congested.WAY To BIG. NO GOOD |
| 08/03/17 | Alicia | Jurus | 1965 | 139 West Third St | | Boston | MA | 02127 | Oppose | This is just too much - the infrastructure will not support this type of density. It is already to hard to get in/out/and around South Boston. Also, I think it is a slap in the face of South Boston to try and shove this type of development into this location. |
| 08/03/17 | David | Przybyla | A Yankee Line, Inc. | 407 D Street | 410 | Boston | MA | 02210 | Support | With nearly 20 years in Boston (Fenway, South Boston, and now Seaport), I support the 776 Summer Street Proposed Project. I live and work in the same mile radius and would love to have the opportunity to purchase a forever spot in the best neighborhood I know. Full support from me! |
| 08/03/17 | Paul | Picciano | | 7 Linden Street | | South Boston | MA | 02127 | Oppose | The size and scope of the project is too large for the current infrastructure, specifically roads and parking. Building height will be 15 stories taller than any surrounding buildings which takes away from the neighborhood feel. |

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| 08/03/17 | Alexandra | Merriweather | | 336 E St. | Apt. 1 | South Boston | MA | 02127 | Support | Tim Czerwienski<br>Boston Planning & Development Agency<br>City Hall, 9th Floor<br>One City Hall Square<br>Boston, Massachusetts 02201<br>Re: 776 Summer Street<br><br>Dear Mr. Czerwienski,<br><br>I am a South Boston resident and I am writing in support of the proposed development at 776 Summer Street.<br><br>My fiance and I chose to buy an apartment in South Boston because we were drawn to the community. The arts and culture, the restaurants, the people - there is a tangible feeling that Southie is bustling in the best way, and I think this project is a continuation of the positive change coming to the neighborhood.<br><br>From Day 1, the development team has been interacting directly with the neighborhood, asking what we want to see, and has been transparent with us. Yes - there will be traffic impacts. But the plans for the site, which has been inaccessible for decades, offer the community many positives which will offset the transition. The community will have more waterfront space; there will be more restaurants (maybe even an open market!), shopping, and indoor and outdoor places to bring friends and family. If we work closely with the developers I think we can create a project that will really benefit everyone. I think the community should be excited to embrace positive change as outlined in this project. |
| 08/03/17 | Antonio | Saez Vieyra | | 288 bolton St. | | South Boston | MA | 02127 | Oppose | Tim Czerwienski<br>Boston Planning & Development Agency<br><br>I am concerned that the proposed development of the Edison Plant provides only the minimum required amount of affordable housing. I lacks to address the urgent need in our community for housing that is affordable to low and median income families and the elderly.<br><br>Thanking for taking my comments<br><br>Antonio Saez Vieyra |
| 08/03/17 | Antonio | Saez Vieyra | | 288 bolton St. | | South Boston | MA | 02127 | Oppose | Tim Czerwienski<br>Boston Planning & Development Agency<br><br>I am concerned that the proposed development of the Edison Plant provides only the minimum required amount of affordable housing. I lacks to address the urgent need in our community for housing that is affordable to low and median income families and the elderly.<br><br>Thanking for taking my comments<br><br>Antonio Saez Vieyra |

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| 08/03/17 | Jeanne | Flaherty | | 838 East 5th Street | | South Boston | MA | 02127 | Oppose | I don't believe the plan for the disposal of the asbestos & other hazardous waste is adequate. Further I believe this development will be too much of a disruption to an already overcrowded neighborhood. Too many cars, not enough parking, and it will only serve to further erode the fabric of this once family-rich community. |
| 08/03/17 | Joe | Casiello | ILA | 12 mount pleasant st | | Saugus | MA | 01906 | Oppose | This is way too big of a project for the area. Conley terminal has already been under constant scrutiny for truck traffic and noise which resulted in a truck bypass road and a park with sound buffer. This was the result of complaints of a small neighborhood of people who knew of this environment before they moved there. To add 1600 residential units, office space, a hotel, and retail space is reckless. The traffic will be unbearable and we do not need anymore attacks against our working and growing port. Longshoremen, truck drivers, retailers, importers/exporters, south Boston residents, commuters, beachgoers, and the city itself should all oppose this development! |
| 08/03/17 | Matthew | Watts | | 1836 Columbia Rd | | South Boston | MA | 02127 | Oppose | I am 20 years old I have been born and raised here in southie. I have seen this whole gentrification process happen as I have been growing up. Adding this many units and buildings will only make things a lot worse and a lot more congested. There will be no place for any of these people to park their car. Also with all of the people that cut through south Boston to go in town via I street or L street there is no room for all of this. The city is way to crowded and this plan just doesn't make any sense. .5 of a parking spot per unit on what continent do people own or drive half of a car it's just absurd. |
| 08/03/17 | William | Gleason | | 141 Dorchester Ave | Unit 306 | South Boston | MA | 02127 | Support | I support this plan of remediation this long neglected site and redevelopment into mixed use development and open space. This site is very well situated for much needed housing in a neighborhood now abutting thousands of jobs creating opportunity for a completely walk-able lifestyle. Keeping parking ratio low is critical as car sharing opportunities and transit improvements are the future of this Downtown Neighborhood at the end of a peninsula that does not need more single occupancy vehicles. This site has long been stated to be a serious health hazard in need of environmental remediation and we should take this opportunity to have this professional team come in and turn one problem property into a solution for our housing shortage while delivering a new interconnected neighborhood with new open space. |
| 08/03/17 | Jillian | Henrici | Resident | 906 E 4th Street | Apt. 3 | South Boston | MA | 02127 | Oppose | As a property owner and resident of the South Boston Community, I am apposing the current plans for the redevelopment of the Edison Power Plant Site. The two major concerns I have are the lack of parking spaces being provided for the large number of residential units being proposed and the height of the primary towers. 20 stories is much taller than anything in the surrounding community. I do not appose the site being redeveloped, but the shear scale and lack of for site for what the community actually needs and what the existing road ways can handle for traffic loads and parking clearly has not been evaluated sufficiently. |
| 08/03/17 | Maureen | S | | Seventh Street | | South Boston | MA | 02127 | Oppose | The scope of this project as proposed is absurd. South Boston is overburdened w/people, condos and cars as is! Rezoning from maritime use will adversely affect the Conley terminal and all that is shipped into Boston through the terminal. The roads around the Edison will be inundated 24/7 with cars - which the area will not be able to withstand. |

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| 08/03/17 | Taryn | Powers | | 8 Emmet St | | South Boston | MA | 02127 | Oppose | Good Afternoon Tim,<br><br>I am a lifelong resident of South Boston and live just two blocks away from the Edison plant with my growing family. I am 100% against all plans for residential, and commercial development on that site. The area should stay a working port.<br><br>South Boston is crowded enough and we do not need anymore residents or cars, nevermind a project of this mammoth proportion. Our neighborhood can't handle 3,000 more people. Crowds of 100 people wait at bus stops for crowded busses to drive past them every morning. Residents can't leave their homes after 5:00 pm because there are no parking spaces available after that time. We are surrounded by constant construction and BWSC ripping up our streets for months at a time. We are experiencing power outages because the old systems can't handle the demand being placed on them by all the new condos. Our historical homes have been ripped down and replaced with characterless, gigantic condo buildings.<br><br>We have had enough! We need to put a stop to the overdevelopment of South Boston. Single homes need to stop being ripped down and replaced with ugly 20 unit condo buildings. We need 24/7 resident parking in the entire neighborhood. Historical homes need to be protected.<br><br>The neighborhood needs to become more family friendly - we desperately need housing that is affordable for average income families! Growing families are forced to move out because they can't afford a place to live that has three bedrooms.<br><br>The people of South Boston have had enough with overdevelopment of our beloved neighborhood, and we will no longer allow it to happen. I am a part of a large |
| 08/03/17 | maryalice | Sutherland | | 273 Minot St | | Dorchester | MA | 02124 | Oppose | There is limited access into and out of the city. Traffic congestion on first and Summer Streets already makes what should be a 5 minute trip to the tunnel or expressway 20 or greater minutes in the am. Construction would divert traffic to Andrew Sg; Broadway Bridge; 4th St bridge; and Columbia Circle - which are already maddeningly congested in the am. This is area will NEVER be able to tolerate the construction, the rats, the traffic, the people... .<br>It is NOT a reasonable proposal. The community cannot and should not have to absorb this catastrophic infringement. In generations past we had politicians, and Richard Cardinal Cushing who insisted on not making our community a tourist area but a a place where families could thrive could relax, and most importantly be safe. |
| 08/03/17 | Stephen | Powers | | 8 Emmet Street | | South Boston | MA | 02127 | Oppose | I oppose all plans for developing this site. South Boston is crowded enough and cannot handle further overdevelopment. |
| 08/03/17 | Stephen | Powers | | 8 Emmet Street | | South Boston | MA | 02127 | Oppose | I oppose all plans for developing this site. South Boston is crowded enough and cannot handle further overdevelopment. |
| 08/03/17 | Kristin | Frechette | | West 9th | | South Boston | MA | 02127 | Neutral | Neutral as I haven't been able to attend any meetings. I support development on this site something needs to activate this space. HOWEVER, as a mother, I am very concerned about the demolition of the existing building. I cannot stress enough to please have the strongest of environmental protection on this site when demoing the existing building. I have heard stories of what used to spew out of the stacks back in the day. I can only imagine what would blow around the neighborhood if the building wasn't covered in someway. Thank you for taking the time to read our comments. |

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| 08/03/17 | benjamin | jackson | | 151 W. 6th st | unit 2 | Boston | MA | 02127 | Oppose | I oppose this project for the single concern around infrastructure in the area. As it stands today there is not enough public transportation and infrastructure to handle the population of south boston and their commute, I can only imagine what this project would do to further exacerbate that problem.<br><br>Without clear infrastructure plans in place I cannot support the addition of this traffic to the South Boston community that I call home.<br><br>Regards,<br><br>Ben |
| 08/03/17 | Mary | Long | South Boston resident | 952 East Broadway | | South Boston | MA | 02127 | Oppose | I like many long time and new residents oppose this project.<br>This is too large a project for this neighborhood.<br>A parking garage for residents and visitors would do well there and is much needed. |
| 08/03/17 | Monica | Kuczynski | | 841 Parker street | | Boston | MA | 02120 | Support | As a concerned resident of Boston, I am writing in support of the proposed development planned for 776 Summer Street.<br><br>I am glad to hear about efforts to renovate and rejuvenate The Edison Power Plant after it being an eyesore for years. Many people in the neighborhood, myself included, have been concerned about the safety of the power plant and the condition of the buildings. I also think restoring a historical part of Boston will help bring life and value to the neighborhood.<br><br>The City of Boston is one of the oldest cities in the U.S. and the home of so much history. The Edison Power Plant has some interesting history and I am in support of cleaning it up and making it a safe destination to enjoy and visit. I believe this development would be a great opportunity to expand and bring more value to the neighborhood and city.<br><br>We appreciate the developers continued outreach and communication with the neighborhood and look forward to the much needed development of 776 Summer Street that our neighborhood and city as a whole will be proud of.<br><br>Thank you.<br><br>Monica Kuczynski |
| 08/03/17 | Ashley | Balaconis | | 622 East 6th Street | | Boston | MA | 02127 | Oppose | Unnecessary build. Will cause way too much congestion in the area. Keep Southie a neighborhood. |
| 08/03/17 | Sean | Burke | | 50 Thomas Park | | Boston | MA | 02127 | Support | Love it! We need the jobs and revenue it will generate. The land is not being used at all right now, this is a no brainer. Make sure to keep the history of the site alive though. |
| 08/03/17 | Susan | Doherty | ILA | 166 Franklin st | | Arlington | MA | 02474 | Oppose | Coming from a family of longshoremen I completely oppose any new construction in South Boston. |
| 08/03/17 | Patrick | Balaconis | | 622 E. 6th St. | | S. Boston | MA | 02127 | Oppose | Project is going to be a great impact to this neighborhood that currently still has a neighborhood feel. The land is not zoned for this type of development and there is good reason for it. It can be a very important industrial area. Not nearly enough parking. |

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| 08/03/17 | Gail | Jacoby | | 61 Farragut Rd | | South Boston | MA | 02127 | Oppose | Please consider the negative impact to residents and tourists that currently enjoy the natural resources of this vibrant area. Respect that this quaint section of Boston is historically rich as well. Overstressing the infrastructure will most certainly restrict public access to beaches, parks, local business and emergency responders. |
| 08/03/17 | Vincent | Zerveskes | Resident Homeowner | 210 Dorchester Street | | South Boston | MA | 02127 | Oppose | Project is too large for site. Needs to be scaled back. Height needs to be addressed as well as additional traffic. Conley terminal is being expanded and will need to expand again twenty years from now. |
| 08/03/17 | Robert | Miller | | 611 E 5th st | | South Boston | MA | 02127 | Oppose | Logistic nightmare! The number of units and lack of parking . An environmental project to clean up that whole Edison facility,No consideration to the neighborhood. Traffic now and with the new truck bridge into Conley terminal removing 1000 plus trucks off of first st great idea. But now with this project creating another headache for the community to live with . Port of Boston is flourishing and being 3rd generation Longshoremen I would like it to keep growing . I'm oppose to that project |
| 08/03/17 | Dinna | Sinkus | | 651 E 6th St | | South Boston | MA | 02127 | Oppose | We need more affordable housing so lifetime residents can stay in their hometown |
| 08/03/17 | Marjorie | McEvoy | Resident | 895 East Broadway | | South Boston | MA | 02127 | Oppose | As a life long resident of South Boston I strongly oppose this project! South Boston is already over built. There has been no improvement in infrastructure for the added buildings and parking. Adding additional cars will make the current nightmare of trying to find parking even worse! There is also a very active port that supplies needed jobs to local residents. This port should be considered a major asset to South Boston. I cannot state more emphatically that I oppose this development |
| 08/03/17 | Catherine | Lamoureux | | 591 E 3rd | | Boston | MA | 02127 | Oppose | To Whom it May Concern,<br><br>I am a resident of South Boston and want to make sure the Edison Plant Development is a positive addition to the neighborhood. The current proposal from Redgate/Hilco does not do enough to add public amenities to the neighborhood or plan for the increased density. There are too many condo units in the plan and the current transportation infrastructure cannot accommodate them (the housing number should be cut in half). Traffic is already an issue and the 7 and 9 bus lines are over capacity.<br><br>The development needs to do more for the residents of South Boston. Construction should begin with public amenities, not condo units. South Boston residents want:<br>More open green space. We want parks to enjoy and places to gather, walk our dogs, and play sports.<br>Better transportation options. We live 2-3 miles from downtown and it takes us 45 minutes to get there. We need better bus service, with more frequent buses and priority for buses on the streets.<br>More local businesses that we can support: small retail, local gyms, daycare, butcher, restaurants, bars, grocery stores<br>Wide sidewalks for pedestrians. We want this space to be pedestrian friendly, especially during construction.<br>Contained construction. This development will take over 10 years and we do not want the neighborhood to feel like a construction site during that time.<br>A local marketplace. The plans for the Turbine Hall turned marketplace sound great.<br>Access to the waterfront. We want to enjoy the waterfront and have open public space along the waterfront.<br>I am in support of this plan if the City holds the developers accountable to the |

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| 08/03/17 | Karen | Florentino | | 590 e 4th at | | South boston | MA | 02127 | Oppose | Project too large for existing area. Will cause hardship to many of current residents.<br><br>Port needs to remain availabe |
| 08/03/17 | Eugene | Stancato | International Longshoreman Association | 6 Lenoxdale Ave | | Dorchester | MA | 02124 | Oppose | I am opposed to the plan at 776 Summer Street. The main reason is because of the amount of traffic it will cause it such a small area. I work as a longshoreman at Conley Terminal and part of the reason we are a very desirable port is because truckers have the ability to get in and out with imports and exports in a half hour. When 10000 people are coming and going everyday from this 8 block area at 776, truckers will not be able to get in and out like they once used to. The people that are pulling for this plan to happen think it won't affect our work, but it will affect our work dramatically. |
| 08/03/17 | Leslie | N | | 32 g st. | | Boston | MA | 02127 | Support | Great project, will do a lot for that area! |
| 08/03/17 | Chris | McAvinn | BRG | 69 Old Harbor St | 3 | Boston | MA | 02127 | Support | I'm really excited about this project, I think it will bring a lot of life to the area and be great for the neighborhood. |
| 08/03/17 | Paige | Bryant | | 1 M Street Place | | Boston | MA | 02127 | Support | I am a resident of South Boston and want to make sure the Edison Plant Development is a positive addition to the neighborhood. The current proposal from Redgate/Hilco does not do enough to add public amenities to the neighborhood or plan for the increased density. There are too many condo units in the plan and the current transportation infrastructure cannot accommodate them - the housing number should be reduced SIGNIFICANTLY. Traffic is already an issue and the 7 and 9 bus lines are over capacity.<br><br>The development needs to do more for the residents of South Boston. Construction should begin with public amenities, not condo units. South Boston residents want:<br><br>- More open green space. We want parks to enjoy and places to gather, walk our dogs, and play sports.<br>- Additional parking<br>-Better transportation options. We live 2-3 miles from downtown and it takes us 45 minutes to get there. We need better bus service, with more frequent buses and priority for buses on the streets.<br>-More local businesses that we can support: small retail, local gyms, daycare, butcher, restaurants, bars, grocery stores, wide sidewalks for pedestrians.<br>-We want this space to be pedestrian friendly, especially during construction.<br>-Contained construction. This development will take over 10 years and we do not want the neighborhood to feel like a construction site during that time.<br>-A local marketplace. The plans for the Turbine Hall turned marketplace sound great.<br>-Access to the waterfront. We want to enjoy the waterfront and have open public space along the waterfront. |
| 08/03/17 | Kelly | Conroy | | 934 E 4th st | | South Boston | MA | 02127 | Oppose | Too big of a project. Not enough parking. South Boston is already too crowded. Land contaminated. |

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| 08/03/17 | David | Bryant | | 1 M Street Place | | Boston | MA | 02127 | Support | Hi,<br><br>I am a resident of South Boston and want to make sure the Edison Plant Development is a positive addition to the neighborhood. The current proposal from Redgate/Hilco does not do enough to add public amenities to the neighborhood or plan for the increased density. There are too many condo units in the plan and the current transportation infrastructure cannot accommodate them (the housing number should be reduced significantly). Traffic is already an issue and the 7 and 9 bus lines are over capacity.<br><br>The development needs to do more for the residents of South Boston. Construction should begin with public amenities, not condo units.<br><br>South Boston residents want:<br><br>-More open green space. We want parks to enjoy and places to gather, walk our dogs, and play sports.<br>-More parking<br>-Better transportation options. We live 2-3 miles from downtown and it takes us 45 minutes to get there. We need better bus service, with more frequent buses and priority for buses on the streets.<br>-More local businesses that we can support: small retail, local gyms, daycare, butcher, restaurants, bars, grocery stores<br>-Wide sidewalks for pedestrians. We want this space to be pedestrian friendly, especially during construction.<br>-Contained construction. This development will take over 10 years and we do not want the neighborhood to feel like a construction site during that time. |
| 08/03/17 | Kelly | Conroy | | 934 E 4th st | | South Boston | MA | 02127 | Oppose | Too big of a project. Not enough parking. South Boston is already too crowded. Land contaminated. |
| 08/03/17 | Ryan | Harwood | None | 368 w 4th | | South Boston | MA | 02127 | Oppose | Please do not allow this to be be built. This is completely unneeded in that area. Please force them to build this in an area that can fit it |
| 08/03/17 | John | Conroy | | 934 E. 4th St. | | South Boston | MA | 02127 | Oppose | This project is too big for our neighborhood. We have been raped by developers and it is time for it to stop. We all know this land is contaminated as well. Our community is over populated as is. This is not fair and being shoved down our throats. |

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| 08/03/17 | Kevin | Coyne | | 615 East 6th Street | | Boston | MA | 02127 | Oppose | I vehemently oppose the planned development on this site in its present size/scale. South Boston has experienced such tremendous growth over the past decade and we are already seeing that we do not have the infrastructure to support another project of this size. With the explosion of the seaport and fort point area – The local streets cannot handle the volume from all areas trying to gain access to the new "Hot Spots" Development needs to be balanced with quality of life and that has not been taken into consideration.<br><br>The streets are bursting with traffic at all times of the day - Then lanes have been taken away to add bicycle lanes which have further exasperated the traffic problem.<br><br>I am fully in support of change and understand that some development will improve this unsightly area - But a project of this size/scale is totally absurd. We cannot handle it period. Please listen to the will of the people that live here both old residents and new.<br>Thank you<br>Kevin Coyne –<br>Lifelong Proud South Bostonian |
| 08/03/17 | John | Wlodarek | | 745 E Broadway #3 | | Boston | MA | 02127 | Support | Support! |
| 08/03/17 | Kelly | Conroy | | 934 E 4th st | | South Boston | MA | 02127 | Oppose | Too big of a project. Not enough parking. South Boston is already too crowded. Land contaminated. |
| 08/03/17 | michael | manning | Southie resident | 120 I street | | south boston | MA | 02127 | Oppose | As a 3rd generation longshoreman this location should be used for the port that is next door. There will have heavy truck traffic that will lead to conflict with new residents and a future push to limit the ports operations at a time there is a need to expanded the port to keep relevant with the other East Coast ports that now service larger ships. If port of Boston is limited in it's operations because of new residential use close by, this will lead to shippers pulling out of the port and lose of jobs!<br>If this does go thru, the developer should be told must install windows and walls that are sound proof and also have a sound wall set up like there is for neighborhood close to the highway and then hopefully there will be no conflict between the port and new residents. |
| 08/02/17 | Colin | Reposa | | 881 East 2nd Street, Unit 6 | | South Boston | MA | 02127 | Support | To whom it may concern,<br><br>As a resident of City Point in South Boston I am strongly in favor of the 776 Summer Street Project.<br><br>I am proud to live in a part of Boston that continues to prosper and adapt. This redevelopment will bring several community benefits for years to come.<br><br>I am also very impressed by the developers consistent attempts to discuss this project with the neighborhood and get everyone's opinion.<br><br>Thank you. |

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| 08/02/17 | Erin | Galvin | | 881 East 2nd Street, Unit 6 | | South Boston | MA | 02127 | Support | As a resident of South Boston City Point, I am writing in support of the proposed development for 776 Summer Street.<br><br>I look forward to the redevelopment of this property with all the new infrastructure, jobs, and community benefits it will bring. We are truly excited about the new retail, restaurant, and hotel space this new development will bring to our neighborhood. The investment in our neighborhood is exactly what we want to see as residents of City Point.<br><br>We appreciate the developers communication with the progress of the development and look forward to the development of 776 Summer Street.<br><br>Thank you. |
| 08/02/17 | Sam | Crossan | | 131 West Third Street | Apt. 2 | South Boston | MA | 02127 | Support | To Whom This May Concern,<br><br>I am writing this letter in support of the 776 Summer Street project. The proposed redevelopment of the former Boston Edison site is an innovative and thoughtfully designed project that will transform an existing eyesore and connect South Boston with the Seaport; long a barren wasteland of underutilized prime real estate. By providing pedestrian access to the waterfront and a host of new retail amenities, the project is creating an entirely new micro neighborhood with ancillary benefits to all residents in the immediate vicinity.<br><br>I am also writing in support of the development team, Hilco & Redgate both of whom have exemplary track records with expensive and challenging developments, and also with sites that require environmental remediation. This team is the right group to lead an expensive and complex project due to their development experience and local relationships in both the public and private sectors. While I continue to look forward continued tweaks to the development plan, I'm confident the development team can work within the confines of the original plan and incorporate neighborhood feedback to generate a mutually agreeable final development plan to create a financially feasible project that will benefit both new residents, commercial tenants and existing neighbors. As a South Boston resident, I look forward to completion of the project and enjoying the new benefits to the neighborhood<br><br>Thank you, and please feel free to call with questions or comments.<br><br>Regards, |

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| 08/02/17 | James | Zografos | Neighborhood Resident | 279 W 3rd St #1 | | Boston | MA | 02127 | Support | As a resident of South Boston, I am writing in support of the proposed development for 776 Summer Street.<br><br>I am proud to live in a city that continues to grow and flourish and am looking forward to seeing the redevelopment of this property with all the community benefits it will bring. This mixed-use development is the exact kind of enrichment and investment in our neighborhood that we as residents are truly excited about.<br><br>We appreciate the developers continued outreach and communication with the neighborhood and look forward to the much needed development of 776 Summer Street that our neighborhood and city as a whole will be proud of.<br><br>Thank you. |
| 08/02/17 | Erin | Cooley | | 637 East First Street | | Boston | MA | 02127 | Oppose | Our condo building is an immediate abutter to the new project outlined here. We are highly concerned that the new projects (residential, hotel, retail) will bring a level of traffic to our area that we already cannot handle. Getting down Summer Street is a nightmare already no matter what time of day, but especially during commuting hours.<br>Similarly, we need to take a left out of our driveway to get onto East 1st. This already proves dangerous with cars parked blocking our view and the amount of traffic coming from both sides of the street. With an entrance to the new property on East 1st across from M street park, we worry that making a left turn our of our building or out of M street will be even more dangerous and difficult.<br><br>Further, we are already lacking street parking in the area and there does not seem to be adequate amount of parking spaces for the residential units being proposed. We can't handle more street parking.<br><br>Finally, it has not be clear to us abutters how the big the scale of this demolition would be and what impact it would have on us residents. Will streets be shut down? Will lanes be closed? How long will we have to endure construction noise? Is it actually safe (wasn't the Edison building a chemical plant of some sort)? There are a lot of unanswered questions about the construction of this project that I feel we are entitled to.<br><br>I've also heard concerns as to whether the infrastructure of the roads along Summer Street, the airport, Mass Pike, and 93 tunnels can actually handle the number of cars, trucks, etc. that would be coming to a from the area with this new project. |

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| 08/02/17 | Brooke | Anable | | 845 E. 4th Street | Apt 1 | South Boston | MA | 02127 | Support | Tim Czerwienski<br>Boston Planning & Development Agency<br>City Hall, 9th Floor<br>One City Hall Square<br>Boston, Massachusetts 02201<br>Re: 776 Summer Street<br><br>Dear Mr. Czerwienski,<br><br>I am a South Boston resident and I am writing in support of the proposed development for the L Street Station at 776 Summer Street.<br><br>I attended one of the L Street charrettes and was excited to learn the details of the proposal. Reusing and saving pieces of our past on this old industrial site is very important to me. There have been lots of new developments in the neighborhood, but most are teardowns or new construction. I appreciate that the team developing this site is honoring and respecting our maritime history, they seem committed to keeping other artifacts on the site, too which will make the end result more authentic and appealing.<br><br>I know there has been some worry in the neighborhood about traffic, and I share that concern, but I also understand we aren't at the point in the public review process where specific solutions are on the table, yet. I look forward to hearing from the team how they will be part of helping us to improve public transportation to our neighborhood. |
| 08/02/17 | Stephen | Walsh | | 8 Peters Street | Unit 1 | Boston | MA | 02127 | Support | As a resident of City Point in South Boston, I am writing in support of the redevelopment of the Edison Power Plant site at 776 Summer Street. The proactive community engagement and public access to the site for tours that Redgate and Hilco provided show that they are respectful of the neighborhood and want to use the redevelopment as a means to enhance our already vibrant neighborhood. The clean up and re-purposing of the stagnant area will serve to enhance the neighborhood and provide new benefits to the community. This type of investment in the neighborhood brings with it a lot of opportunity for residents. Two caveats to the plans that need to be addressed regarding the proposed 1588 new residential units are 1) the amount of parking provided for that many units should be increased to ~1588 spots from the ~978 proposed spots since each unit would likely bring at least one car, and 2) the bus/public transportation issue needs to increase the capacity since the current state is nearing maximum rider capacity. Acknowledging these two parking/transportation issues, I am wholeheartedly in support of the redevelopment and look forward to the continued community engagement that Hilco and Redgate have already provided. This is a great opportunity for the neighborhood to continue to flourish while maintaining its character and vibrant living experience. |

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| 08/02/17 | Marc | Waldman | property abutter | 637 East 1st Street | Unit 201 | Boston | MA | 02127 | Support | I do believe the proposal has far too many units for the location, particularly when you take into account the very limited two access points on Summer and First Streets. The addition of a traffic light at Elkins and Summer will be the third traffic light within a quarter mile stretch of Summer Street. This will inevitably back up Summer Street which is already congested between First and Broadway. First Street at M Street would not be able to absorb significant traffic this close to the Frist and Summer Street traffic light and would make getting out of our driveway at 637 E. First virtually impossible.<br><br>The developer states that there may not be that many cars associated with residents at the site, but there would be a significant number of additional cars associated with commercial facilities at the site. The addition of a hotel would also add a large number of vehicles to the site. People do not walk to hotels when they are visiting and even if they arrive by taxi or Uber, this is a significant addition to the vehicle trips in and out of the site.<br><br>I am also concerned with the impact of the large scale demolition to be done at the site. This will have a harmful impact on ours, and the other buildings that directly abut the site on First Street. A mitigation and remediation fund will have to be established to correct for these harmful impacts. |
| 08/02/17 | Matt | Border | | 637 East 1st St Unit 106 | | Boston | MA | 02127 | Support | I am in support of the development of this area, which I feel will further improve the surrounding community. However, there should be more planned parking. South Boston already has a significant parking shortage, with visitor parking for family/friend visitors all but eliminated. This proposal of 1600 units with 987 parking spaces is vastly insufficient. Even if every unit was a 1 bedroom unit, there would be a shortage of over 600 parking spaces. Assuming that residents who move in will opt to live without a car is not a solution. The shortage will likely be much greater with increased bedroom units and any two car families. This will cause a significant parking shortage with no apparent solution.<br>Similarly, I would like to see proposed solutions for MBTA infrastructure. The proposal highlights the close proximity of the Silver Line and South Station, in addition to bus routes. However, the South Boston MBTA infrastructure is already maxed out. Wait for a bus at 8:00 am on any given weekday and you will likely be passed by several buses before you get picked up. More people are moving in every day with other development projects. A development of this size will paralyze the current infrastructure and should be responsible for proposing solutions to the MBTA infrastructure, such as additional bus routes, or a new Silver Line route. With this many new residents the East Side South Boston MBTA infrastructure will be overwhelmed and unusable.<br>Lastly, I live in a building directly abutting this project. I am concerned about the impact of large scale demolition on my condominium. What considerations will be made to ensure the impact on abutting buildings is minimized? For example, noise & construction hours, access point for construction vehicles (will it clog up East 1st), impact of massive demolition on abutting building structure, how will debris/contaminants from construction be contained? My residence was damaged by recent construction project and this is a real concern. |

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| 08/02/17 | Samuel | Browne | | 720 East 2nd St | #1 | Boston | MA | 02127 | Support | As a resident of South Boston, at 720 East 2nd Street (one block from the project), I am writing in strong support of the proposed development for 776 Summer Street.<br><br>I have lived in the South Boston neighborhood for 10 years and have seen a significant and much-needed transformation of the area, which has benefitted from developers that have kept the community in mind by delivering product that usually meets a high aesthetic quality, at a pace to match the immense population growth. After reviewing plans for the project and hearing both pros & cons from the community, I'm confident this project will meet the high level of quality expected.<br><br>In addition, I'm hopeful that other developers in the area will mirror the approach taken by the 776 Summer Street development team by meeting with the community early and often in order to address the concerns of neighbors, and allowing for their input into the project.<br><br>Despite the level of real estate growth in South Boston, more high quality development is needed to continue to meet the needs of a growing population. This project, which will replace a giant eyesore in the neighborhood and utilize an underdeveloped section of the neighborhood, will add a tremendous amount of value.<br><br>Feel free to contact me for any further feedback, I would be happy to elaborate on why I think this project will be a great fit for the neighborhood.<br><br>Thank you for your consideration,<br>Sam Browne<br>720 East Second Street, #1 |

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| 08/02/17 | Thomas | Flaherty Jr. | Resident | 798 East Third Street | Unit C | South Boston | MA | 02127 | Oppose | Former city leaders have pledged to avoid the Manattenization of South Boston, but it seems this developer has other plans. It is my hope that the current city leaders aren't caving to the whims of out of town blow-ins looking to line their pockets with OUR part of town. This project is not beneficial to the residents of the neighborhood. The area is already overpopulated and the family element in the neighborhood is disappearing. More high rise condos are exactly what the neighborhood does not need. The traffic is a huge factor. Mr. Cox, like many developers that the BRA has allowed to trample over the neighborhood, gives us the song and dance about how the residents of this development will use public transportation. What public transportation? For quite a while, the elected have been asking for more buses to handle the overcrowded bus stops in SB and have been told NO by the MBTA. I find it hard to believe that people will pay the amount these condos will cost and decide to wait for a bus. As for Manhattenizing the neighborhood with high rises, it is unacceptable. Redgate is proposing at least three buildings with heights of at least 200' feet. What about the promises made regarding high rises when the Waterfront was being developed? No high rises along Summer Street. This neighborhood was promised long ago that it would not be Manhattenized. It is obvious that some in the IAG and on the CPNA have been, for lack of better term, bought off with promises of resources for their own personal agendas. This project negatively impacts us and people who are supposed to look out for their neighbors have been blinded by the goodies promised by Redgate. The common area, lawn, ice rink, concert venue is not welcome. People living in the Lower End will tell you of the noise problem created by the Lawn on D Street and we don't want it here. Parking, already a nightmare will cease to exist for the people already in the neighborhood as visitors to this complex will seek to park in spots needed by the residents. Redgate offers nothing in the way of mitigation or creativity that will benefit South Boston. Just like the rest who blow in, they are only seeking to take the money and run. After the raising of the building |

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| 08/01/17 | Kaitlin | Hildreth | Boston Children's Hospital | 192 Tudor Street, Unit 3 | | Boston | MA | 02127 | Support | Hello 776 Summer Street Project Committee,<br><br>My name is Kaitlin Hildreth and I am writing to express my unwavering support for the enhancement of the proposed project.<br><br>I am a 25-year-old Registered Nurse in the Cardiac Intensive Care Unit at Boston Children's Hospital and have been a South Boston resident for the past two years. I just recently moved from the east side to the west side and plan to stay for at least the next five years.<br><br>I feel this project will continue to positively transform Boston as a desired destination for both visitors and community members.<br><br>The waterfront area spanning from the tip of Castle Island running through the Seaport and into Boston Harbor is one of the most beautiful and sought after areas. Friends, coworkers, family members, even strangers will able to use this area as a spot somewhat removed from the hustle and bustle of the city streets while having all the attractions the Hub of the city has to offer - indoor and outdoor space, retail shops & other amenities, and residential areas.<br><br>Secondly, the proposed project will add a new flavor to the South Boston community. Predominantly inhabited by residents ages 23-40 - booming with young professionals and new families - 776 Summer Street will be a prime attraction for daily, nightly and weekend events. 776 Summer Street will welcome a new gateway to enhancing, expanding and developing lifelong relationships.<br><br>Lastly, Boston is a city etched in tradition, loyalty and respect. I am confident this |
| 08/01/17 | Alison | Hunt | | 803 Summer St. | | Boston | MA | 02127 | Support | I work directly across the street from the power plant, at 803 Summer St. I support the project, with conditions. First, I am concerned about hazards (such as dust and asbestos) that could be present in the air while demolition is ongoing. We need to have, in writing, the steps that will be taken to protect individuals from such hazards. Additionally, I take public transportation and the #7 bus stop is located right in front of the power plant. We would need to have the bus stop relocated to a safe and protected area that is out of harm's way. And with the continued development in South Boston and the Seaport District, better and more frequent public transportation will be a must. Public transportation is unsatisfactory even now, long before this project will reach completion. |

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| 08/01/17 | Eric | Walden | | 9 Thomas Park, Unit 4 | | Boston | MA | 02127 | Support | As a resident of South Boston, I am writing in support of the proposed development for 776 Summer Street.<br><br>I am proud to live in a city that continues to grow and flourish and am looking forward to seeing the redevelopment of this property with all the community benefits it will bring. This mixed-use development is the exact kind of enrichment and investment in our neighborhood that we as residents are truly excited about.<br><br>We appreciate the developers continued outreach and communication with the neighborhood and look forward to the much needed development of 776 Summer Street that our neighborhood and city as a whole will be proud of.<br><br>Thank you. |
| 08/01/17 | David | Hayes | BSC Companies, Inc | 803 Summer Street | | Boston | MA | 02127 | Support | Our company is located directly across Summer Street from 776 Summer in the King Terminal complex. In general I am supportive of this well-planned project by a reputable development team. Some specific concerns for our office of approx. 70 employees include:<br>Control of nuisance/environmental issues during demolition & construction, especially noise and dust.<br>Management of traffic during construction to ensure no additional delays in an already congested area.<br>Improved public transportation including additional buses, and the near-term addition of a developer funded shuttle to/from North Station that would help to reduce the number of single occupancy vehicles used by commuters in the King Terminal complex and at the FedEx facility.<br>Restoration of the MBTA bus shelter, across from 803 Summer, that was removed last year, with safe pedestrian crossing of Summer Street. |
| 08/01/17 | Patrick | Joyce | | 15 M Street | Unit 3 | South Boston | MA | 02127 | Support | As a resident of South Boston that lives less than a block away from the current proposed development at 776 Summer Street, I am writing in support of the project. The Edison Power Plant has been an eyesore for years and I am very excited about the potential redevelopment of the site. Having a team come in to not only safely clean up the property, but also restore some of the historic components, will bring life and vitality back into that part of the neighborhood. I especially appreciate the developer's willingness and forward thinking to reach out to the residents of South Boston and ask for their input to this project. I think that this will be a great development that the entire South Boston community will be proud of. |

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| 08/01/17 | Nicole | Zografos | Neighborhood Resident | 279 W 3rd St #1 | | Boston | MA | 02127 | Support | As a resident of South Boston,specifically West 3rd Street, I am writing in support of the proposed development for 776 Summer Street.<br><br>The Edison Power Plant has been an eyesore for years and I am looking forward to the clean up and rejuvenation of the site. Many in the neighborhood have been concerned about the safety of the power plant, given the state of disrepair a lot of the buildings are in. Having a team come in to not only safely clean up the property, but also restore some of the historic components, will bring life and vitality back into that part of the neighborhood.<br><br>As a homeowner in the neighborhood, we appreciate the developers continued outreach and communication with residents and look forward to the much needed development of 776 Summer Street that our neighborhood and city as a whole will be proud of.<br><br>Thank you. |
| 08/01/17 | Chad | Rippere | | 131 Sydney Street | Unit 3 | Boston | MA | 02125 | Support | I work at 803 Summer Street, across the street from the power plant. Now, with the power plant, there's a static, dead building blocking my view, growing weeds through sidewalk cracks, and just taking up space. This project will bring life and vibrancy to block, people moving in and out of area, and reasons and ways to come and go from the area. Shops, residences, and transportation options, including multiple covered bus stops, would be a boon to the area and neighborhood. |
| 07/31/17 | Chris | Chalifour | | 637 E 1st Street | #205 | Boston | MA | 02127 | Support | Tim,<br><br>I am a resident of South Boston and want to make sure the Edison Plant Development is a positive addition to the neighborhood. The current proposal from Redgate/Hilco does not do enough to add public amenities to the neighborhood or plan for the increased density. There are too many condo units in the plan and the current transportation infrastructure cannot accommodate them (the housing number should be cut in half). Traffic is already an issue and the 7 and 9 bus lines are over capacity.<br><br>The development needs to do more for the residents of South Boston. Construction should begin with public amenities, not condo units. South Boston residents want:<br><br>* More open green space. We want parks to enjoy and places to gather, walk our dogs, and play sports.<br>* Better transportation options. We live 2-3 miles from downtown and it takes us 45 minutes to get there. We need better bus service, with more frequent buses and priority for buses on the streets.<br>* More local businesses that we can support: small retail, local gyms, daycare, butcher, restaurants, bars, grocery stores<br>* Wide sidewalks for pedestrians. We want this space to be pedestrian friendly, especially during construction.<br>* Contained construction. This development will take over 10 years and we do not want the neighborhood to feel like a construction site during that time.<br>* A local marketplace. The plans for the Turbine Hall turned marketplace sound great.<br>* Access to the waterfront. We want to enjoy the waterfront and have open public |

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| 07/31/17 | Michael | Greeley | homeowner | 195 West Second Street | | South Boston | MA | 02127 | Support | My wife and I live with our son on West 2nd between B and C.<br>I support this team's vision for the Boston Edison site. We are an example of a family that would like to stay in Southie for as long as possible. As homeowners, we have a vested interest in seeing the neighborhood continue a balanced, positive and thoughtful evolution. This project will replace an eyesore, environmentally challenged power plant and bring to the neighborhood a wonderful mixed use development. The windswept, industrial and pedestrian-unfriendly site will be greatly improved, opened up to the public and provide local families with a place to eat, recreate and simply, walk around! If you live where we do, you know that the walkability of our neighborhood is not great - uneven, disappearing sidewalks and obstacles abound. We have a young son and we try to be outdoors as much as possible. Opening this site up to the public will expand the opportunity for Southie residents to be active and have a mixed use environment that interacts with the people who live here. I think it is clear that the team behind this project is ambitious and wants to deliver something which is positive for the community. I fully support their balanced vision and hope that my neighbors can take a long-term view of this plan. Thank you, Mike Greeley |
| 07/31/17 | David | Douvadjian | | D | | Boston | MA | 02127 | Support | As a resident of D Street in South Boston I think this project will add much needed amenities to the area. |
| 07/31/17 | Hanna | Heycke | | 675 E. 2nd St. | Apt. 2 | Boston | MA | 02127 | Support | Dear Mr. Czerwienski,<br><br>I am a resident of South Boston and I am writing in support of the proposed development at 776 Summer Street.<br><br>I live just 2 blocks from the site. I love what I've seen from the developer so far - the focus on arts and culture, waterfront outdoor space, more local retail/restaurants, and especially the potential for an open market. As the rest of Boston grows, Southie needs to be ready to grow with it, and a project like this that represents what the community wants/has asked for, and that embraces the site's industrial past, is the type of project we need.<br><br>I've been happy to see the developer make such an effort to make a project appealing to the neighborhood. Can't wait to see the project come to live at 776 Summer Street!<br><br>Thanks!<br><br>Hanna Heycke<br>675 E. 2nd St. #2, South Boston 02127 |
| 07/31/17 | Stephanie | Steele | | 265 E Street | | Boston | MA | 02127 | Support | I think this is going to be a great development for the city! |

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| 07/31/17 | Mike | Gill | | 59 Emerson Street | Apt. 2 | South Boston | MA | 02127 | Support | Dear Mr. Czerwienski,<br><br>I am writing in support of the proposed development at 776 Summer Street.<br><br>As a Southie resident, I've been excited to see the plans for 776 Summer Street. For too long, the site hasn't been in use, and for a neighborhood that would so benefit from open space and places to eat, walk, and meet, it seems like the perfect opportunity. While I know others have expressed discontent at the number of units, I think there is a clear need in the community for more housing - so to me, I think its more than appropriate. I look forward to being involved in the project moving forward.<br><br>Thanks!<br><br>Mike Gill<br>59 Emerson Street, South Boston 02127 |
| 07/31/17 | Bryan | Walsh | Resident | 412 E 3rd Street | Unit 1 | Boston | MA | 02127 | Support | Hi, as a 5 year resident of South Boston, I have watched my neighborhood develop tremendously in the short time I have been here. I believe the proposed development for 776 Summer is a tremendous plan, and I am extremely supportive of the project. The existing power plant has been an eyesore for as long as I can remember (even before my South Boston days), and this area of Southie is due for an overhaul. It is on the outskirts of what is the residential neighborhood, and immediately adjacent to the ever growing Seaport District, which seems to be a perfect parcel for development.<br><br>The mixed use develop would enrich an area in Southie directly on the water. The proposed open space along with the mixed use develop would bring people to a part of the City that is really never seen with the abandoned power plant. The location of the site does not seem to impact residential parking, as it is far enough away from the true residential streets.<br><br>I appreciate the developers plan, and continues outreach to the community. I myself am looking forward to a great project, and exciting things to come! Thank you |
| 07/31/17 | Danielle | Simbliaris | Transwestern | 87 I Street | #2 | Boston | MA | 02127 | Support | This is one of very few areas in South Boston that is underutilized and a complete eye-sore to the community. The proposed project will unlock a major piece of Southie's East Side neighborhood for residential, new restaurants and access to the waterfront. It will also redefine views from the Financial District. While the need for more buses in the South Boston neighborhood continues to be a major issue, and one that should be addressed by the City, this project should not be hinged on the lack of transportation. Much of the community will walk to the site or take Uber there, as they do now at almost every major restaurant on the West Side (Lincoln, Loco etc.). |
| 07/31/17 | ROY | SANDEMAN | TRANSWESTERN | 265 Emerson Street | APT. 4 | BOSTON | MA | 02127 | Support | As a South Boston (east side) resident for almost 6 years now I can't wait for this project to move forward, bringing vibrancy and appeal to what has to be Boston's biggest eye sore. All of the proposals I have heard of sound fantastic and I am looking forward to seeing what the future brings. |

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| 07/31/17 | Rebecca | Rossiter | | 683 East Second Street | | Boston | MA | 02127 | Support | As a resident of South Boston, I am writing in support of the proposed development for 776 Summer Street.<br><br>When I first heard of the plans to redevelop this property, I likely shared other resident's questions and concerns. However, there has been so much open communication between the developers and the community that those uncertainties have turned into anticipation. This continued transparency has truly made it feel like I am a part of the future of this place.<br><br>The Edison Power Plant has certainly been an eyesore for many years so one would think, remove it all. The objective does not appear to be to quickly flip this site for financial gain. Instead, the developers have attentively considered how they can best maintain and restore what holds the most historical value while transforming the rest into something the entire community can enjoy year-round.<br><br>With anything new, there will be people on both sides of the fence, but for me, this project stands out from the rest. I do not remember the last time a piece of Boston was purchased and the most significant consultant on the project were the people in the neighborhood. I am thankful for that thoughtfulness and I cannot wait to have a beautiful place to enjoy right in my backyard! |
| 07/31/17 | Sam | Hallowell | | 584 E Third Street | Apt 7 | Boston | MA | 02127 | Support | I am in support of the redevelopment of the obsolete and abandoned power plant and believe the Hilco/Regate team will do a tremendous job in renovating and reinvigorating the area. |
| 07/31/17 | Sam | Hallowell | | 584 E Third Street | Apt 7 | Boston | MA | 02127 | Support | As a resident of South Boston on E Third Street, I am writing in support of the proposed development for 776 Summer Street.<br><br>I am proud to live in a city that continues to grow and flourish and am looking forward to seeing the redevelopment of this property with all the community benefits it will bring. This mixed-use development is the exact kind of enrichment and investment in our neighborhood that we as residents are truly excited about.<br><br>We appreciate the developers continued outreach and communication with the neighborhood and look forward to the much needed development of 776 Summer Street that our neighborhood and city as a whole will be proud of.<br><br>Thank you. |

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| 07/31/17 | Margaret | A | | 868 E 5th St | Unit 3 | Boston | MA | 02127 | Support | The South Boston area has long time held a reputation for being somewhere where young adults choose the fun environment and alive atmosphere over the convenience of living closer to the heart of the city. While this has drawn bars and restaurants to some extent we don't have the same city life that the inner city does. People end up having house parties, gathering in small areas when the weather forbids the outside areas. We need a space to be proud of. South Boston houses many of the cities finest business professionals, students, athletes and more. Its about time South Boston has a hub to call home and a place where the city comes to. South Boston has made a reputation of its own without having the amenities of the city, imagine what it could be with a development like the 776 Summer Street proposed development. It could be great. |
| 07/31/17 | Clinton | Mason | | 1514 Columbia Rd unit 1 | | Boston | MA | 02127 | Support | As a new homeowner of South Boston and Resident for the past couple years, I fully support the addition to the neighborhood. This would eliminate a building that has mainly been an eyesore for many years, and turn this into something that help further boost the economy. With the addition of companies such as Reebok and GE to the area, there will be an increased need for more residences, restaurants, and parking. This will certainly help with that. |
| 07/31/17 | Dave | Dombroski | | 533 Columbus Ave | Apt. 12 | Boston | MA | 02118 | Support | As a former resident of East 1st street and City Point Court I think that this development would be a welcome addition to the area and turn what is as of now completely unused real estate and turn it into something positive and enriching for the area.<br><br>While living so close to 776 Summer Street I always wished that this fantastic piece of property, that so links South Boston to the Seaport was doing more than just existing. To hear that there is an effort to pump life into this space and fully realize the potential is very encouraging to hear. I hope the plans move forward as swiftly, and responsibly as possible.<br><br>Dave |
| 07/31/17 | Gillian | Hutchison | | 652 Dorchester Ave 2nd Floor | | Boston | MA | 02127 | Support | As a resident of South Boston, Andrew Station area, I am writing in support of the proposed development for 776 Summer Street.<br><br>I am proud to live in a city that continues to grow and flourish and am looking forward to seeing the redevelopment of this property with all the community benefits it will bring. Specifically, I am most excited about the open space and areas for public use that the developers have shared with our neighborhood. Having a safe place for families and children to visit that is nearby with so many amenities is not only incredibly exciting for our neighborhood but also terribly needed.<br><br>We appreciate the developers continued outreach and communication with the neighborhood and look forward to the much needed development of 776 Summer Street that our neighborhood and city as a whole will be proud of.<br><br>Thank you. |

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| 07/31/17 | Leah | Strickling | | 652 Dorchester Ave 2nd Floor | | Boston | MA | 02127 | Support | As a resident of South Boston, Andrew Station area, I am writing in support of the proposed development for 776 Summer Street.<br><br>I am proud to live in a city that continues to grow and flourish and am looking forward to seeing the redevelopment of this property with all the community benefits it will bring. Specifically, I am most excited about the open space and areas for public use that the developers have shared with our neighborhood. Having a safe place for families and children to visit that is nearby with so many amenities is not only incredibly exciting for our neighborhood but also terribly needed.<br><br>We appreciate the developers continued outreach and communication with the neighborhood and look forward to the much needed development of 776 Summer Street that our neighborhood and city as a whole will be proud of.<br><br>Thank you. |
| 07/31/17 | Dean | Aiguier | | 320 West 2nd Street | Unit 510 | South Boston | MA | 02127 | Support | As a resident of the west end of South Boston living on West 2nd Street, I am writing in support of the proposed development for 776 Summer Street.<br><br>I am proud to live in a city that continues to grow and flourish and am looking forward to seeing the redevelopment of this property with all the community benefits it will bring. Specifically, I am most excited about the open space and areas for public use that the developers have shared with our neighborhood. Having a safe place for families and children to visit that is nearby with so many amenities is not only incredibly exciting for our neighborhood but also terribly needed.<br><br>We appreciate the developers continued outreach and communication with the neighborhood and look forward to the much needed development of 776 Summer Street that our neighborhood and city as a whole will be proud of.<br><br>Thank you. |

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| 07/31/17 | Thomas | Haugh | | 635 Dorchester Ave | Unit Basement | South Boston | MA | 02127 | Support | As a resident of South Boston (Andrew Sq), I am writing in support of the proposed development for 776 Summer Street.<br><br>The Edison Power Plant is & always will be one of the staples in South Boston. The iconic building certainly has so much to offer as it relates to the space, location, and potential. The thought of bringing the plant back to life as it relates to this vibrant & innovative proposal would be simply amazing. I have no doubt that this initiative would not only attract many/most residents in South Boston (regularly) yet also bring forth many families & tourists from around Boston & the world.<br><br>I'm very excited to see this transformation come to life and sincerely appreciate the developers continued communication. I'm grateful for their extended outreach with the neighborhood & for giving us a chance to support this effort. I look forward to seeing 776 Summer Street come back to life & being the main attraction of this neighborhood & city once again.<br><br>Thank you. |
| 07/31/17 | John | McCarthy | | 606 E 6th St. | #3 | Boston | MA | 02127 | Support | As a resident of South Boston, I am writing in support of the proposed development for 776 Summer Street.<br><br>I am proud to live in a city that continues to grow and flourish and am looking forward to seeing the redevelopment of this property with all the community benefits it will bring. Specifically, I am most excited about the open space and areas for public use that the developers have shared with our neighborhood. Having a safe place for families and children to visit that is nearby with so many amenities is not only incredibly exciting for our neighborhood but also terribly needed.<br><br>We appreciate the developers continued outreach and communication with the neighborhood and look forward to the much needed development of 776 Summer Street that our neighborhood and city as a whole will be proud of. |

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| 07/31/17 | Ryan | Long | | 952 East Broadway | | South Boston | MA | 02127 | Oppose | We are real people with real concerns, we aren't all just whining to whine!(some do) I understand the business you are in and and you see major opportunities here in our neighborhood but please consider what we have to say as we are invested in our community. We live here, we work and and we raise our families here and our kids go to school here. This development will have a very negative effect to the quality of life of all residents of this community and of Boston as a whole if it continues with its current proposal. Here is a list of my major concerns with this project.<br><br>1) This area is not currently zoned for the intended use of the development but rather maritime/industrial use. What is the process for the change in zoning and how will it occur with checks and balances or will it have any?<br>2)The parking spot to unit ratio is completely rediculous. This neighborhood has a huge parking problem currently right now and there is no wiggle room to add to that problem whatsoever!<br>3)1500 units is far too excessive our neighborhood cannot afford the burdens that will come along with it such as parking, traffic, and the overcrowding of the public transportation specifically the bus lines that run thru South Boston and Downtown. Right now these are already huge issues and have increasingly worsened in the passed 5 years or so and when this development and others around us are completed its going to be far far worse!<br>4) We are already taking on huge developments all around us, Washington Village and Andrew Square to name a few and those are also very massive and overwhelming.<br><br>I hope you take peoples concerns seriously and consider tweaking your proposal to make this development more viable for the surrounding community. God Bless and Take care. |

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| 07/30/17 | Mary | Chalifour | Barr Foundation | 637 East First Street | | Boston | MA | 02127 | Support | Dear Tim,<br><br>I am a resident of South Boston and want to make sure the Edison Plant Development is a positive addition to the neighborhood. The current proposal from Redgate/Hilco does not do enough to add public amenities to the neighborhood or plan for the increased density. There are too many condo units in the plan and the current transportation infrastructure cannot accommodate them (the housing number should be cut in half). Traffic is already an issue and the 7 and 9 bus lines are over capacity.<br><br>The development needs to do more for the residents of South Boston. Construction should begin with public amenities, not condo units. South Boston residents want:<br><br>- More open green space. We want parks to enjoy and places to gather, walk our dogs, and play sports.<br>- Better transportation options. We live 2-3 miles from downtown and it takes us 45 minutes to get there. We need better bus service, with more frequent buses and priority for buses on the streets.<br>- More local businesses that we can support: small retail, local gyms, daycare, butcher, restaurants, bars, grocery stores<br>- Wide sidewalks for pedestrians. We want this space to be pedestrian friendly, especially during construction.<br>- Contained construction. This development will take over 10 years and we do not want the neighborhood to feel like a construction site during that time.<br>- A local marketplace. The plans for the Turbine Hall turned marketplace sound great.<br>- Access to the waterfront. We want to enjoy the waterfront and have open public |
| 07/29/17 | Joanne | McDevitt | City Point NA | 787 e broadway | | South Boston | MA | 02127 | Support | I am very supportive of this project. I believe the developer has extended themselves well beyond city requirements in engaging the neighborhood and working with them to create a development which will work for all. Incorporating arts and industry together is a very progressive concept and needed in South Boston. Local small business will encourage people in the neighborhood to walk not drive here.<br>I want to see the IAG work as it should and be able to mitigate the impact of this project on the community. A long discussion should continue and not be derailed without a thorough discussion and vetting of ideas .<br><br>We do not want heavy industrial or power generating facility in city point. This has been well expressed in petitions and public meetings over the past 10 years.<br><br>The city needs to take a leading role in doing a comprehensive traffic study and change route patterns in South Boston to discourage the South Boston neighborhood streets being used as a bypass to downtown. We should encourage a green building and no parking building.<br>Joanne McDevitt |

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| 07/29/17 | Joanne | McDevitt | City Point NA | 787 e broadway | | South Boston | MA | 02127 | Support | I am very supportive of this project. I believe the developer has extended themselves well beyond city requirements in engaging the neighborhood and working with them to create a development which will work for all. Incorporating arts and industry together is a very progressive concept and needed in South Boston. Local small business will encourage people in the neighborhood to walk not drive here.<br>I want to see the IAG work as it should and be able to mitigate the impact of this project on the community. A long discussion should continue and not be derailed without a thorough discussion and vetting of ideas .<br><br>We do not want heavy industrial or power generating facility in city point. This has been well expressed in petitions and public meetings over the past 10 years.<br><br>The city needs to take a leading role in doing a comprehensive traffic study and change route patterns in South Boston to discourage the South Boston neighborhood streets being used as a bypass to downtown. We should encourage a green building and no parking building.<br>Joanne McDevitt |
| 07/28/17 | Henry | Pynchon | Concerned Citizen of No Affiliation | 24 P Street | | Boston | MA | 02127 | Support | As a resident of Boston I am writing in support of the proposed redevelopment for 776 Summer Street.<br><br>The Edison Power Plant has been a blotch on the skyline of South Boston for too long. It's a site that has been ready for a major overhaul and I'm looking forward to the improved look and feel that a renovation will bring to South Boston. I think it's a unique approach to solicit feedback and concerns of local citizens before proceeding and it should help to put this project into a category of it's own, wherein community wants and needs are taken into consideration as the project moves forward.<br><br>Thank you,<br>Henry |
| 07/28/17 | Enrico | Piatelli | | 683 East 2nd st | apt. 3 | south boston | MA | 02127 | Support | As a resident of South Boston, I am excited for this project to begin. I drive, walk, and run by that building 2 a day and just know that area has so much potential. I am looking forward to how this development will connect South Boston to the seaport and the waterfront. Watching the Cruise ship leave on Friday morning is a beautiful sight, and there is so much opportunity to make that area just as beautiful. This is such an exciting time to be living in the City, and hope Boston continues its effort to make the city a great place to live and raise a family. |

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| 07/28/17 | Jennifer | O'Brien | | 683 East Second Street | #2 | South Boston | MA | 02127 | Support | As a resident of South Boston, I am writing in support of the proposed development for 776 Summer Street. There are so many benefits that this project will bring to our neighborhood that we are looking forward to: having a safe, nearby place for families to visit and open space and areas for public use, among others. Further, this investment in our neighborhood is a tremendous growth opportunity for our city that we are collectively--as residents-- excited about.<br><br>We appreciate the developers' continued outreach and communication with our neighborhood and look forward to the much needed development of 776 Summer Street; our neighborhood and city are going to have even more to be proud of.<br><br>Thank you. |
| 07/27/17 | Marianne | Gill | BIDMC | 628 E 2nd Street | unit 5 | South Boston | MA | 02127 | Support | I think this will be an awesome addition to our community!! |
| 07/27/17 | Kristi | Byrnes | | 1 Cityview Lane | Unit 404 | Quincy | MA | 02169 | Support | This project will be great for the area!! |
| 07/27/17 | Kevin | Brawley | | 11 Thomas Park, Unit 3 | | South Boston | MA | 02127 | Support | As a resident of South Boston I am writing in support of the proposed redevelopment of the former Power Plant.<br><br>I have lived in South Boston for 10 years and am proud to live in a city that continues to grow and adapt to societal changes and advancing technology. I am looking forward to seeing the redevelopment of this property with all the community benefits it will bring. While we understand it is still being completely formulated, this mixed-use development is the exact kind of enrichment and investment in our neighborhood that we as residents can truly get excited about.<br><br>We appreciate that the developers continue their outreach and communication with the neighborhood and look forward to the much needed development along Summer Street that our neighborhood and city as a whole will be proud of. |
| 07/27/17 | Sean | Burke | Colliers International | 69 Old Harbor Street | Apt #3 | Boston | MA | 02127 | Support | As a resident of South Boston, next to Thomas Park, I want to write to support the development of 776 Summer Street/Edison Power station.<br><br>I pass the site on my morning runs and it is an eyesore to the neighborhood. The site could be used for so much more and really bring new life to a blighted plot of land. The site is most likely contaminated and brings safety concerns to the neighborhood and especially those that live close to the site. What the developers have proposed is to clean up the property, keep historic elements (which people cannot even enjoy now) and bring much needed apartment supply and exciting retail options to a piece of water front property. These developers know what to do with contaminated sites and how to bring new life to an area.<br><br>The developers have gone above the norm with their communication with the community and I look forward to their plans for 776 Summer St coming to life upon your approval.<br><br>Thank you,<br>Sean |

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| 07/27/17 | Nicole | Muratore | | 320 D Street | 108 | Boston | MA | 02127 | Support | As a resident of South Boston, I am writing in support of the proposed development for 776 Summer Street.<br><br>I am proud to live in a city that continues to grow and flourish and am looking forward to seeing the redevelopment of this property with all the community benefits it will bring. Specifically, I am most excited about the open space and areas for public use that the developers have shared with our neighborhood. Having a safe place for families and children to visit that is nearby with so many amenities is not only incredibly exciting for our neighborhood but also terribly needed.<br><br>I appreciate the developers continued outreach and communication with the neighborhood and look forward to the much needed development of 776 Summer Street that our neighborhood and city as a whole will be proud of.<br><br>Thank you,<br>Nicole Muratore |
| 07/27/17 | Dylan | Cox | JC&A | 683 East Second Street #3 | | South Boston | MA | 02127 | Support | Tom Whom It May Concern,<br><br>I live on East Second Street a block from the referenced project, and I'm writing in support of the proposed development for 776 Summer Street. Personally I think it's great that the city & it's board members have allowed for someone to finally remove that intensely ugly structure that currently stands there. I get asked about the Power Plant by every friend/family member that visits me, asking what on earth it is and why it hasn't been taken down. They almost can't believe it's been there for 100+ years. I have attended a few of those meetings, and although we can't all realistically have a voice in what goes in, I thought it was nice of the development team to hold such meetings and the man from their firm seemed like he was one of their top executives. Normally no one would expect that or offer to get up there like that. That alone said a lot about their team.<br>I'm also looking forward to the new exterior space and parks for my wife and I to take our dogs for walks; and the potential new restaurants.<br>Bottom line is that area needed this more than anyone could put into words; and anyone who is 100% against it (less a few things like parking/etc which is completely understandable), they are just looking to get something out of fighting it.<br><br>Thanks for offering the forum/opportunity to express our ideas and favor for this development project.<br><br>Good luck |

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| 07/27/17 | Devin | McBride | Law Office of Devin McBride | One International Place Suite 1820 | | Boston | MA | 02110 | Support | To whom it may concern:<br><br>My name is Devin McBride; I am an attorney within the Commonwealth of Massachusetts and former resident of 649 East Seventh Street. I continue to support the local South Boston business community on a weekly basis. Redevelopment of the Edison Power Plant is no small task but a project long overdue. I strongly applaud any and all efforts undertaken to better the quality of life within the city of South Boston. The eye sore, which is the Edison Power Plant, is one of the first buildings one observes when traveling from the Seaport into Southie. In my opinion the plant no longer reflects the growing diverse economy of South Boston and poses a danger to all those in the city. Redevelopment of this plant is essential to the continued growth of South Boston and all residents within it. I would further commend the developers who have consistently engaged the community with respect to all aspects of this grand endeavor and wish both them and the city of South Boston the best of luck moving forward.<br><br>Sincerely,<br><br>Devin McBride |
| 07/27/17 | Jessica | Quirk | | 60 N Street | | Boston | MA | 02127 | Support | Hello,<br><br>My name is Jessica Quirk and I am writing in support of the Edison project. I am a resident of South Boston and I live with my husband and two small kids in a single family home on N Street, just across M Street Park from the site. It has long been an eye sore in the area and I am thrilled to see the plant taken down in a safe manner and replaced with multiples uses that are lacking in the community.<br><br>The east side of South Boston is a residential haven characterized by triple deckers and brownstones where we enjoy the benefits of a tight-knit community that quiets down at night. We don't want to lose this "sleepy" identity but it would be great to have access to more retail and commercial uses. I think the grocery store, fitness center(s), restaurants, and public market that RedGate has proposed are very exciting for the local residents.<br><br>I love the design of the project which focuses on beautiful streetscapes with outdoor uses, preserving the Turbine hall and creating a neighborhood of varying height buildings (unlike the Seaport debacle..) and lots of public open space.<br><br>I am very concerned about the potential health issues of a power plant so close to our home and I believe the developers are going to take the clean up of this site very seriously. I strongly recommend there is constant monitoring of the air and water quality (posted in real-time on the city website so residents can see what is happening) before and during demolition.<br><br>I also believe the city needs to come up with a way to address concerns surrounding public transportation. You can't successfully implement transit-oriented |

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| 07/26/17 | Thomas | Greeley | | 319 A Street | Unit 211 | Boston | MA | 02110 | Support | As a resident of South Boston, I am writing in support of the proposed development for 776 Summer Street.<br><br>I am proud to live in a city that continues to grow and flourish and am looking forward to seeing the redevelopment of this property with all the community benefits it will bring. Specifically, I am most excited about the open space and areas for public use that the developers have shared with our neighborhood. This site has been not only an eyesore, but has shut out residents for decades. Redgate's exciting plans to activate the property, the streetscape and the neighborhood are very welcome.<br><br>I appreciate the developers continued outreach and communication with the neighborhood and look forward to the much needed development of The Edison that our neighborhood and city as a whole will be proud of.<br><br>Thank you,<br>Thomas D. Greeley |
| 07/26/17 | Patrick | Gill | Newmark Knight Frank | 171 Tudor Street | | Boston | MA | 02127 | Support | As a resident of South Boston, over on Tudor Street, I am writing in support of the proposed development for 776 Summer Street.<br><br>I am proud to live in a city that continues to grow and flourish and am looking forward to seeing the redevelopment of this property with all the community benefits it will bring. This mixed-use development is the exact kind of enrichment and investment in our neighborhood that we as residents are truly excited about.<br><br>We appreciate the developers continued outreach and communication with the neighborhood and look forward to the much needed development of 776 Summer Street that our neighborhood and city as a whole will be proud of.<br><br>Best,<br>Patrick Gill |
| 07/26/17 | Chris | Steele | | 265 E Street #3 | | Boston | MA | 02127 | Support | This will be great for the neighborhood! Love to see this! |

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| 07/26/17 | Adam | Dubeshter | | 274 W 5th Street | #2 | Boston | MA | 02127 | Support | As a resident of South Boston, I am writing in support of the proposed development for 776 Summer Street.<br><br>Everyday I consider myself lucky to live in a city that continues to grow and flourish and am looking forward to seeing the redevelopment of this property with all the community benefits it will bring. This mixed-use development is the exact kind of enrichment and investment in our neighborhood that we as residents are truly excited about. Not only will it bring energy and excitement to an otherwise under utilized area of South Boston, this development will clean up a contaminated site and bring a multitude of jobs and opportunities to the city, its people, and the neighborhood.<br><br>We appreciate the developers continued outreach and communication with the neighborhood and look forward to the much needed development of 776 Summer Street that our neighborhood and city as a whole will be proud of.<br><br>Thank you.<br><br>Adam Dubeshter |
| 07/26/17 | Karen | Kelley | homeowner | 582 E 7th Street | | Boston | MA | 02127 | Oppose | The proposed 1,588 units of new residential housing will be woefully underserved by the proposed addition of under a thousand parking spaces. My rough estimate is that this would add at least 3,000 residents to the area, the vast majority of them young professionals and car owners. Parking and transportation are already a critical concern for South Boston residents generally, and City Point/Gates of Heaven area residents in particular. The MBTA #7 bus is already above any reasonable capacity. Automobile traffic is jammed each morning and afternoon along L Street as cars and trucks cut through our neighborhood to avoid traffic on 93N or S. As a pedestrian, you are taking your life in your hands crossing L Street. There are zero existing local options for alternative parking for guests or for residents during snow events. Traffic and parking are constant refrains on local Southie bulletin boards and chat rooms. This project as conceived will significantly exacerbate traffic woes and congestion. 20,000+ additional car trips simply cannot be handled by the current infrastructure along Summer Street, Broadway, L Street, or Day Boulevard. If this development goes forward, expect riots in the streets. People are at their boiling points as it is. “The Project Site has convenient public transit access and is located 0.5 mile from the Silver Line…” Hahahahaha! YOU try walking a half a mile in heels to get to the Silver Line during much of the year when it is either snowing or sweltering hot to get to your office job. I think you will find it is not particularly convenient. There are essentially no connections on public transit between South Boston and the South Boston Waterfront area at present. The only “convenient” public transit from that site is the #7 bus, and it is FULL by the time it reaches L and Broadway. It does not even stop at rush hour at the Project Site. |

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| 07/26/17 | Tim | Mulhall | Resident | 320 D St | | Boston | MA | 02127 | Support | As a resident of South Boston, I am writing in support of the proposed development for 776 Summer Street.<br><br>The Edison Power Plant has been an eyesore for years and I am looking forward to the clean up and rejuvenation of the site. Many in the neighborhood have been concerned about the safety of the power plant, given the state of disrepair a lot of the buildings are in. Having a team come in to not only safely clean up the property, but also restore some of the historic components, will bring life and vitality back into that part of the neighborhood.<br><br>We appreciate the developers continued outreach and communication with the neighborhood and look forward to the much needed development of 776 Summer Street that our neighborhood and city as a whole will be proud of.<br><br>Thank you. |
| 07/26/17 | Nora | Smith | Colliers International | 289 D Street | Apt 1 | Boston | MA | 02127 | Support | As a resident of South Boston, I am writing in support of the proposed development for 776 Summer Street.<br><br>The Edison Power Plant has been an eyesore for years and I am looking forward to the clean up and rejuvenation of the site. Many in the neighborhood have been concerned about the safety of the power plant, given the state of disrepair a lot of the buildings are in. Having a team come in to not only safely clean up the property, but also restore some of the historic components, will bring life and vitality back into that part of the neighborhood.<br><br>We appreciate the developers continued outreach and communication with the neighborhood and look forward to the much needed development of 776 Summer Street that our neighborhood and city as a whole will be proud of.<br><br>Thank you. |

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| 07/26/17 | Harrison | Calato | | 373 Dorchester Street | Apt. 1 | South Boston | MA | 02127 | Support | Dear Mr. Czerwienski,<br><br>As a resident of South Boston, I am writing in support of the proposed development for 776 Summer Street.<br><br>I am proud to live in a city that continues to grow and flourish and am looking forward to seeing the redevelopment of this property with all the community benefits it will bring. This proposed development at the L Street Power Station is the exact kind of community space that we as residents are excited about. I am particularly excited about the developers' focus on arts and cultural space, as well as the potential for an open market in what was Turbine Hall. To me, these changes seem authentic and as the city continues to grow, these are the types of changes we need to be embracing.<br><br>The community values the developer's communication efforts and we're thrilled that changes are coming to the 776 Summer Street lot.<br><br>Thanks! |
| 07/26/17 | Alexis | Farraye | | 349 Silver Street | Unit 1 | South Boston | MA | 02127 | Support | Dear Mr. Czerwienski,<br><br>I am a resident of Southie and I am writing in support of the proposed development for the L Street Station at 776 Summer Street.<br><br>I chose to live in South Boston because it's such a great community - one that I think should be excited to embrace positive change as outlined in this project. Southie residents want more public spaces and locations to dine, shop and hangout in the area. Right now, there are only a select few places in Southie that residents can go out to dinner or enjoy a drink and these places are often overcrowded; it would be great to have alternative space to flock to. I would love to see the Summer Street area repurposed into a local area that the whole community can enjoy.<br><br>I appreciate the developers' communication with the neighborhood and look forward to the much needed development of 776 Summer Street.<br><br>Best,<br><br>Alexis Farraye<br>349 Silver Street, Unit 1, Boston, MA 02127 |

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| 07/26/17 | Michael | Falvey | Roseview Investment Advisors | 75 Federal Street | Suite 610 | Boston | MA | 02110 | Support | Good afternoon -<br><br>As a prior resident of South Boston in the East Broadway area for a number of years, and as a current resident of the Seaport District, I am in support of this transformational project to reinvigorate and transform the gateway of the South Boston neighborhood.<br><br>The largely dilapidated structure on Summer Street and East 1st has for years sat idle while development has taken place all around the City. The walled-off nature of the structure at the nexus of the Seaport and South Boston has, and will continue to be, an eyesore without a major redevelopment taking place. Redgate and Hillco have been in constant communication and have invited community questions and outreach earlier than most developers in order to learn from residents and hear concerns. This outreach will hopefully lead to a successful project, not just for the developers, but for the surrounding neighborhood and those that call South Boston home.<br><br>I am a staunch supporter of the redevelopment and the team at hand. |
| 07/26/17 | Robert | O'Connell | | 524 E. Sixth Street | Apt. 3 | South Boston | MA | 02127 | Support | I have been a resident of South Boston most of my life and presently live on the East Side at 524 E. Sixth Street the past seventeen years. The proposed development of 776 Summer Street, the former Boston Edison Power Plant, is long overdue.<br><br>There is no doubt I am extremely excited to live in this great city that continues to grow and mature into one of the finest cities in the United States. The Gateway into South Boston is Summer street and the developers of this phenomenal project have been thoroughly involved with our community. Any resident of Boston, not just South Boston, will be excited about the open space and areas for public use that will be included with this project. There is no doubt 776 Summer Street will be the "go to" location for families and children throughout the city.<br><br>I wish the developers continued success as they phase out this monstrosity of a building and restore some of its historic components and bring back life and vitality into this beautiful section of our city. |

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| 07/26/17 | Sean | Harrington | New England Patriots | 1 H Street Place | | SOUTH BOSTON | MA | 02127 | Support | Personally, I am looking forward to this with hopes that the project can replicate the success of Assembly Row in recent years. It will be great to get some retail stores in South Boston (because there are none!), with some adjacent restaurants for some fun weekend activities.<br><br>But most importantly, bring on the offices! Let's get more small business/start-ups in Boston - we are the youngest city in the country, with the most talented graduates in the country. Let's keep the best and brightest here. Small businesses will flock to offices here, near the water, in a city with so much history and character.<br><br>There's no reason why we can't bring in the revenue that Silicon Valley has, while learning from their mistakes, and preserving our city's character and resources. We've got Biotech in Cambridge, bring small Tech to Southie!<br><br>This would be great, combined with the addition of GE and Reebok HQ, for our economy, and city's welfare. |
| 07/25/17 | Mary | Nee | | East Sixth Street | | South Boston | MA | 02127 | Oppose | I am against the development of the old Edison Plant. The area should be used for maritime purposes only. It's about time the Mayor and BRA stop the over development of South Boston. I am sure the scale of these projects wouldn't be allowed in West Roxbury or wherever you reside. The only people who should be deciding what development goes into South Boston should be the South Boston residents. I am disgusted by the greed of this establishment. There are no amount of studies that the City of Boston can provide us that we'll believe the toxins have been cleaned up. Stop changing the landscape of our town. We are on landfill and its only a matter of time before we become a big sinkhole. What will you do then??? |

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| 07/25/17 | Matthew | Martinelli | | 407 E 1st St. | | Boston | MA | 02127 | Support | I'm writing in support of moving the conversation forward for a revised project at 776 Summer St. in South Boston. There have been a number of concerns raised at the community meetings and on social media, all of which are fixable. If they are addressed properly, it would be great to see the pink monstrosity in my neighborhood demolished and a portion of the Reserved Channel revitalized. I've detailed some possible solutions below:<br>Parking: This is the number-one obstacle in the project and one that I think can be addressed via compromise. The parking spots for this dense of a project should be 1:1 in terms of spot to resident unit, simply because while those cars might only be used rarely (as opposed to in a daily commute), residents need to have a car if they have kids. It would go a long way to winning over the community if the developers agreed that the residents of this site would be unable to also register for resident parking permits from the city. These two solutions would likely alleviate all of the parking concerns.<br>Traffic: You would think this issue is tied with parking, but with the future of autonomous vehicles, it's not. People will be ride-sharing far more frequently by the time this ride is completed. Mass public transit may or may not still be relied upon. (Why take the bus for $2 if you can take a self-driving Uber for $3?) However, setting aside money for infrastructure improvements (perhaps widening the Summer Street / L Street bridge to add bike lanes) should be necessary. Increased investment in buses (paying for Sunday service on the 7), possibly a ferry landing and enough storage for bike shares and at least 1 bike spot per unit would also be prudent. Adding in a spot where ride-shares could pickup/dropoff might be a nice feature as well. It's tough to see exactly how autonomous vehicles will change our lives, but planning for more traffic in the worst-case scenario is a good idea, with the possibility to change something as the development continues. Sequencing to build the grocery store or hotel first would also allow for the community to address traffic |
| 07/24/17 | Christopher | Devlin | | 718 E 2nd street | | South Boston | MA | 02127 | Oppose | .05 parking spots for 1500 condos? Where is 750 cars going to park? |
| 07/24/17 | Brent | Grinna | | 1 Viking St | | Boston | MA | 02127 | Support | The plans are inspiring. The process of engaging the community has been terrific and should be replicated by other developers. This project will have a massive impact that could truly connect City Point with the Seaport while reclaiming an important piece of the waterfront for our community. I am strongly in support of this proposal. |
| 07/24/17 | Patrick | Balaconis | | 622 E. 6th St. | | S. Boston | MA | 02127 | Oppose | This project is far to big for the neighborhood. The traffic caused by a project of this size will be astronomical. Not nearly enough parking will be included in the project as well. |
| 07/24/17 | Areeg | Eluri | | 416 East 7th St. | | Boston | MA | 02127 | Oppose | There is insufficient parking to support this project. If this project is to move forward it should minimally have sufficient parking to support double occupancy of each residential unit (2 parking spots for each unit) and optimally support parking need of others in the community. |
| 07/22/17 | framcis x | russell | me | 601 e 4 th st | | s boston | MA | 02127 | Oppose | too!! DENSE no access to water as advertized ?? NO MARITIME USE AS IS MANDATED BY LAND USE DOCUMENTS IN LAND COURT .TOO BIG GO TO DEVELOPERS HOUSE AND BUILD NEXT HIS OR HER HOUSE AND THAT IS WERE TRUTH IS ITS A NO NO NO NO |

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| 07/09/17 | Peter | Ostrow | Beth Israel Deaconess Healthcare | 437 D Street | Apt 3F | Boston | MA | 02210 | Support | A very inventive use of land. I would recommend two items:<br><br>1. Make it beautiful--Please no more stone blocks (Westin) or glass structures. Make it structively innovative and attactive. Be imaginative.<br>2. Consider adding healthcare to the location. This could be done with the help of our many healthcare institutions or independently. There is no healthcare in that area of Southie--it could be combined with other healthy "businesses", such as a health club and nutrition center and maybe a meditative center. |
| 06/08/17 | Thomas | Flaherty Jr. | | 798 East Third Street | Unit C | South Boston | MA | 02127 | Oppose | It wasn't long ago that this neighborhood was promised that it would not be Manhattanized. With at least 3 buildings reaching heights of at least 200', it looks like that promise is out the window. How tall will the other buildings be? What kind of precedent does this set for the rest of the neighborhood? It seems the "outskirts" of the neighborhood keep creeping closer. I'm also concerned about the blocking of sunlight created by these buildings, mainly in the later afternoon/evening hours. As of now, I get a good amount of sunlight during that time. The old Edison stacks block it for a short time but it comes back as the sun passes. Will my area of South Boston sit in darkness when these 200' plus high buildings are put up? Of course the traffic is always a concern, and I'm wondering if the public safety compliment of police officers and firefighters along with their needed equipment will be increased as we are adding to the population of the neighborhood. I fail to see the benefit to the neighborhood that allowing these high-rise buildings will provide. We simply cannot allow high-rise buildings that will leave long time residential area in their shadows to be put up in our neighborhood like this. I feel this is totally out of line and should be rejected. |
| 05/16/17 | Joshua | Eddy | | 681 E 5th St #2 | | South Boston | MA | 02127 | Neutral | The proposal needs to be revised with much more realistic parking ratios.<br><br>The proposal acknowledges buses are oversubscribed, yet claims that fleets of automated vehicles and other public transit changes over the next 10 years will significantly reduce demand on parking. These are risky assumptions that are very optimistic and could be completely wrong. If they are even somewhat wrong, the proposed parking will be dramatically insufficient for the neighborhood and put a heavy burden on new and existing residents and businesses.<br><br>The proposal doesn't acknowledge the existing issues with street parking in the area. Living in the area is highly dependent on cars, and that does not appear to be imminently changing despite minor changes to bus service. So the parking ratios that are proposed are very low compared to the zoning board's recommended ratios. The recommended ratio for South Boston residential area is 1.0-1.5 parking spaces per unit, far higher than the 0.4 proposed. There is absolutely no retail parking provided, which makes no sense. The office parking ratio should be at least the recommended 0.7, higher than the 0.6 proposed. |

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| 05/16/17 | Maureen | OKeefe | | 632 E Eighth St | | S Boston | MA | 02127 | Oppose | Are there any drawings of what development will look like with a direct view of what the high rise building looks like in relation to the others? In one drawing the high rise is pretty hidden and hard to tell. Other drawings show the lower level buildings. Hard to support the project without drawings from an angle that gives a clear view of the tall building.<br>Thx!<br>Maureen |
| 05/16/17 | Charlie | Dunn | Hub Church South Boston | P.O. Box 466 | | South Boston | MA | 02127 | Support | Thank you for your hard work on forwarding this development. I personally believe it can not only be a great boon to South Boston, but to the city as a whole!<br><br>I do hope that the varying social and economic strata of the neighborhood will be considered throughout the project phases, and that this will not become a development merely for well-to-do young professionals and families.<br><br>Specifically, we at Hub Church would love to help with the creation/ownership of something like a Community Center space (as a part of the development) that will facilitate the social and recreational health of the whole neighborhood. Our heart as a church has long been to give to our community rather than take from it by serving it in both body and soul. We would love nothing more than to see a space that people view NOT as a church building, but as a building that exists for the good of the neighborhood, because those who care about the neighborhood occasionally gather in it.<br><br>Please feel free to contact me if any of this is of interest.<br><br>Thanks! |