October 2018

PROJECT NOTIFICATION FORM

15 Washington Street

Brighton, MA

PROPONENT

New Creek LLC
WSP 1725 Holding, LLC

SUBMITTED BY

vhb

SUBMITTED TO

Boston Redevelopment Authority, d/b/a
Boston Planning & Development Agency

IN ASSOCIATION WITH

Elkus Manfredi Architects
Goulston & Storrs
Carol R. Johnson Associates
Sanborn, Head & Associates
The Green Engineer, Inc.
WSP USA

NEW CREEK LLC
WSP 1725 HOLDING, LLC
3333 NEW HYDE PARK RD., SUITE 100
NEW HYDE PARK, NY 11042

October 26, 2018

Brian P. Golden, Director
Boston Planning and Development Agency
One City Hall Square
Boston, MA 02201

Re: 15 Washington Street

Dear Director Golden,

On behalf of New Creek LLC and WSP 1725 Holding, LLC, affiliates of Kimco Realty Corporation, we are pleased to submit this Project Notification Form ("PNF") for Large Project Review under Article 80B of the Boston Zoning Code for the redevelopment of an existing retail site into a mixed-use project located at 15-35 Washington Street in the Brighton neighborhood of Boston, Massachusetts (the "Project").

The Project will include new construction of up to 270 dwelling units consisting of multi-family apartments, a new approximately 45,753-square foot Whole Foods grocery store, a new approximately 3,593-square foot Citizens Bank, and up to 323 structured parking spaces that will support the residential and commercial uses. Both the existing Whole Foods grocery store and Citizens Bank will be reconstructed on site and relocated into new retail spaces facing Washington Street. The Project seeks to replace what are currently small retail buildings and a large surface parking lot with a vibrant mixed-use development activated by ground-floor retail uses with housing above.

The enclosed PNF presents details about the Project and provides an analysis of its potential impacts, including transportation/traffic, environmental, infrastructure, and historic impacts. Based on the comprehensive approach to addressing potential impacts and mitigation similar to the level of information typically presented in a Draft Project Impact Report, it is the desire of the Proponent that the BPDA, after reviewing public and agency comments as well as any further responses to comments made by the Proponent, will issue a Scoping Determination Waiving Further Review pursuant to the Article 80B process.

We look forward to working collaboratively with you and your staff, and other city agencies and members of the community to develop the best possible redevelopment plan for this location. We anticipate that the BPDA will publish public notice of the receipt of this PNF within five days, as required by Section 80A-

2(3). Requests for copies of the PNF should be directed to Lauren DeVoe at (617) 607-0091 or via email at ldevoe@vhb.com.

If you have any questions, please do not hesitate to contact me.

Sincerely,

Nicholas Brown

New Creek LLC and WSP 1725 Holding, LLC, affiliates of Kimco Realty Corporation
NBrown@kimcorealty.com

15 Washington Street

Brighton, Massachusetts

SUBMITTED TO **Boston Planning and Development Agency**
One City Hall Square, 9th Floor
Boston, MA 02201

PROPONENT **New Creek LLC and WSP 1725 Holding, LLC**
3333 New Hyde Park Road
New Hyde Park, NY 11042

PREPARED BY **VHB**
99 High Street, 10th Floor
Boston, MA 02110

In association with:
Elkus Manfredi Architects
Goulston & Storrs
Carol R. Johnson Associates
WSP USA
The Green Engineer, Inc.
Sanborn, Head & Associates, Inc.

October 26, 2018

Table of Contents

Chapter 6: Environmental Protection

Chapter 7: Infrastructure

Chapter 8: Historic Resources

APPENDICES

**Note:* Appendices B and D are provided on the enclosed CD-ROM due to size.

List of Tables

Page Intentionally Left Blank

List of Figures

***Note: All supporting graphics are provided at the end of each chapter.**

1

Project Description

New Creek LLC and WSP 1725 Holding, LLC, (the “Proponent") submits this Project Notification Form ("PNF") to initiate review by the Boston Redevelopment Authority, d/b/a Boston Planning & Development Agency (the “BPDA”) under Article 80 of the Boston Zoning Code (the “Code”) for the redevelopment of an existing retail site containing a Whole Foods grocery store and Citizens Bank into a mixed-use project located at 15-35 Washington Street in the Brighton neighborhood of Boston, Massachusetts (the “Project Site”). The redevelopment project is referred to as 15 Washington Street (the "Project"). Refer to Figure 1.1 for a site location map and Figure 1.2 for the project area context.

The Proponent intends to redevelop the existing approximately 2.3-acre Project Site with a mixed-use development consisting of a new Whole Foods grocery store and café, and other ground-floor retail uses with residential on the upper floors. By retaining and re-constructing the Whole Foods grocery store, and expanding uses at the Project Site, the Proponent strives to achieve the following goals:

- Provide a new, expanded state of the art grocery store with a full complement of offerings;
- Expand housing opportunities, including affordable housing;
- Improve site access and circulation for both vehicles and pedestrians;
- Add architectural character reflective of the surrounding area; and
- Activate the public realm adjacent to the Project Site.

The Proponent has worked with its development team, abutters, elected officials and BPDA staff to develop the enclosed plans for the Project.

This PNF presents details about the Project and provides a comprehensive analysis of traffic/transportation and other potential environmental impacts, as well as infrastructure needs to inform reviewing agencies and the community about the Project, its potential impacts, and the mitigation measures proposed to address those potential impacts.

1.1 Site Context and Existing Conditions

The approximately 2.3-acre site is bounded by Washington Street to the southwest, Corey Road to the southeast, residential properties to the northeast and Allston Street to northwest. Refer to Figure 1.2 for project site context. The existing site currently consists of an approximately 20,350-square foot Whole Foods and an approximately 7,200-square foot Citizens Bank. Approximately 151 surface parking

spaces support these uses. Refer to Figure 1.3 for the existing conditions site plan and Figure 1.4 for photographs of the existing Project Site.

The existing Project Site has two driveways along Washington Street and one entrance-only driveway from Corey Road. The driveways allow access to the existing surface parking lot. The surface parking lot serves both the Whole Foods and the bank. Refer to Figure 5.2 for existing site access.

1.2 Project Description

The Project is a mixed-use development including new construction of up to 270 dwelling units consisting mostly of multi-family apartments, a new approximately 45,753-square foot Whole Foods grocery store, a new approximately 3,593-square foot Citizens Bank, and up to 323 structured parking spaces that will support the residential and commercial uses. Both the existing Whole Foods grocery store and Citizens Bank will be reconstructed and relocated into new retail spaces fronting Washington Street. Table 1-1 summarizes the proposed development program for the Project. Figure 1.5 illustrates the proposed site plan.

Table 1-1 Proposed Development Program Summary

Use	Approximate Size	Quantity
Existing Uses		
Grocery	20,350 SF	NA
Bank	7,200 SF	NA
Total Existing	**27,500 SF**	**NA**
Existing Surface Parking	NA	151 spaces
Proposed Uses		
Residential	233,645 GFA	Up to 270 units
Grocery	45,753 GFA	
Bank	3,593 GFA	
Total Proposed	**282,991 GFA[1]**	NA
Parking	130,175 SF	Up to 323 spaces[2]

SF Square Feet inclusive of all building space, including mechanical spaces.
GFA Gross Floor Area, as defined in Article 2A of the Boston Zoning Code.
1 Approximately 255,491 net new GFA.
2 172 net new spaces.

1.2.1 Design Approach Overview

The program and massing of the Project is split between the west half and east half of the Project Site. The new Whole Foods grocery store is proposed on the west half of the Project Site with an entry on the corner of Washington Street and Allston Street. Four floors of apartments are located above. A second entry to the new

grocery store along with a café space is proposed is proposed at the single mid-block curb cut on Washington Street (described below). Four levels of apartments are located along Allston Street.

The east half of the Project Site will consist of Citizens Bank and residential uses screening the parking structure from Washington Street and Corey Road. One floor of apartments is located above Citizens Bank and five floors of apartments are located above a ground floor residential lobby and residential amenity uses at the corner of Washington Street and Corey Road.

Parking is located under the new Whole Foods grocery store in a 3-level parking structure located interior to the Project Site. This parking structure will be screened along Washington Street and Corey Road with either retail or residential uses. Vehicular access to the parking is by means of a single mid-block curb cut on Washington Street. The loading dock for Whole Foods is located at the first level of the parking structure and accessed by trucks entering from this mid-block curb cut on Washington Street and exiting by a one-way drive to Corey Road.

The roof of Whole Foods, as well as the top level of the parking structure, are envisioned as landscaped green roofs for use by the residential tenants. Roof top mechanical equipment for new grocery store will be located at the roof level of the west residential building inside a screened enclosure. Roof top mechanical equipment for the residential uses will be located on the upper roofs of the residential buildings.

1.2.2 Urban Design Approach

The existing grocery store generally turns its back to the public streetscape. The Project seeks to replace what is currently small retail buildings and a large surface parking lot with a vibrant mixed-use development activated by ground-floor retail uses and housing above. All parking will be concealed mid-block from the surrounding streets. Refer to Chapter 3, *Urban Design,* for additional details.

1.2.3 Public Realm Improvements

The City's Complete Streets guidelines will be applied to the pedestrian public realm design. As described more fully in Chapter 3, *Urban Design*, wider sidewalks are proposed along most of the Washington Street frontage, Corey Road and Allston Street. The existing pedestrian connection at the rear of the Project Site from Allston Street down to the existing surface parking lot will remain and will be enhanced/improved.

1.2.4 Site Access and Circulation

The Project will consolidate the two existing driveways (refer to Figure 5.2) into a single driveway along Washington Street, and a new entrance/exit will be created on Allston Street (refer to Figures 5.13a and 5.13b). The rear driveway on Corey Road will be maintained, but it will be converted into an exit-only lane and will be used,

primarily, to support egress by loading/service vehicles, as well as residents and patrons. The Washington Street driveway will accommodate both entering and exiting vehicles; however, the exiting vehicles will be subject to right-turn only restrictions due to the proximity of the traffic signal at Washington Street and Corey Road and based on discussions with the BTD. This improved site access and egress will not be limited to only automobile traffic, but it will also provide significant improvements to bicycle and pedestrian accommodations. Under existing conditions, pedestrians and bicyclists conflict with two site driveways along Washington Street. The Project will improve this conditions by providing one clear access/egress point to and from the parking garage.

1.2.5 Project Schedule

A 24-month buildout period is anticipated for the Project.

1.3 Summary of Public Benefits

This section summarizes the many project benefits associated with the Project.

Public Realm Activation

- Transform an underutilized urban retail site with surface parking into a vibrant mixed-use development.
- Create a sustainable, TOD project that is consistent with the City of Boston's and community's vision and Smart Growth principles.
- Provide a more pedestrian-friendly environment through streetscape improvements along the three (3) roadways adjacent to the Project Site.

Transportation Benefits

- Traffic generated by the Project can be accommodated at the study area intersections through the implementation of planned improvements and signal timing modifications planned as part of the initial phase of the Proposed Project.
- The Project Site's proximity to public transportation, including several bus lines and the MBTA Washington Street Green Line station, will help minimize the need for vehicular travel.
- The parking needs for the Proposed Project will be accommodated by a proposed parking supply of up to 323 parking spaces (172 net new spaces).
- Transportation improvements proposed as part of the Project have been designed to the City's Complete Streets guidelines to accommodate pedestrian, bicycle, and vehicular traffic.
- The Proposed Project will include implementation of a Transportation Demand Management ("TDM") Plan with specific measures to promote and encourage residents, employees, and visitors to use alternative transportation modes.

Sustainability/Environmental Benefits

Measures and strategies to help the Project minimize potential environmental impacts and to achieve its sustainability goals are grouped into the following categories:

Site Location and Design

- Reuse a previously developed site in a dense urban setting as opposed to building on undeveloped open space.
- Comply with all applicable stormwater management standards to the extent practicable to improve water quality.
- Manage stormwater runoff rate and provide infiltration through below-grade re-charge and the incorporation of pervious surfaces.
- Reduce heat island effect by incorporating greenery throughout the Project Site, utilizing reflective roof materials and/or vegetated roofs, and providing most of the on-site parking under cover.
- Target a high level of sustainability by designing the site and each building using the newly required LEEDv4 rating system to demonstrate compliance with Article 37, Green Buildings, of the Code.1
- Provide a mix of uses, including grocery, residential, and retail near public transit and walkable to the established Brighton-Allston neighborhood consistent with Smart Growth principles.
- Provide an efficient redevelopment plan that includes structured parking.

Energy Conservation/GHG Emissions Reductions

- Comply with the Massachusetts Stretch Energy Code requirement to be at minimum 10 percent better than the base energy requirements, in accordance with ASHARE 90.1-2013.
- Reduce overall annual energy consumption by an estimated 19.3 percent through the implementation of energy optimizing building design and systems, which equates to an estimated 10.4 percent reduction in stationary source CO_2 emissions.
- Utilize potential energy conservation incentives offered by utility companies.
- Consider providing preferred parking for low-emitting fuel-efficient vehicles and/or electric vehicle charging stations to further reduce GHG emissions associated with vehicles.
- Continue to evaluate building design and alternative energy options throughout design.

1 City of Boston Article 37 submittal requirements require completing a Leadership in Energy and Environmental Design ("LEED™") credit scorecard to demonstrate that a project meets the minimum requirements to achieve a LEED Certified level (all LEED prerequisites and achieve at least 40 points) without requiring the project to be registered with or certified by with the Green Business Certification Inc. ("GBCI").

› Consider incorporation of alternative energy options, including photovoltaics and cogeneration systems.

Water Conservation

› Target substantial reduction of the annual potable water use for sewage conveyance.

› Reduce potable water for irrigation use through the use of efficient irrigation systems, and drought tolerant trees, shrubs, and groundcover.

Resiliency

› Bury all new utilities below ground to reduce the possibility of a localized power outage caused during extreme storm events.

› Incorporate protective plantings throughout and at the edges of the Project Site to mitigate potential wind effects created by open spaces.

› Incorporate natural ventilation into the design of residential units, as appropriate, to mitigate potential rising temperature impacts.

Social and Economic Benefits

› Increase housing options, including affordable housing consistent with the Inclusionary Development Policy.

› Deliver a new, modern flagship urban-style grocery store as part of the initial development phase to support the on-site uses, as well as the broader community.

› Over the term of the Project, create approximately 250 new construction jobs and approximately 60-70 new permanent jobs.

› Create net new annual real estate tax revenue for the City, as well as state sales and business tax revenue.

› Provide new residents to patronize existing stores, restaurants, bars and amenities of the community, helping small business owners.

1.4 Community Outreach

The Proponent intends to continue conducting early community outreach to local community groups, community members, adjacent landowners, and elected officials. Further outreach efforts, public meetings, and community outreach will be conducted as part of the Article 80 review process.

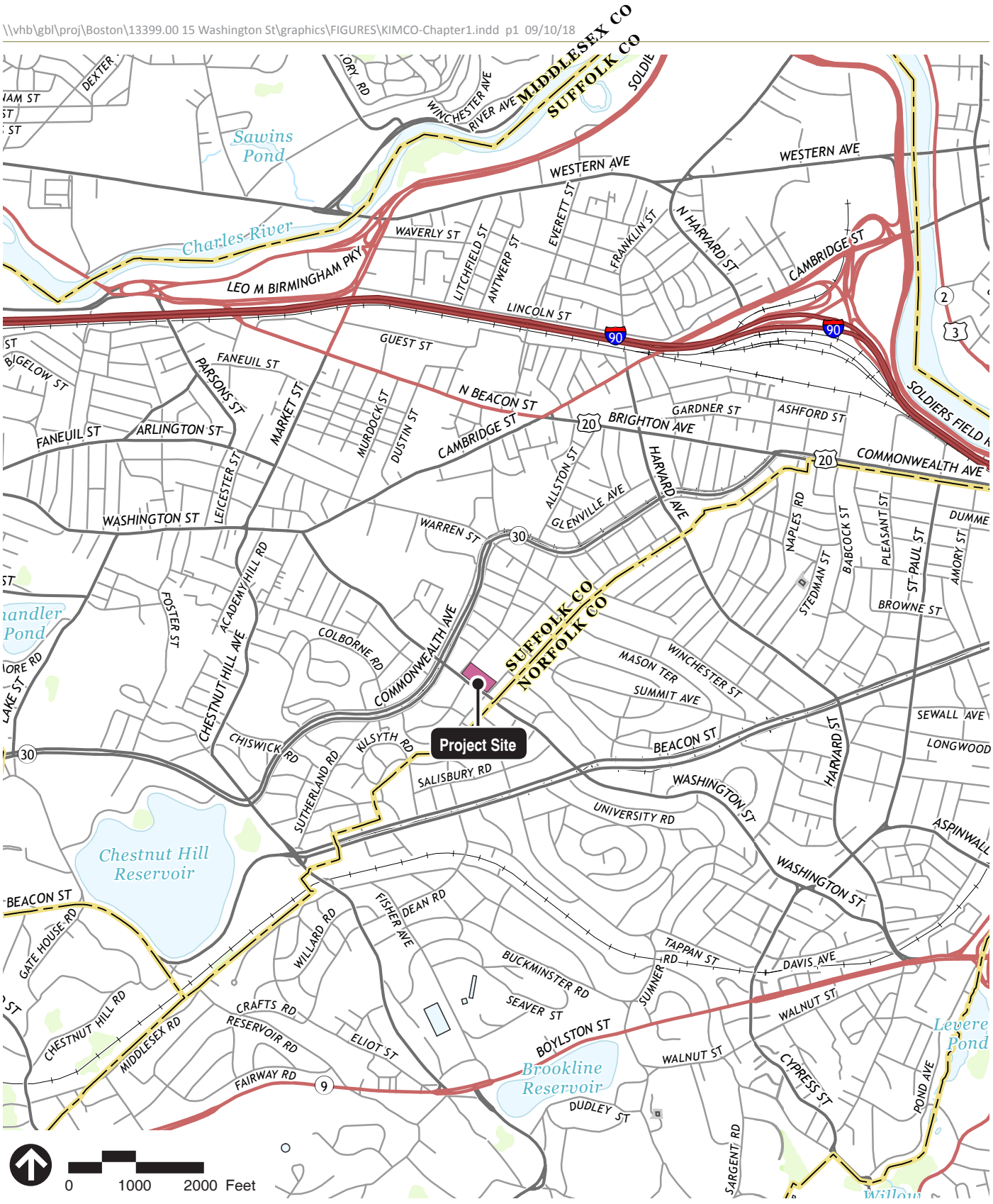
1.5 Consistency with Applicable Plans & Policies

There are certain large-scale planning efforts in Allston-Brighton along or near the Turnpike (I-90) outside the Project area. Such initiatives include: the I-90 Interchange design; Western Avenue/SFR/Birmingham Parkway intersection redesign; and the Brighton Guest Street Area Planning Study. According to a recent BPDA presentation

from June 2017, 24 projects were approved in Brighton and 12 in Allston since 2014. Currently, almost $600 million worth of development is under construction in Brighton and an additional just over $200 million in Allston.

While the Project is not located in or nearby these areas, it supports and is generally consistent with the planning goals of the community, such as providing a mix of housing and ground-floor uses to activate the public realm and to support the residents.

Page Intentionally Left Blank

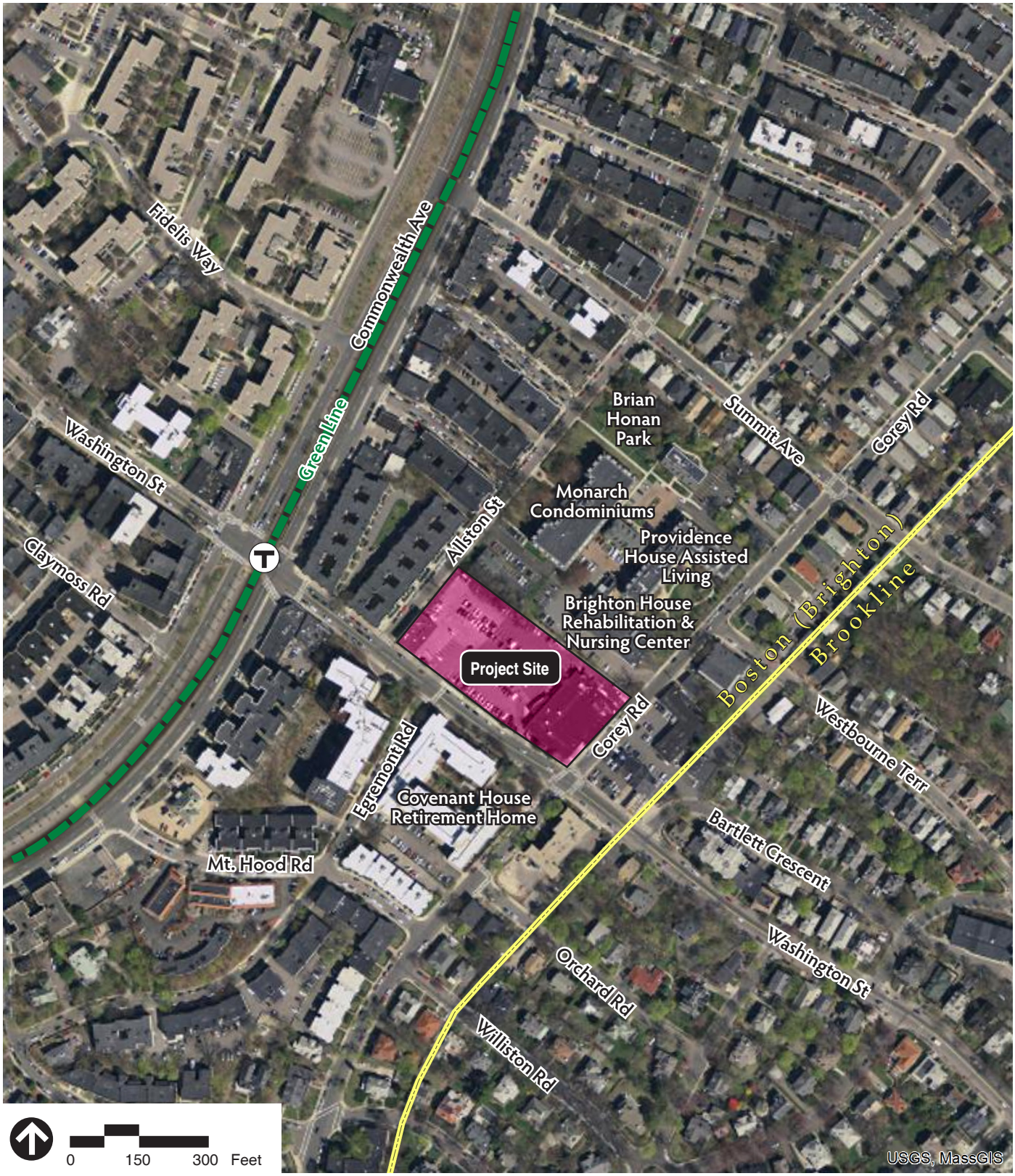


Source: 2015 USGS Topographical Quad
Prepared by: VHB

Figure 1.1

Site Locus Map

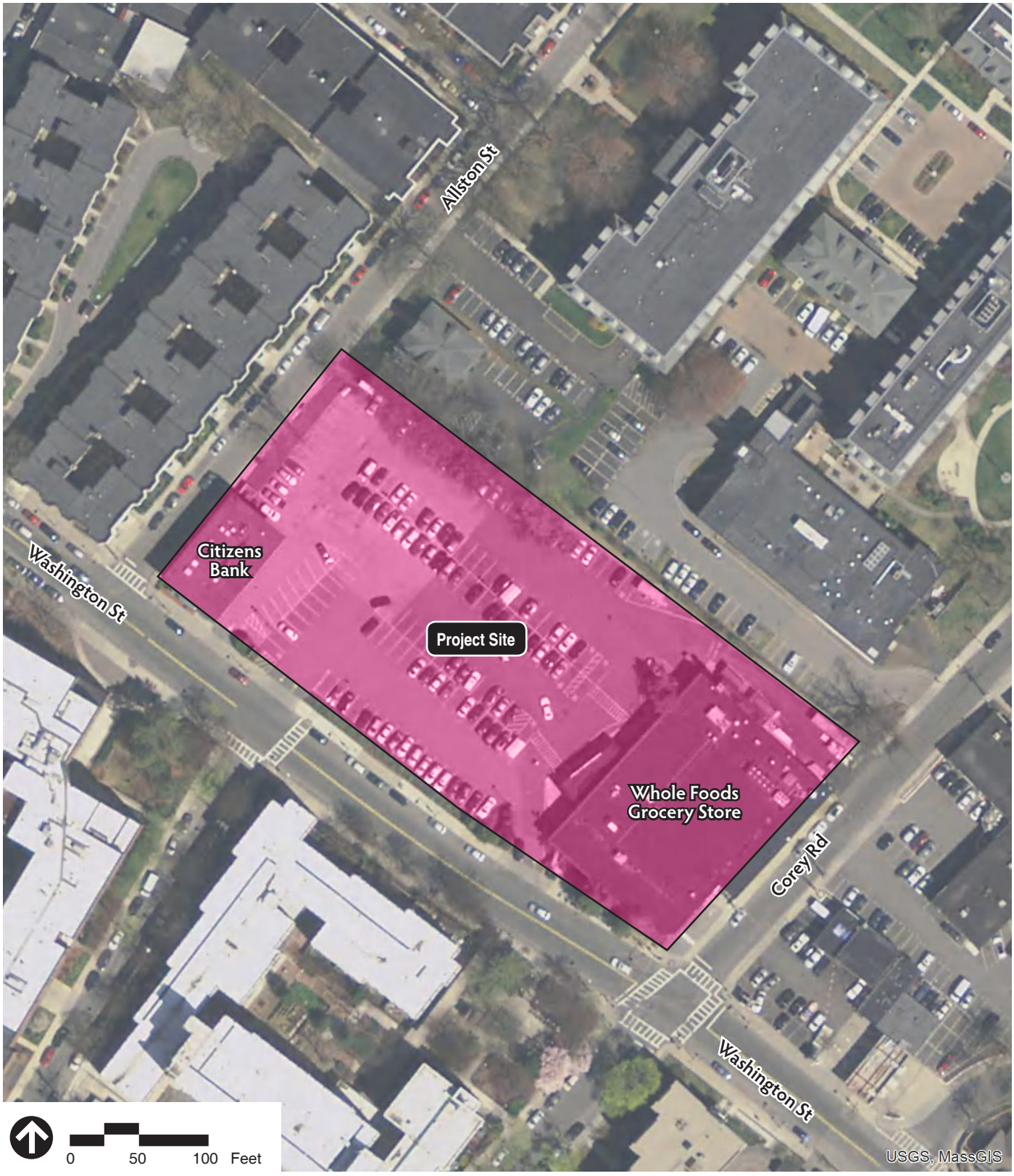
15 Washington Street
Brighton, Massachusetts



Source: MassGIS 2013-2014 USGS Aerial
Prepared by: VHB

Figure 1.2
Project Site Context

15 Washington Street
Brighton, Massachusetts



Source: MassGIS 2013-2014 USGS Aerial

Figure 1.3

Existing Conditions Site Plan

15 Washington Street
Brighton, Massachusetts


1

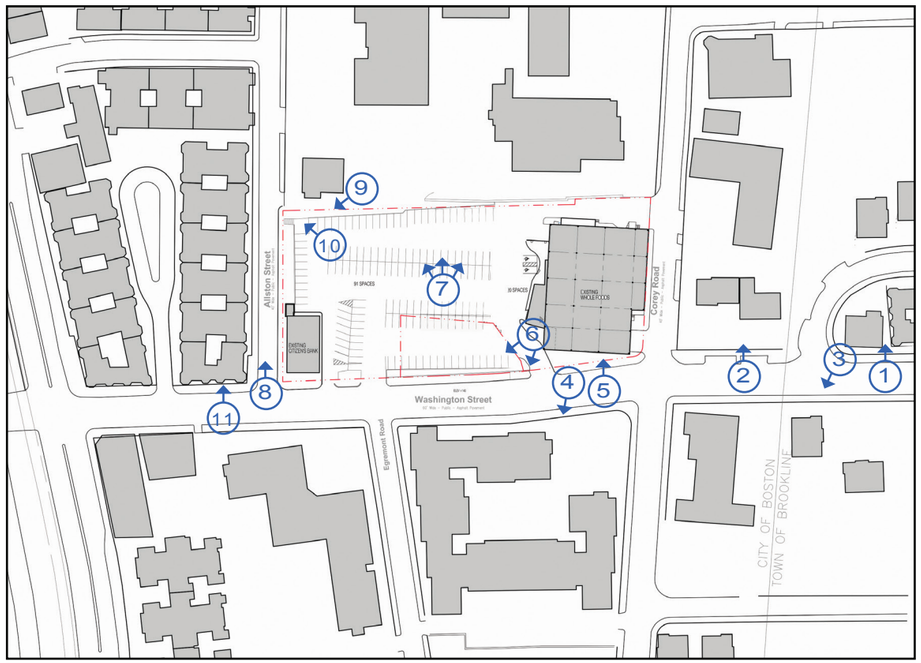

2


3


4


5


6



KEY PLAN


7


8


9

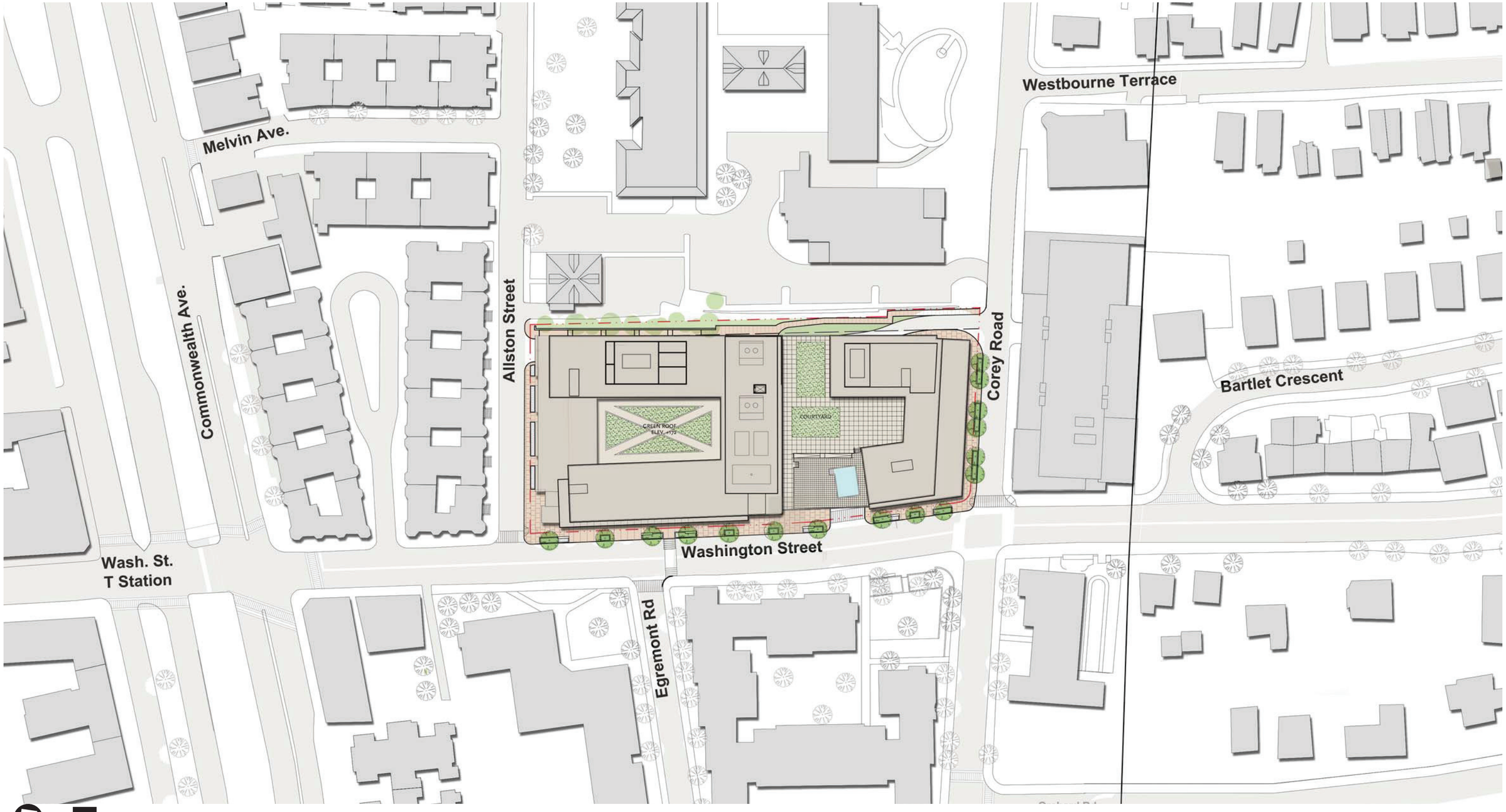

10


11

Figure 1.4

Existing Site Photos

15 Washington Street
Brighton, Massachusetts



ELKUS MANFREDI ARCHITECTS

Figure 1.5

Project Site Plan

15 Washington Street
Brighton, Massachusetts

2

Regulatory Context and General Information

This chapter summarizes the local planning and regulatory controls, and anticipated permits and approvals applicable to the Project, as well as other general information.

2.1 Regulatory Context

As described further below, the Project will require Large Project Review pursuant to Article 80B of the Code. This PNF is filed to commence study of the potential impacts for the Project under Large Project Review.

2.1.1 Zoning and Regulatory Controls (PDA)

Zoning District

The Property is located within the Neighborhood Shopping Subdistrict of the Allston/Brighton Neighborhood District. There are no applicable overlay districts.

Uses

Under the underlying zoning, allowed uses include bank, general retail business less than 75,000 square feet, accessory cafeteria, accessory outdoor café and accessory parking at basement/ground floor levels; however, multifamily dwelling use is conditional, requiring a special permit from the Zoning Board of Appeal. The establishment on the Property of any uses requiring a special permit or not currently permitted under the underlying zoning are anticipated to be approved by decision from the Zoning Board of Appeal.

Building Dimensions

Under the underlying zoning, the allowed floor area ratio is up to 1.0 and the allowed building height is up to 35 feet, which bulk and dimensional requirements are below the anticipated floor area ratio and height of the Project. The establishment on the Property of bulk and dimensional alterations not currently permitted under the underlying zoning are anticipated to be approved by decision from the Zoning Board of Appeal.

2.1.2 List of Anticipated Permits and Approvals

Table 2-1 presents a preliminary list of permits and approvals from governmental agencies that are expected to be required for the Project, based on currently

available information. It is possible that only some of these permits or actions will be required, or that additional permits or actions may be required.

Table 2-1 Anticipated Project Permits and Approvals

Agency/Department	Permit/Approval/Action
Federal	
U.S. Environmental Protection Agency	National Pollutant Discharge Elimination System Permit
Federal Aviation Administration	Determination of No Hazard to Air Navigation (if required for cranes)
City of Boston	
Boston Planning & Development Agency	Article 80B Large Project Review and ancillary documents (including Cooperation Agreement, Affordable Housing Agreement and Boston Residents Construction Employment Plan) Compliance with Article 37
Boston Civic Design Commission	Design Review
Board of Appeals	Variances and Conditional Use Permit
Boston Landmarks Commission	Article 85 Demolition Delay
Boston Transportation Department	Transportation Access Plan Agreement Construction Management Plan
Boston Water and Sewer Commission	Site Plan Review Water and Sewer Connection Permits
Boston Public Safety Commission, Committee on Licenses	Inflammables Storage Permit/Garage License
Public Improvement Commission	Specific Repair Plan approval and License for changes to the public right of way
Public Works Department	Curb Cut and Street/Sidewalk Opening Permits
Boston Inspectional Services Department	Building/Occupancy Permits

2.1.3 Article 80 Large Project Review

Because the Project involves new construction in excess of 50,000 square feet of Gross Floor Area ("GFA"), the Project is subject to Large Project Review. Under the Mayor's Executive Order dated October 10, 2000, and amended on April 3, 2001, regarding mitigation for development projects, the Mayor may appoint an Impact Advisory Group ("IAG") to advise the BPDA on mitigation measures for projects undergoing Large Project Review. In connection with the Project's Large Project Review, the Project will also be subject to Boston Civic Design Commission ("BCDC") review and the green building requirements of Article 37 of the Zoning Code.

This PNF initiates the development review process and aims to meet requirements of the City of Boston Article 80B, Large Project Review by presenting initial details on the Project based on its conceptual design, including supporting plans, preliminary information on sustainability and resiliency, in accordance with Boston Zoning Code Article 37 Green Buildings (Article 37), and the Climate Change Preparedness and Resiliency Policy (Resiliency Policy), respectively, a comprehensive transportation analysis, initial evaluation of potential environmental impacts and descriptions of available infrastructure and nearby historic resources.

2.1.4 Boston Civic Design Commission

The Project will comply with the provisions of Article 28 of the Boston Zoning Code. This PNF, along with other design-specific materials prepared in accordance with the applicable provisions of Article 28, will be submitted to the BCDC for review.

2.1.5 MEPA Review

The Project is not anticipated to require any state permits or approvals and accordingly the Project would not be subject to MEPA jurisdiction.

2.2 Agency Coordination and Community Outreach

As the Project has progressed, the Proponent has met numerous times with the BPDA Development Review and Urban Design staff, as well as BTD staff.

The filing of this PNF initiates the formal agency coordination and community outreach process. In addition to working with the Impact Advisory Group ("IAG"), the Proponent will continue to meet with local elected officials, community organizations, residents, and interested parties as the Project moves forward.

2.3 Development Team

The following provides a list of the members of the Development Team with contact information.

Proponent	New Creek LLC and WSP 1725 Holding, LLC, affiliates of Kimco Realty Corporation 3333 New Hyde Park Road New Hyde Park, NY 11042516-869-7266 Contact: Nicholas Brown
Architect	Elkus Manfredi Architects 25 Drydock Avenue Boston, MA 02210 617-426-1300 *Contacts:* David Manfredi Kent Knight
Legal Counsel	Goulston & Storrs 400 Atlantic Avenue Boston, MA 02110 617-482-1776 *Contact:* Adam Hundley David Linhart

Entitlement Permitting, Transportation, Site Civil Engineering, Site Assessment/Remediation, Cultural Resources	VHB 99 High Street, 10th Floor Boston, MA 02110 617-728-7777 *Contacts:* Lauren DeVoe (Entitlement Permitting) Rick Dupuis (Civil) Sean Manning (Transportation/Traffic) Paul McKinlay (Site Assessment) Maureen Cavanaugh (Cultural Resources)
Landscape Architect	Carol R. Johnson Associates 21 Custom House Street, 3rd Floor Boston, MA 02110 617-896-2500 *Contact:* Christopher M. Jones
Geotechnical Services	Sanborn, Head & Associates, Inc. 1 Technology Park Drive Westford, MA 01886 978-577-1015 *Contact:* Kevin Stetson
Sustainable Design Consultant	The Green Engineer, Inc. 54 Junction Square Dr. Concord, MA 01742 978-369-8978 *Contact:* Erik Ruoff
Mechanical, Electrical, and Plumbing Engineer	WSP USA 88 Black Falcon Avenue, Suite 210 Boston, MA 02210 617-210-1600 *Contact:* Scott Robbins

2.4 Legal Information

2.4.1 Site Control

WSP 1725 Holding, LLC, acquired fee title to the balance of the Property by deeds recorded at the Suffolk County Registry of Deeds in Book 55585, Pages 265 and 267.

New Creek LLC acquired fee title to a portion of the Property by deed recorded at the Suffolk County Registry of Deeds in Book 48940, Page 256.

2.4.2 Public Easements

Subject to completion of survey and title reviews, there are no public easements into, through, or surrounding the Property that would impair the advancement of the Project.

2.4.3 Legal Judgments/Actions Concerning the Project

The Applicant is unaware of any legal judgments or actions pending that concern the Project.

2.4.4 History of Tax Arrears

The Applicant is not in tax arrears in connection with any property owned within the City of Boston.

Page Intentionally Left Blank

3

Urban Design

This chapter provides detailed descriptions of the design of the Project, including public realm improvements.

3.1 Summary of Key Findings and Benefits

The key findings and benefits of the Project related to urban design include:

- Updated and improved condition of the existing Whole Foods grocery store to better serve the surrounding neighborhood.
- Building design that complements the architectural characteristics and scale of the surrounding neighborhood.
- Improved and activated public realm with new sidewalks and streetscape improvements, as well as an active street frontage to improve the pedestrian experience.

3.2 Neighborhood Context

The Project Site is located at the south end of a city block in Brighton bounded by Washington Street, Allston Street, Corey Road and residential properties. The Project Site has street frontage on three sides, Washington Street, Allston Street and Corey Road and neighboring private parcels on the fourth side of the Project Site. Refer to Figure 3.1 for neighborhood context. Existing uses on the Project Site consist of a Whole Foods neighborhood grocery store, a Citizens Bank, and surface parking.

Existing uses surrounding the Project Site are the Harriet Baldwin Elementary School on the Washington Street/Corey Road corner; the Boston Housing Authority Patricia White Apartments and the B'nai B'rith Senior Center Covenant House on the opposite side of Washington Street from the Project Site; apartments at 319 Allston Street across from the Project Site; a three family house, Monarch Condo Trust, 180 Corey Road Assisted Living and 170 Corey Road Brighton House Rehab and Nursing Center behind the Project Site; and small commercial buildings and a gas station on the opposite side of Corey Road from the Project Site. Redevelopment of 5 Washington Street including the removal of the gas station and these small commercial parcels has been proposed and approved by the BPDA.

The existing condition of the Project Site as a small "suburban" retail center with surface parking is incongruous with its urban location and surroundings of generally mature urban residential and related development. The Project seeks to replace what is a sea of asphalt and small retail buildings that turn their backs to the public streetscape, in the case of the existing grocery store, with a vibrant mixed-use

development activated by retail and residential ground floor uses with housing above and all parking concealed mid-block from the surrounding streets. A complete streets approach to the public realm sidewalk design will provide improvements on all three public sides of the Project Site to enhance the public realm and improve the pedestrian experience.

3.3 Planning Principles and Design Goals

The Project proposes to incorporate:

- A mix of urban uses: residential and retail compatible with existing surroundings;
- Public realm improvements by means of a complete streets approach to sidewalk design and both hard and soft landscaping coupled with active street level uses;
- A mix of apartments and affordable housing, as well as a mix of unit types and sizes: i.e. studios, one bedrooms and two bedroom units; and
- A plan that proposes improvements to the condition of the existing Whole Foods grocery store, such as replacing the blank concrete block walls that exist today with active street frontage and concealment of service functions such as the loading dock and dumpsters.

3.4 Building Design Concept and Development

The Project Site is surrounded by existing buildings with a varied mix of architectural styles and heights. Building height ranges from a two-story, three family residence to the nine story Covenant House on Washington Street. Architectural styles include 1940's four story traditional apartment buildings with bay windows, 1980's basic brick public housing and senior housing, five story brick condominium and assisted living with mansard roofs and the three story traditional Harriet Baldwin Elementary School. These existing buildings helped to inform and influence the design of the Project. Refer to Figures 3.2a-i for the building floorplans.

3.4.1 Height and Massing Strategy

The proposed architectural solution for the Project is to separate the massing into four distinct components each identified by its own material, color, fenestration pattern and/or height, but all related to each other by the use of a contemporary architectural vocabulary. Refer to Figures 3.3a-d for building massing from various viewpoints from within the neighborhood

The massing on the west side of the Project Site is broken down into three of these components: a three story bar of residential above a fully glazed Whole Foods grocery store front with a fourth residential floor set back as a part of one of the other components, four stories of residential fronting Allston Street with the top floor set back, and a "U" shaped residential block set back from the streets and located above Whole Foods. The four stories of residential above Whole Foods face Washington Street and cantilever five feet over the sidewalk (but within the property

line). This component creates a street wall along Washington Street at a height of 89.5 to 80.5 feet, which is the tallest portion of the Project at a street edge and is in keeping with the tallest surrounding existing height of the nine-story Covenant House directly across the street. The four-story, or 49-foot height of the residential along Allston Street is in scale with the four story apartment buildings across the street and the "stoop" entries to the proposed residential units provide pedestrian activity along the street in the same manner as these existing residential building entries. The interior "U" plan component four floors above Whole Foods is the tallest component on the site and is set back from Washington and Allston Streets to mitigate the impact of this height on the neighborhood.

The east side of the Project Site comprises the fourth component, which is a four story residential building with a fifth floor set back over a ground floor of retail and residential uses. As Washington Street slopes down towards Brookline and the scale and height of the existing buildings reduces, this component is stepped down to five floors at the back of the sidewalk line or 65 feet in height from the 89.5 to 80 feet of height at the west end of the Project Site.

These west side and east side components are separated by a two-story residential "link" located over the bank and the vehicular entry to parking. This "link" element is set back from Washington Street to separate the massing on each half of the Project Site. Refer to Figures 3.4a-d for the building elevations, and Figure 3.5 for building sections. Figures 3.6a and 3.6b present renderings of the Project.

3.5 Public Realm Improvements

A Complete Streets approach to the pedestrian public realm design is proposed with a 20-foot wide sidewalk along the majority of the block's Washington Street frontage, a 15-foot wide sidewalk along Corey Road, and a 12-foot wide sidewalk along Allston Street. Refer to Figure 3.7 for the streetscape improvement plan. There is an existing pedestrian connection today at the rear of the Project Site from Allston Street down to the existing surface parking lot via an exterior stair. This connection will remain in an improved condition, as described below.

3.5.1 Pedestrian Access/Circulation

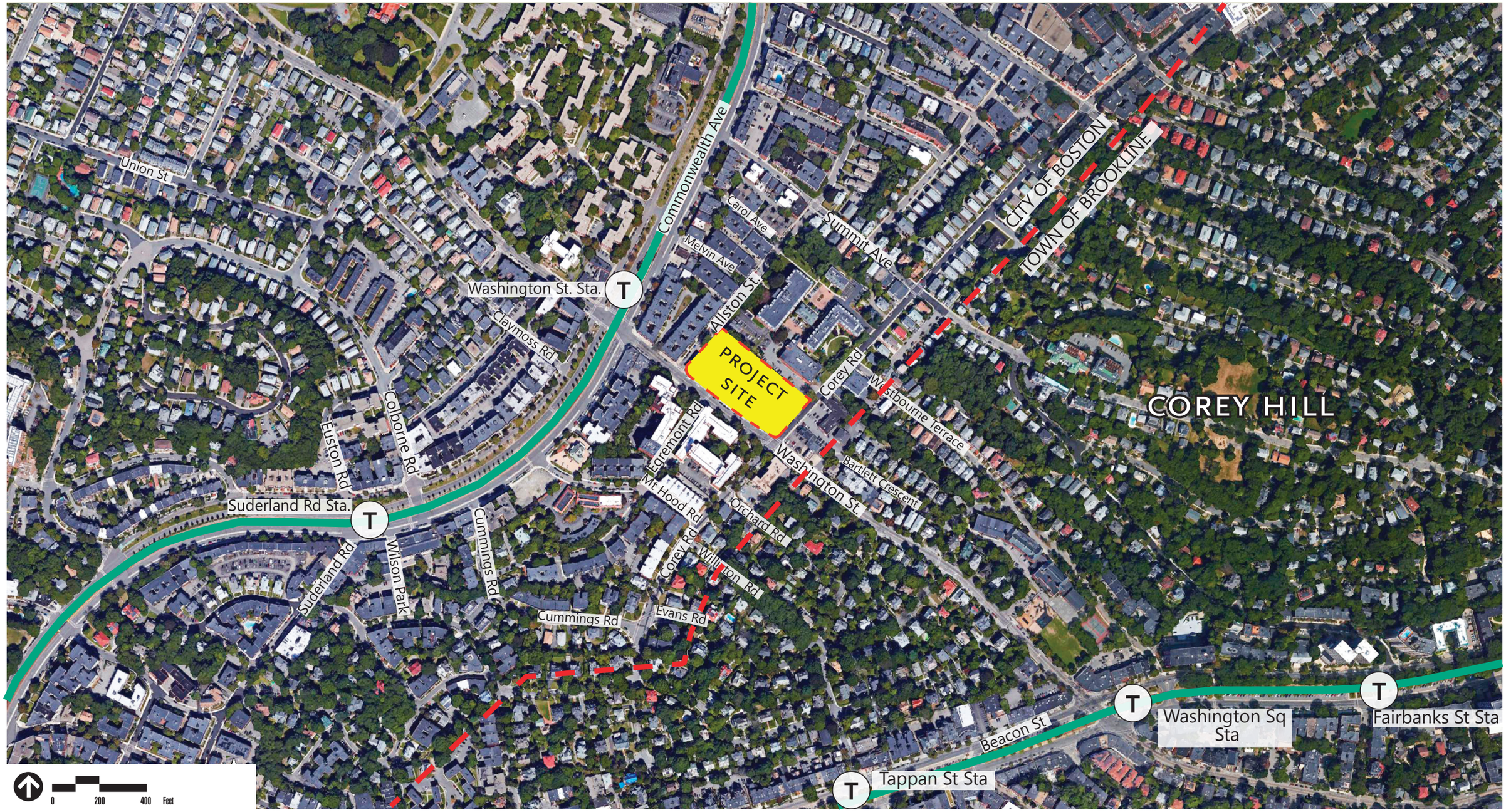
The streetscape along Washington and Allston Streets, and Corey Road will be designed to provide barrier-free access to all furnishing zones, building entrances, and ground level open spaces. New sidewalks will provide grades and materials designed to meet requirements by the BPDA and will be ADA-compliant. Refer to the BPDA Accessibility Checklist in Appendix C for additional details. A new public pedestrian site ramp and path will replace the existing exterior stair from Allston Street to the surface parking and will connect Allston Street to Corey Road. Refer to Figure 3.8 for the pedestrian access and circulation plan and Figure 3.9 for the accessibility diagram.

3.5.2 Streetscape Improvements

All sidewalk improvements will be substantially consistent with the City's Complete Streets Guidelines. The public realm along Washington Street will be activated by the new transparent Whole Foods grocery store and café (Figure 3.6a), and other retail and residential lobby areas. The proposed streetscape improvements include new sidewalks, lighting, furnishings, signage and softscape, or plantings. The proposed Corey Road and Allston Street improvements will also include new sidewalks, lighting, signage and softscape areas at an appropriate cadence and scale to blend into the existing neighborhood fabric.

Sidewalk improvements will allow for pedestrians to flow past planting areas which frame furnishing zones. The generous planting areas provide an environment for street trees to thrive while creating a comfortable pedestrian experience. Native and adaptive plant species will be used to ensure the success of the material while reducing the water use requirements.

A series of large mature existing hardwoods along the northeast side of the Project Site at Allston Street will be protected during construction to be preserved once the new development is completed.

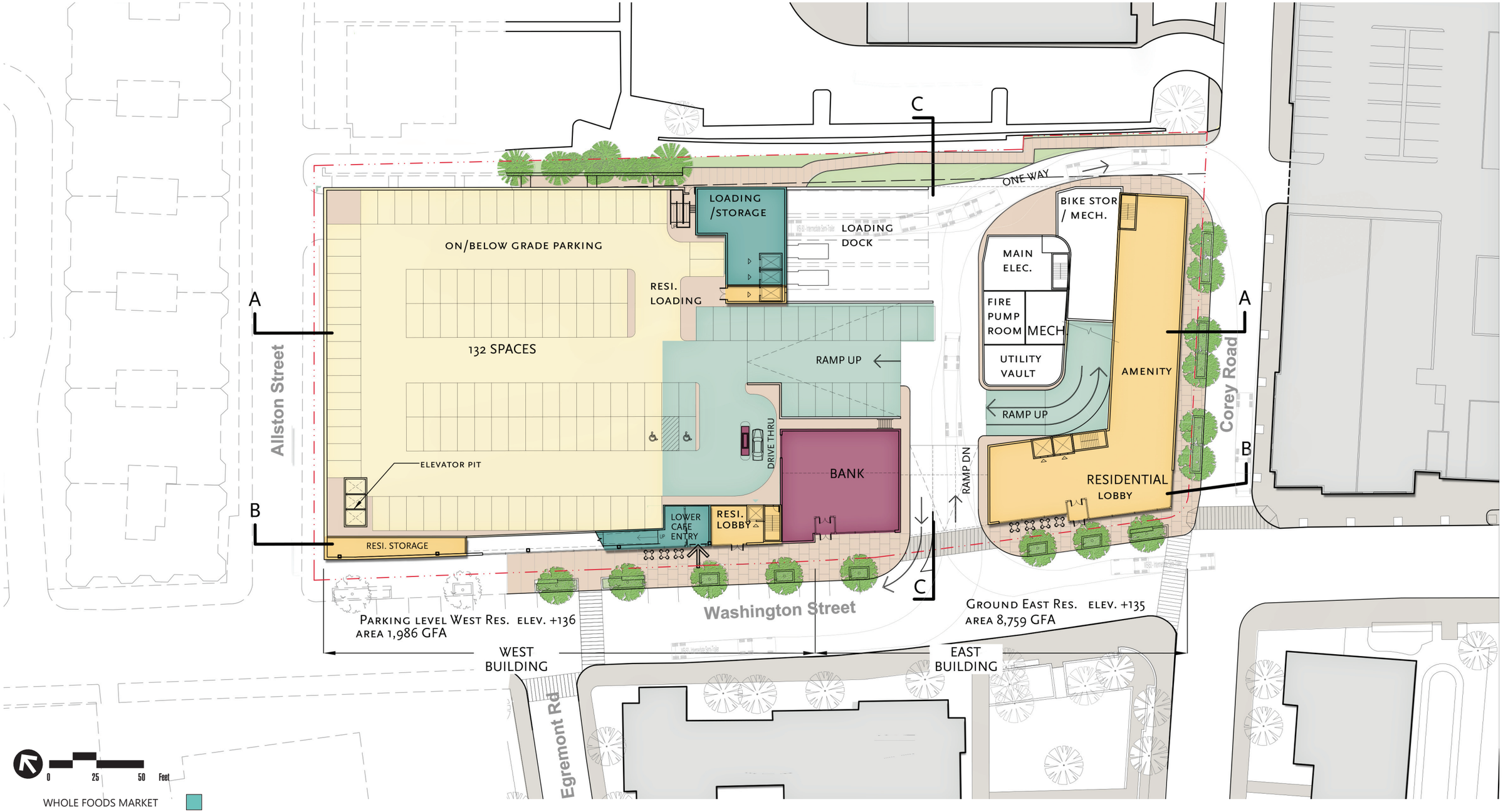


ELKUS MANFREDI ARCHITECTS

Figure 3.1

Neighborhood Context

15 Washington Street
Brighton, Massachusetts

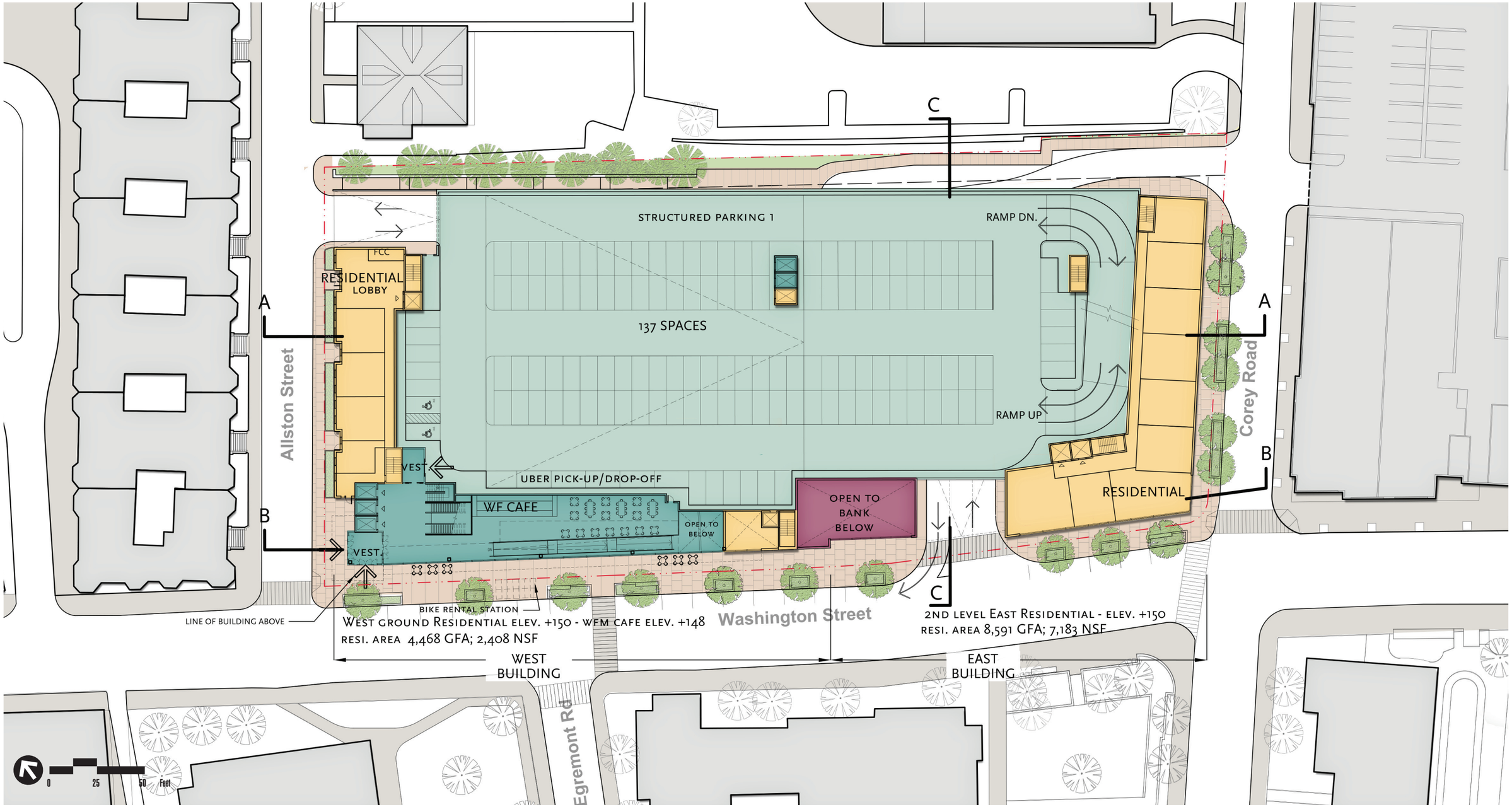


ELKUS MANFREDI ARCHITECTS

Figure 3.2a
West Building Parking Floor Plan

East Building Ground Floor Plan

15 Washington Street
Brighton, Massachusetts



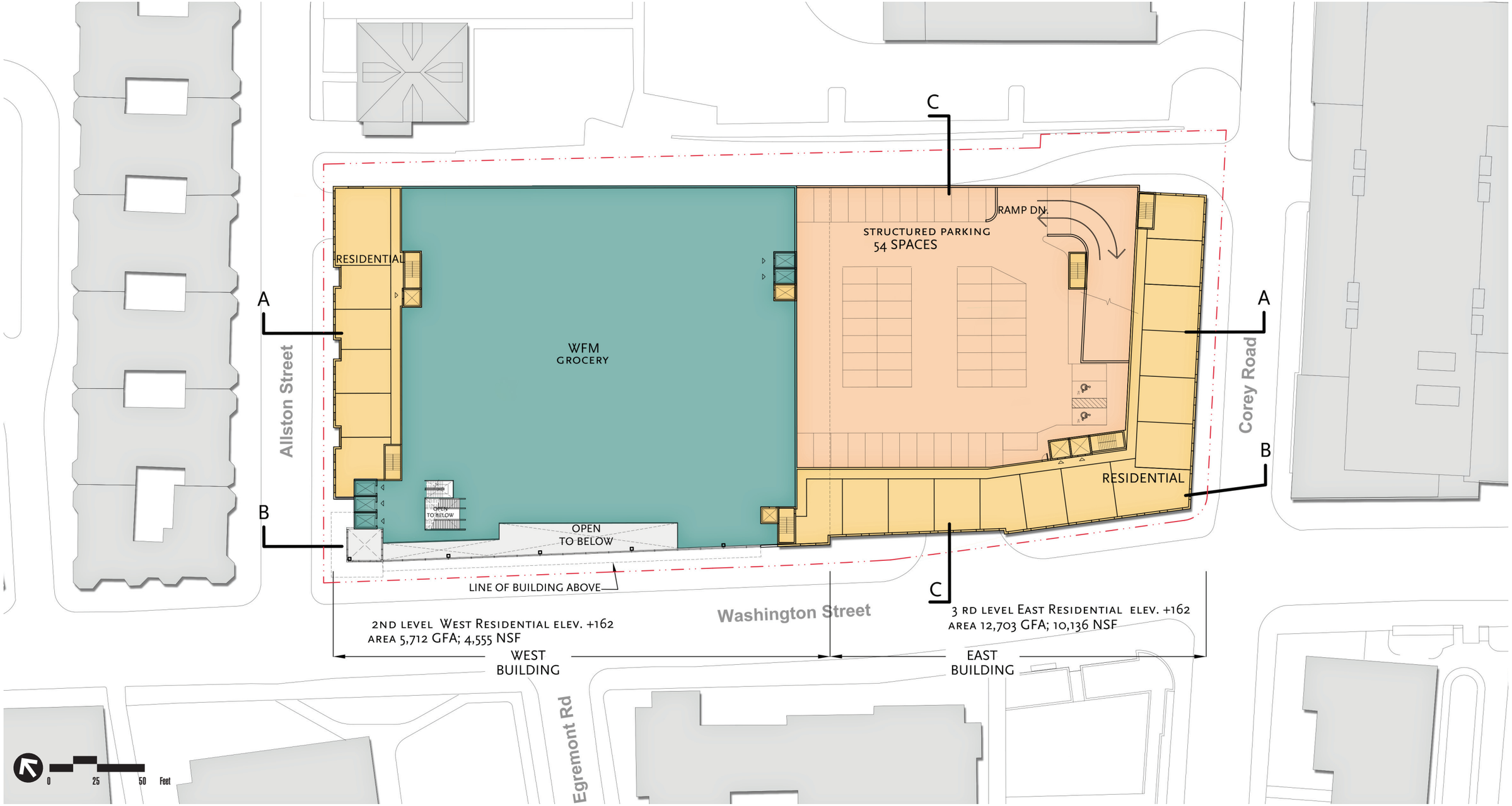
WHOLE FOODS MARKET
RETAIL/BANK
RESIDENTIAL
RETAIL PARKING
GREEN SPACE

ELKUS MANFREDI ARCHITECTS

Figure 3.2b
West Building Ground Floor Plan

East Building Second Floor Plan

15 Washington Street
Brighton, Massachusetts

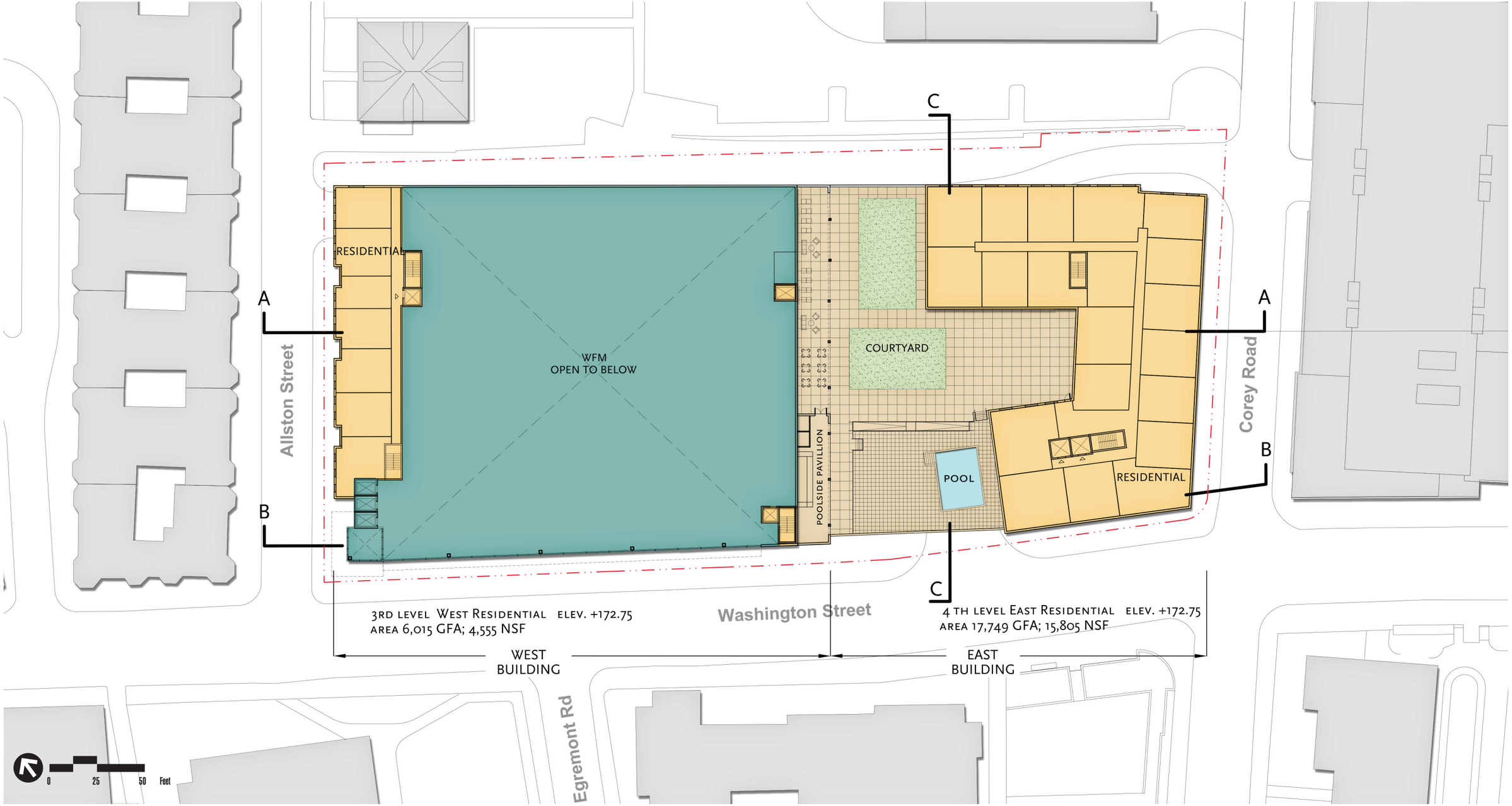


ELKUS MANFREDI ARCHITECTS

Figure 3.2c
West Building Second Floor Plan

East Building Third Floor Plan

15 Washington Street
Brighton, Massachusetts

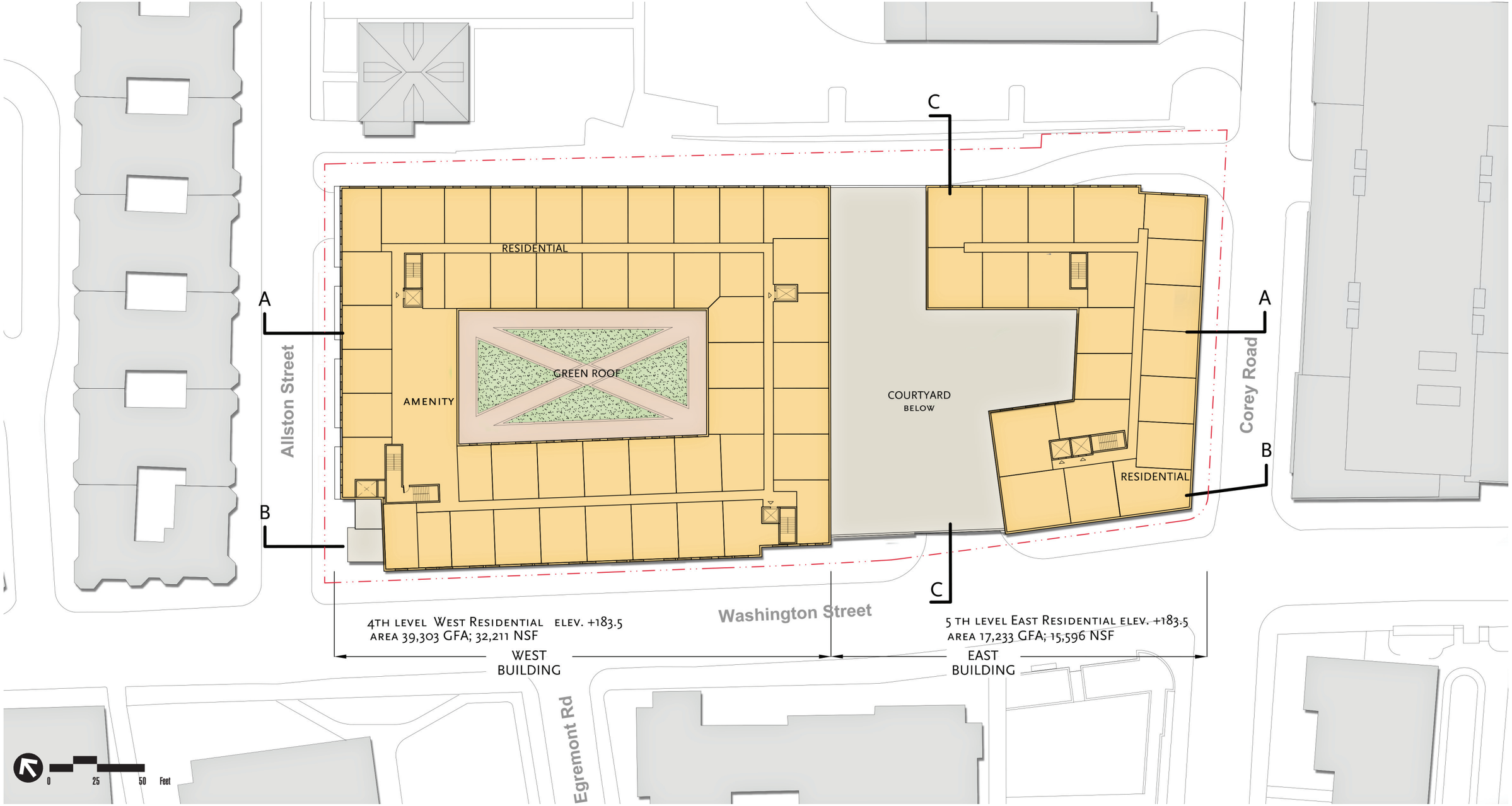


ELKUS MANFREDI ARCHITECTS

Figure 3.2d
West Building Third Floor Plan

East Building Fourth Floor Plan

15 Washington Street
Brighton, Massachusetts

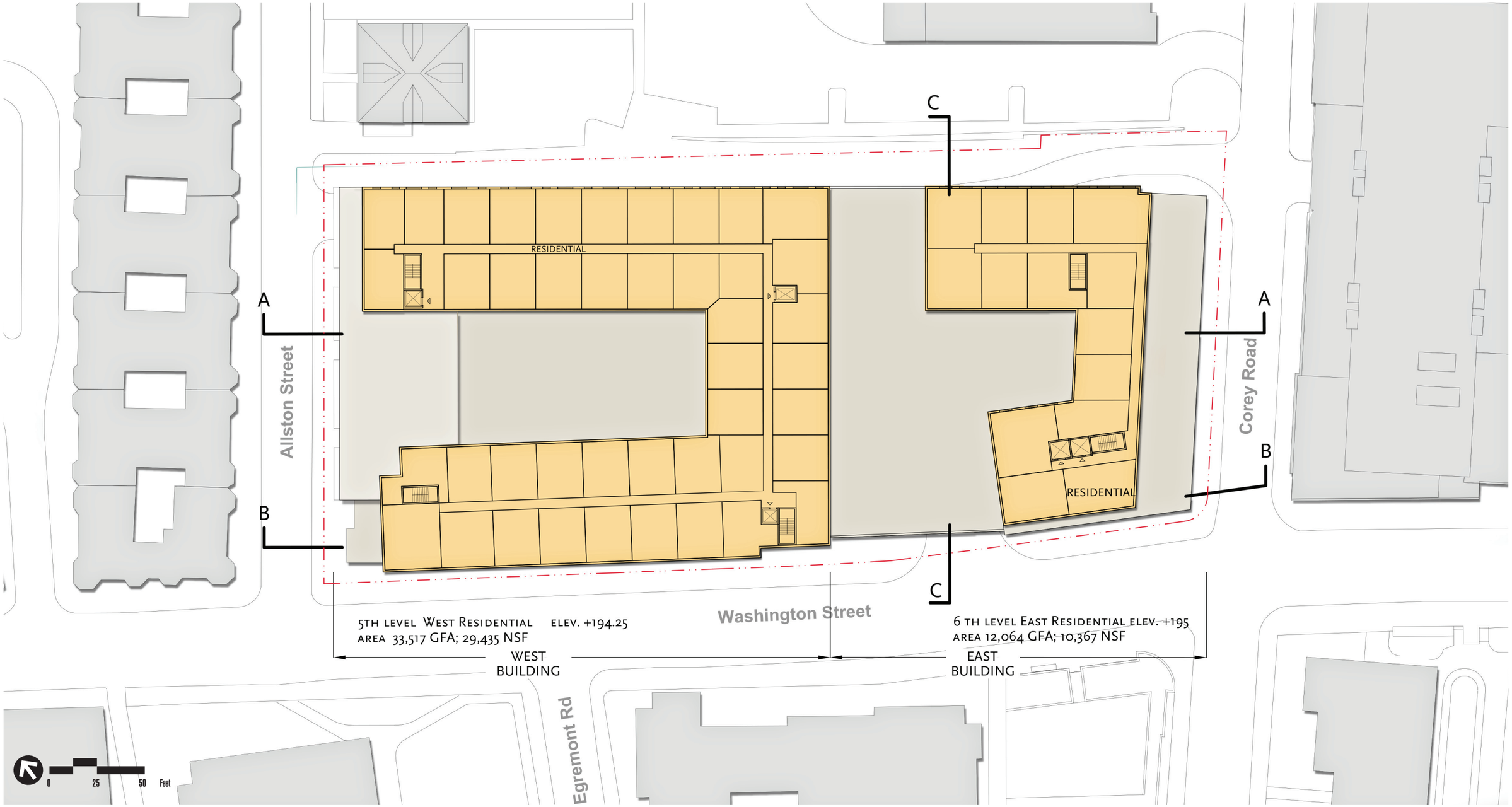


ELKUS MANFREDI ARCHITECTS

Figure 3.2e
West Building Fourth Floor Plan

East Building Fifth Floor Plan

15 Washington Street
Brighton, Massachusetts

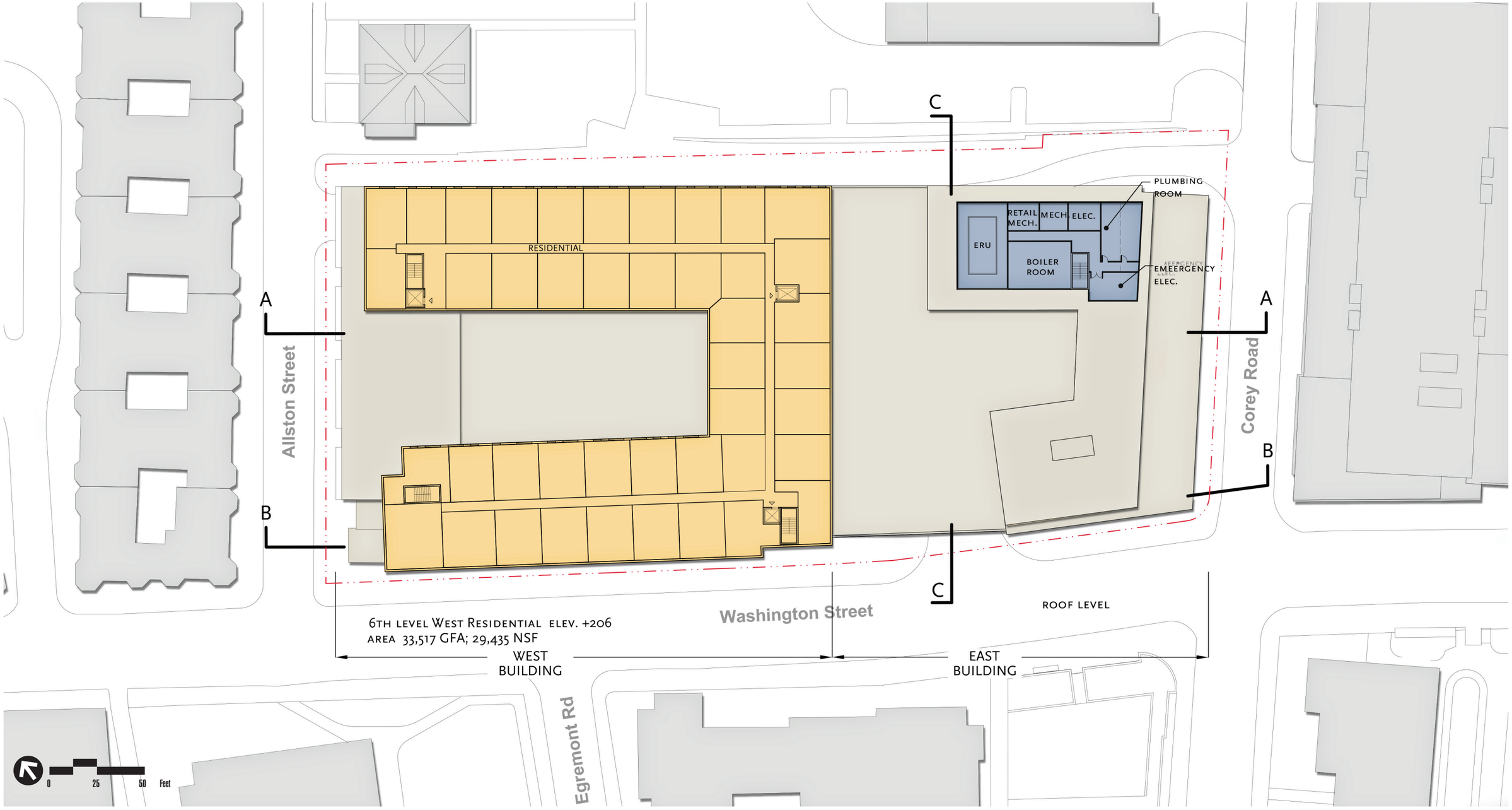


ELKUS MANFREDI ARCHITECTS

Figure 3.2f
West Building Fifth Floor Plan

East Building Sixth Floor Plan

15 Washington Street
Brighton, Massachusetts

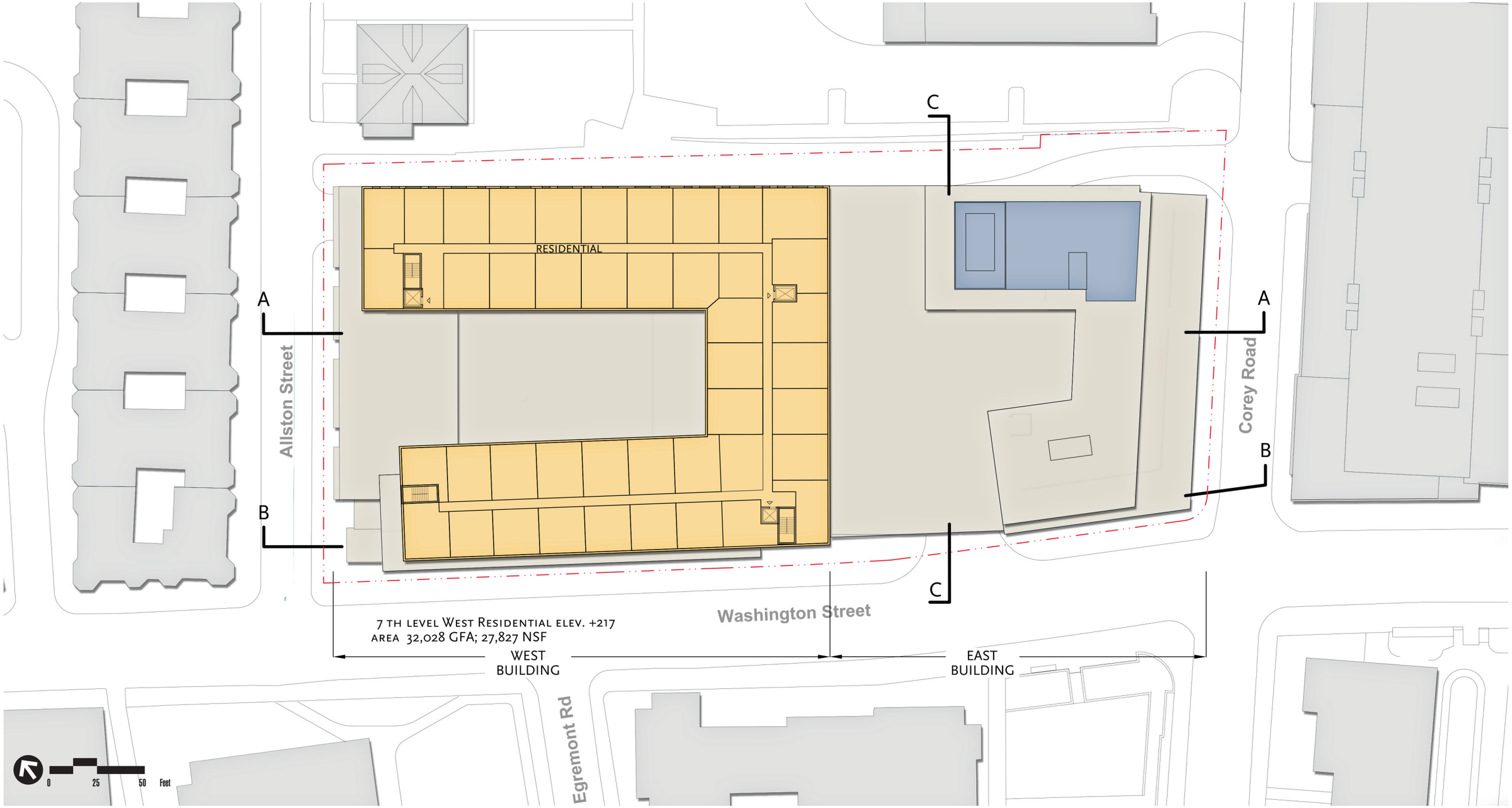


ELKUS MANFREDI ARCHITECTS

Figure 3.2g
West Building Sixth Floor Plan

East Building Roof Plan

15 Washington Street
Brighton, Massachusetts



ELKUS MANFREDI ARCHITECTS

Figure 3.2h
West Building Seventh Floor Plan

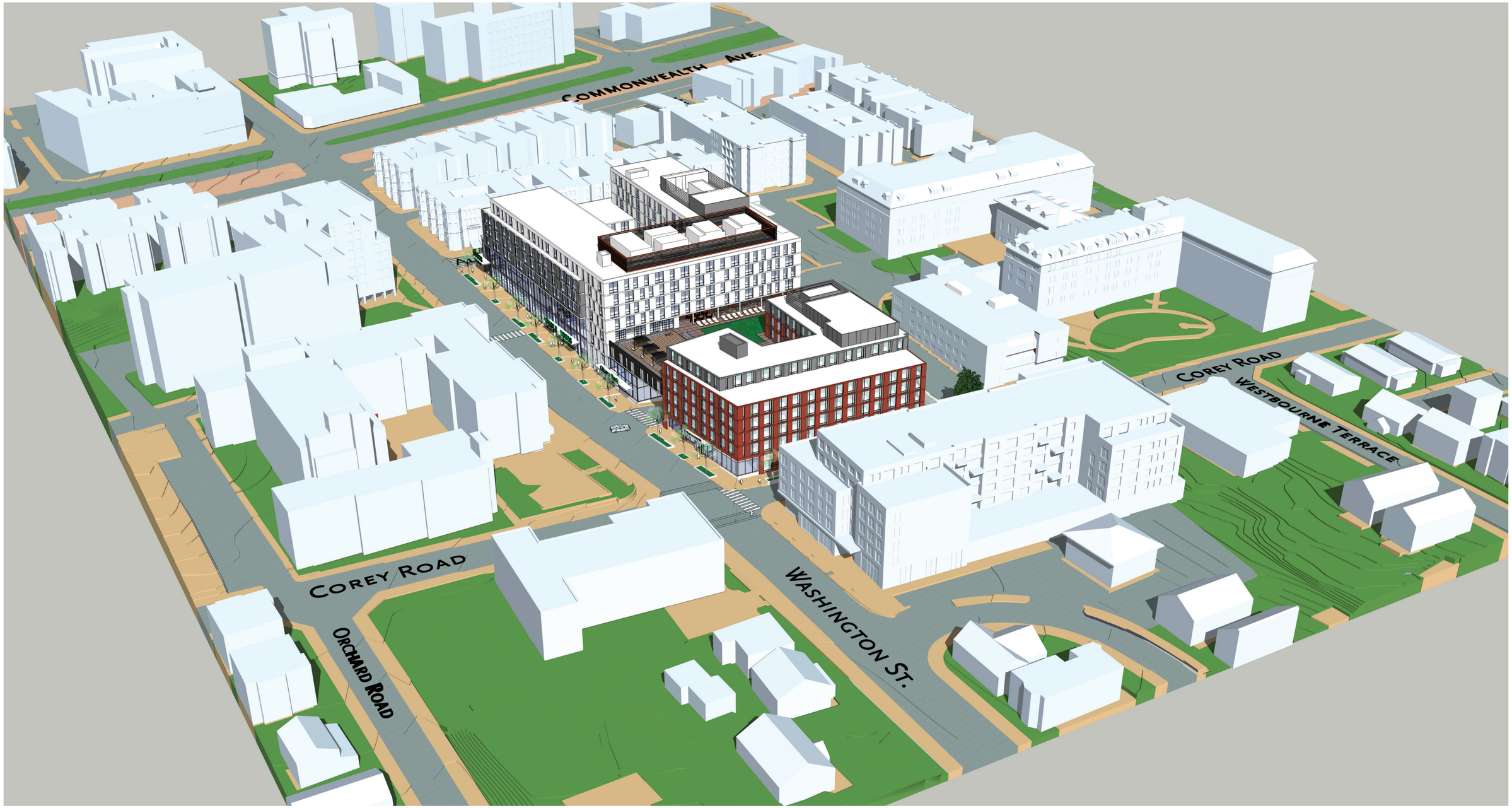
15 Washington Street
Brighton, Massachusetts

MECHANICAL

ELKUS MANFREDI ARCHITECTS

Figure 3.2i
West Building Roof Plan

15 Washington Street
Brighton, Massachusetts



ELKUS MANFREDI ARCHITECTS

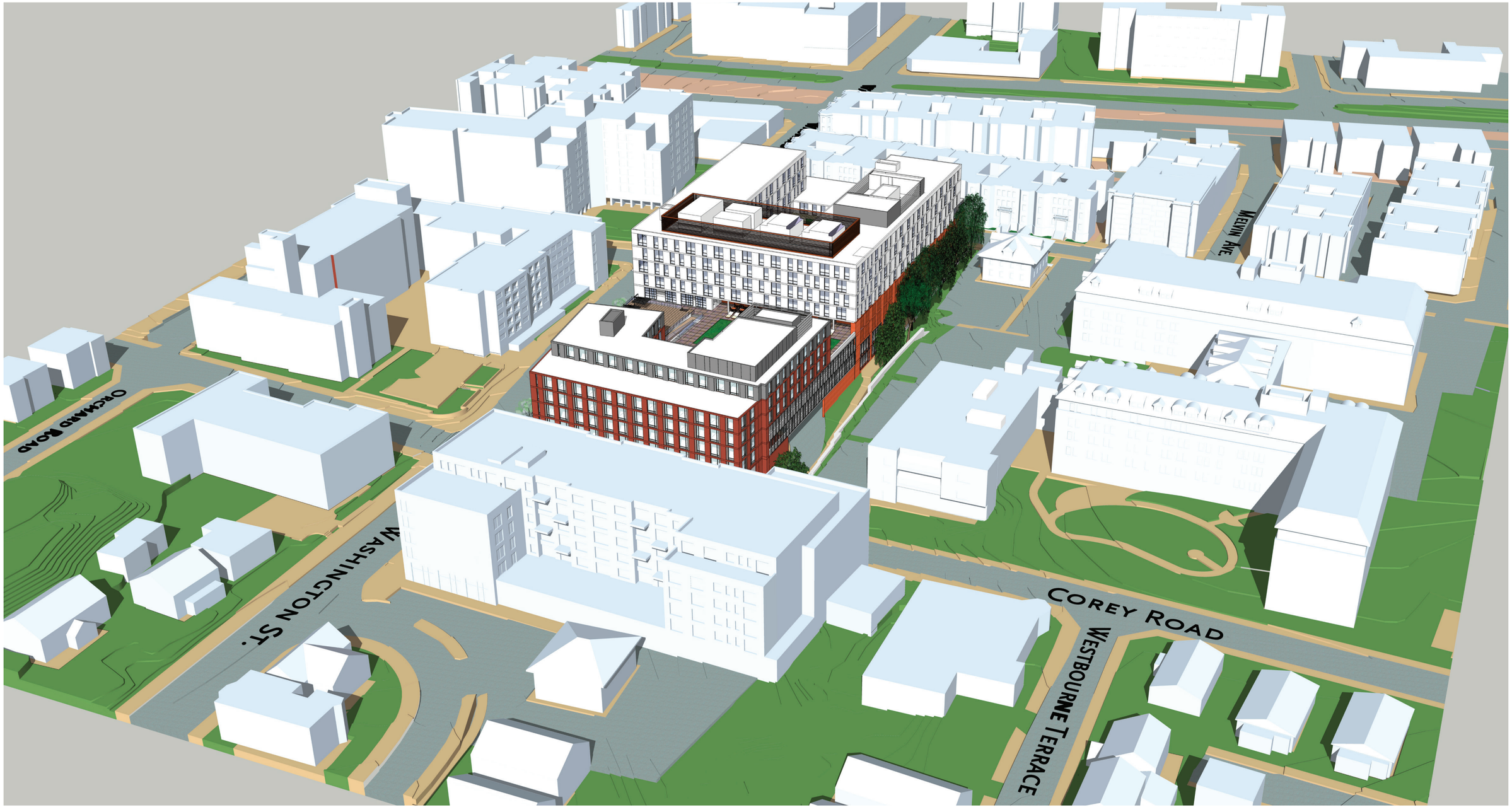
Figure 3.3a
Massing Diagram
Bird's Eye View From South East

15 Washington Street
Brighton, Massachusetts

ELKUS MANFREDI ARCHITECTS

Figure 3.3b
Bird's Eye View From South West

15 Washington Street
Brighton, Massachusetts



ELKUS MANFREDI ARCHITECTS

Figure 3.3c
Bird's Eye View From North East

15 Washington Street
Brighton, Massachusetts

ELKUS MANFREDI ARCHITECTS

Figure 3.3d
Bird's Eye View From North West

15 Washington Street
Brighton, Massachusetts

0 20 40 Feet

ELKUS MANFREDI ARCHITECTS

Figure 3.4a

South Elevation

15 Washington Street
Brighton, Massachusetts

0 20 40 Feet

ELKUS MANFREDI ARCHITECTS

Figure 3.4b

West Elevation

15 Washington Street
Brighton, Massachusetts

0 20 40 Feet

ELKUS MANFREDI ARCHITECTS

Figure 3.4c

North Elevation

15 Washington Street
Brighton, Massachusetts

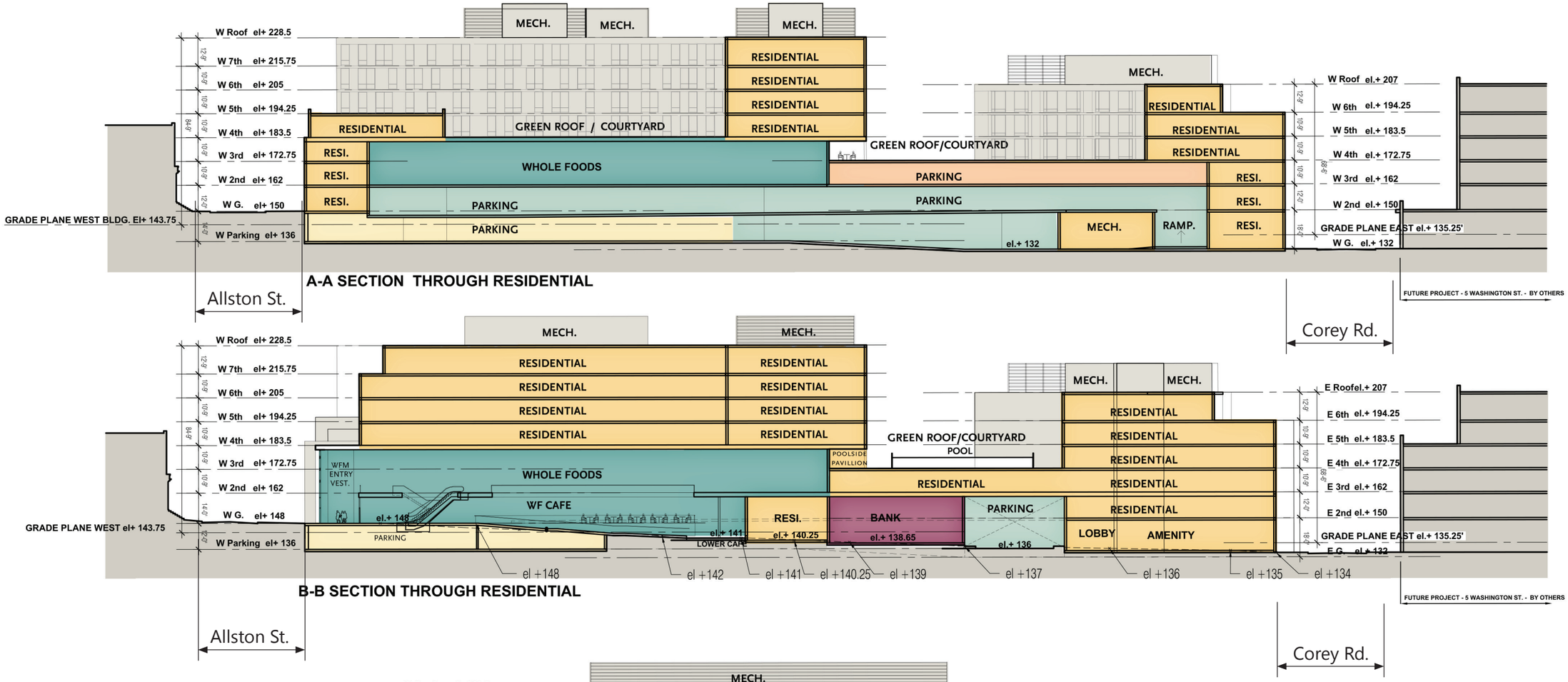
0 20 40 Feet

ELKUS MANFREDI ARCHITECTS

Figure 3.4d

East Elevation

15 Washington Street
Brighton, Massachusetts



ELKUS MANFREDI ARCHITECTS

Figure 3.5

Building Sections

15 Washington Street
Brighton, Massachusetts

ELKUS MANFREDI ARCHITECTS

Figure 3.6a

Perspective View From South West

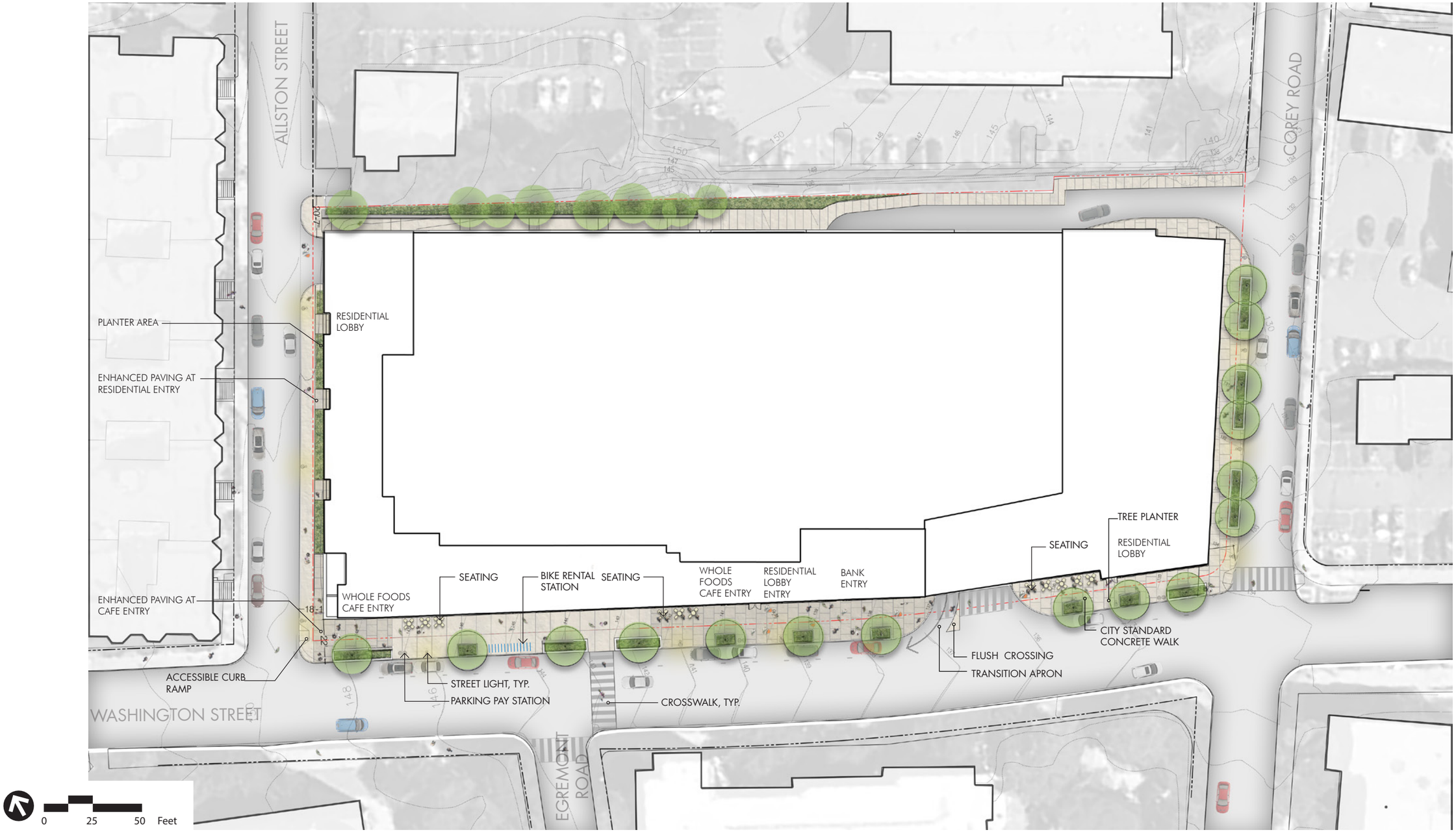
15 Washington Street
Brighton, Massachusetts

ELKUS MANFREDI ARCHITECTS

Figure 3.6b

Perspective View From South East

15 Washington Street
Brighton, Massachusetts

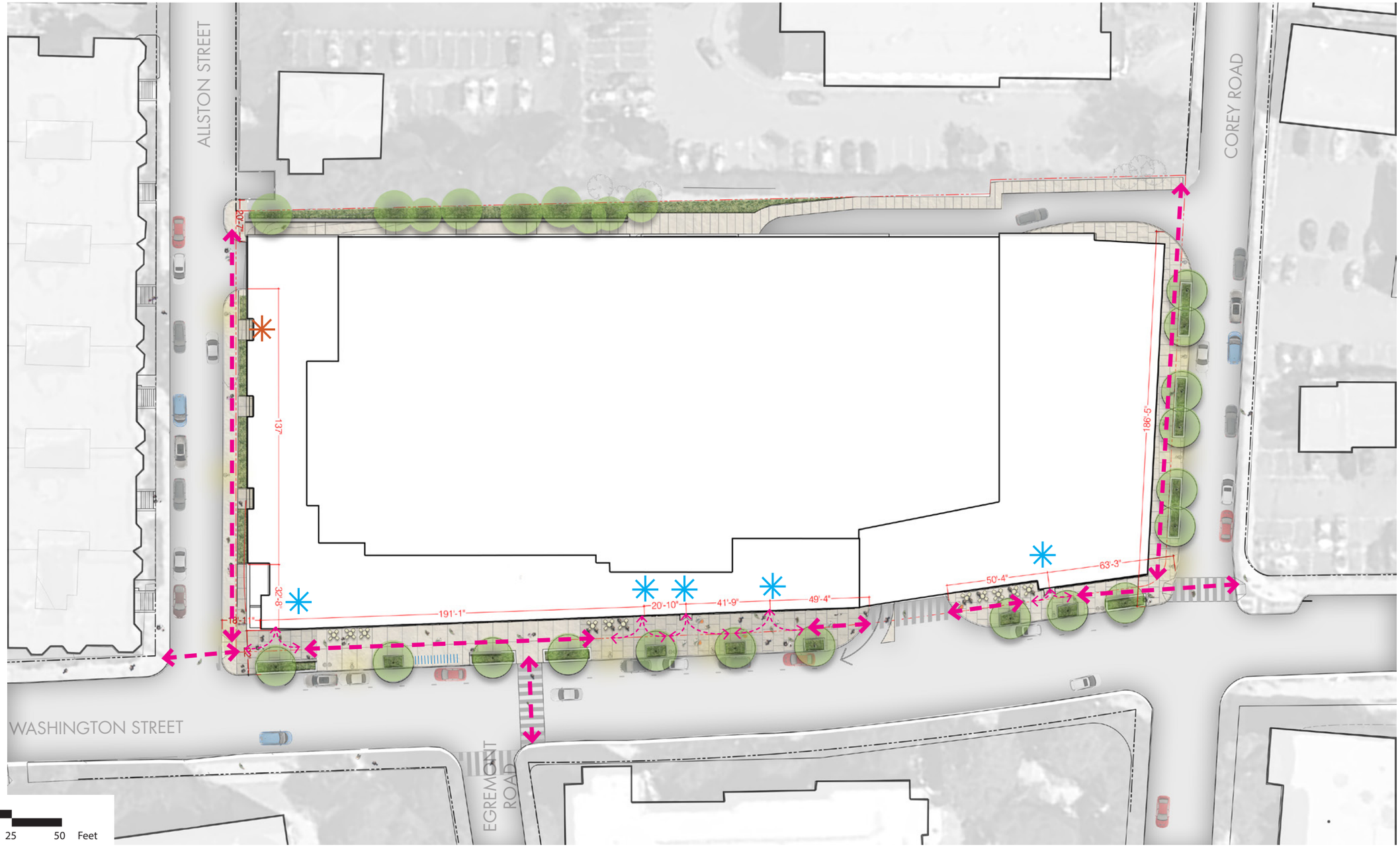


CRJA landscape architects

Figure 3.7

Streetscape Improvement Plan

15 Washington Street
Brighton, Massachusetts



Key

- Accessible Retail Entry
- Accessible Residential Entry
- Accessible Pedestrian Route

CRJA landscape architects

Figure 3.8

Pedestrian Access and Circulation Plan

15 Washington Street
Brighton, Massachusetts

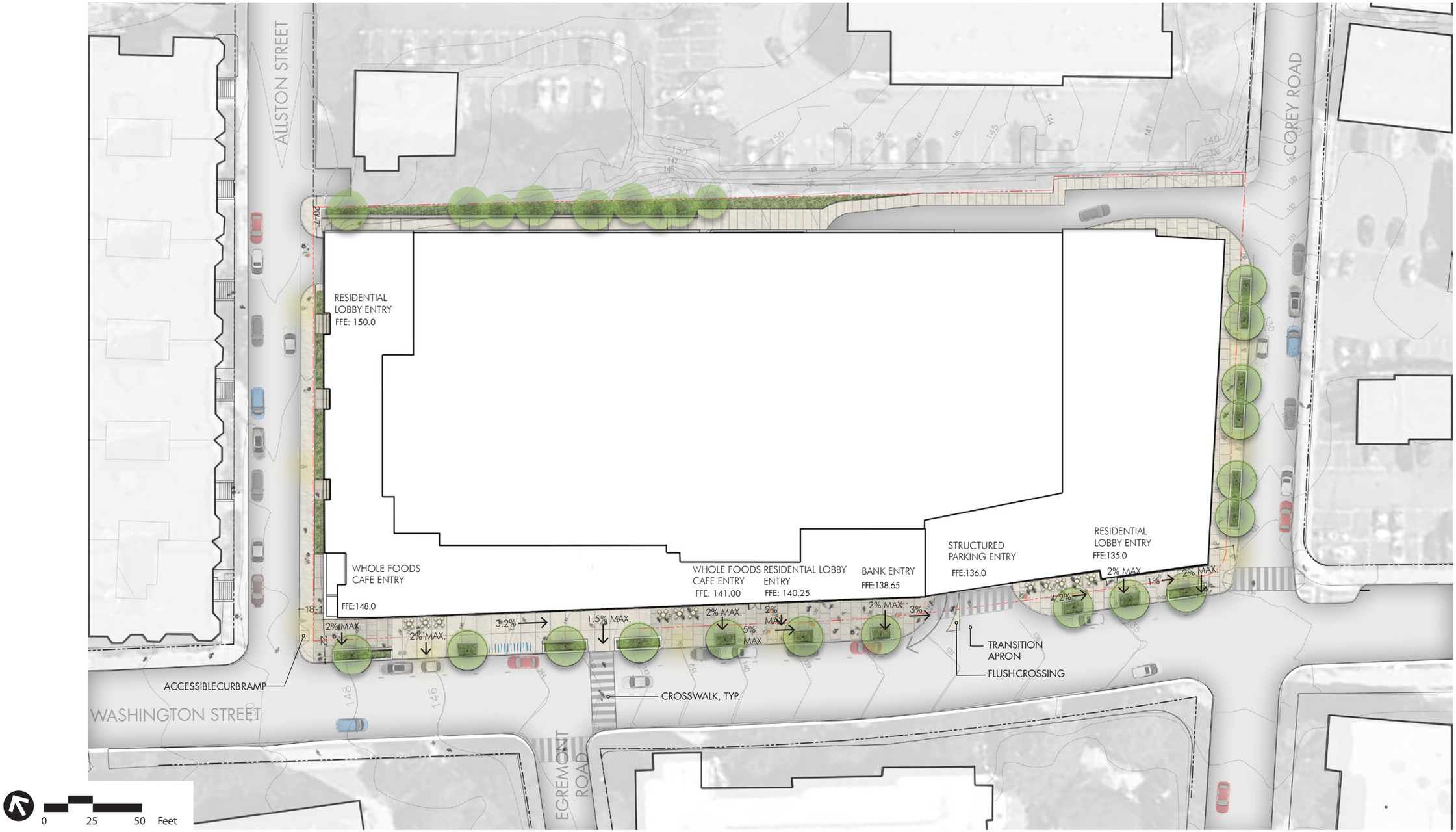


Figure 3.9

Ground Level Accessibility Diagram

15 Washington Street
Brighton, Massachusetts

4

Sustainability/Green Building and Climate Change Resiliency

The following chapter describes the overall approach to sustainable design, construction, and operation for the Project. Included is a preliminary assessment of green building design, in compliance with the requirements of Article 37 of the Code relative to the City's Green Building policies and procedures ("Article 37"). This chapter also discusses the approach to preparing for predicted climate change, in accordance with the current BPDA Climate Change Preparedness and Resiliency Policy (the "Resiliency Policy"). The required Climate Change Preparedness and Resiliency Checklist (the "Resiliency Checklist") has been completed for the Project and is provided in Appendix C.

4.1 Summary of Key Findings and Benefits

The key findings related to sustainability and climate change include:

- Reuse of a previously developed site in a dense urban setting as opposed to building on undeveloped open space.
- Mix of uses, including grocery, residential, and retail in close proximity to public transit and walkable to the established Brighton-Allston neighborhood consistent with Smart Growth principles.
- Efficient redevelopment plan that includes structured parking and increases open space.
- High level of sustainability by designing the Project Site and buildings using the LEEDv4 rating system, in compliance with Article 37.
- Reduction of overall annual energy consumption by an estimated 19.3 percent through the implementation of energy optimizing building design and systems, which equates to an estimated 10.4 percent reduction in stationary source CO_2 emissions. (Note, the percentages of energy use are different than emission reductions due to emissions conversion factors.)

  The early energy model study provides an evaluation of building system and alternative energy options, as well as demonstrates the proposed building designs meet the Massachusetts Stretch Energy Code requirement to be 10% better than ASHARE 90.1-2013.
- Consideration of alternative energy options, including photovoltaics and cogeneration systems.
- Adaptation and resiliency measures to address future impacts associated with climate change.

› Outreach to representatives of the local utility companies serving the Project Site to begin early discussions around potential energy conservation measures and the utility incentives programs.

4.2 Regulatory Context

4.2.1 Stretch Energy Code

As part of the Green Communities Act of 2008, Massachusetts developed the optional Stretch Energy Code that gives municipalities the option to enact a more strenuous energy performance code for buildings than the conventional state building code. The Stretch Energy 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.

Effective January 1, 2017 the current Stretch Energy Code, as adopted by the City, requires projects to achieve, at minimum, a 10 percent energy efficiency improvement when compared to the state's base energy code (the "Base Energy Code"). Projects may demonstrate the energy use savings by either meeting the performance standard of 10 percent better than ASHRAE 90.1-2013. In January 2018, the Stretch Energy Code was updated to require additional efficiency measures from section C406.1 when calculating the baseline building performance. This makes achieving a 10 percent or better energy efficiency more challenging, thus, requiring increased energy conservation measures for the proposed design.

4.2.2 Article 37 – Green Buildings

Article 37 submittal requirements include completing a LEED scorecard to demonstrate that a project meets the minimum requirements to achieve a LEED Certified level (all LEED prerequisites and achieve at least 40 points) ("LEED certifiable"). With the LEED version 4, or "v4," rating system effective as of October 31, 2016, the BPDA requires initial Article 80 Large Project Review submissions on or after November 1, 2016 to demonstrate LEED certifiable status using LEEDv4. This latest iteration of the LEED rating system standards is measurably higher and more stringent in many categories.

The Boston Interagency Green Building Committee ("IGBC") advises the BPDA on a proposed project's compliance with the provisions of the article. The Committee consists of representatives of city agencies including the BPDA, BED, BTD, the Inspectional Services Department and the Mayor's Office.

Boston Green Building Credits

Appendix A of Article 37 lists Boston Green Building Credits, which are credits that may be included in the calculation toward achieving a LEED certifiable project. These credits were developed by the City and are intended to address local issues unique

to development within Boston. The credits include the following categories: Modern Grid, Historic Preservation, Groundwater Recharge, and Modern Mobility.

4.2.3 BPDA Climate Change Preparedness and Resiliency Policy

In conformance with the Mayor's 2011 Climate Action Leadership Committee's recommendations, the BPDA requires projects subject to Boston Zoning Article 80 Large Project Review to complete the Resiliency Checklist to assess potential adverse impacts that might arise under future climate conditions, and any project resiliency, preparedness, and/or mitigation measures identified early in the design stage. The Resiliency Checklist is reviewed by the IGBC.

4.3 Sustainability/Green Building Design

The Proponent seeks to include environmentally-conscious features and strategies that will benefit tenants, residents and owners. The development team is exploring opportunities in energy conservation and sustainable design throughout the development and will determine appropriate energy conservation and sustainable design approaches suited for integration into the development and buildings.

The Project is located on a previously developed site in the Brighton-Allston neighborhood of Boston and near the Washington Street (B line) and Washington Square (C line) MBTA stations, as well as multiple bus routes.

The design of the buildings will include high efficiency building systems, (mechanical, plumbing and electrical) and a high-performance building envelope. Sustainable design measures such as LED lighting, low flow plumbing fixtures, building energy management systems and healthy interior environments are a few of the features the team anticipates including in the design of each of the buildings.

4.3.1 Compliance with Article 37

Article 37 of the Code requires new building projects to be designed to meet the compliance level of LEED certifiable using the LEEDv4 rating system. The proposed buildings will strive to meet or exceed this requirement. Specifically, the Project will meet or exceed the compliance level of LEED certifiable using the LEEDv4 for New Construction (NC) rating system.

Based on preliminary design, the Project is targeting a LEEDv4 Certified level, as demonstrated in the preliminary LEED scorecard presented in Figure 4.1. The Project is currently tracking 43 'Yes' points for a Certified rating and 41 'maybe' points. The 'maybe' points represent credits that will continue to be evaluated as design progresses. The Project has been registered with USGBC through LEED Online.

The narrative below summarizes the sustainable design compliance approach for each of the project types planned for the Project, in compliance with Article 37.

Integrative Process (IP)

The development team meets regularly to ensure the team members from the various disciplines involved are all known to each other and collectively communicating. Sustainable design focused workshops were held early on to assist the development team in establishing shared sustainable design and energy efficiency goals for the development, including the use of a "simple box" energy modeling tool. As the Project progresses, there will be multiple sustainable design-focused workshops to ensure the entire development team is engaged throughout the design and construction process.

The development team intends to meet with Eversource and National Grid to discuss the incentive programs and potential Energy Conservation Measures for the Project.

Location and Transportation (LT)

The Project Site is in the urban neighborhood of Brighton near the Washington Street (B line) & Washington Square (C line) MBTA stations, as well as multiple bus routes. These transit options yield 312 ride options per weekday and 295 weekend ride options.

The Proponent will consider providing preferred parking for low-emitting fuel-efficient vehicles and/or electric vehicle charging stations to further reduce GHG emissions associated with vehicles.

The Project includes wide sidewalks and bike lanes to support pedestrian and cyclist safety. Exterior short-term bike storage for visitors and retail patrons will be provided at multiple exterior locations within the Project. Residents and employees will have access to enclosed secure bike storage areas within the parking structures. Changing room and shower facilities may be included in the core and shell office building to accommodate the employees of the retail tenants.

The immediate neighborhood provides a variety of services with pedestrian and cyclist access including restaurants, laundromats, banks, and a post office. The Project Site currently has a Walk Score of 83, a Transit Score of 75 and Bike Score of 89.

Sustainable Sites (SS)

The Project Site is a previously developed parcel in a densely developed Boston neighborhood. A site assessment was completed; it was determined there are urban fill type soils that require management. A compliant plan will be drafted, submitted and implemented to ensure the soils are managed appropriately.

The Project has been designed to incorporate, pedestrian-oriented streetscapes and green roofs. The addition of these green roof areas help reduce rainwater run-off.

A Project-wide rain water management plan will be developed to address the rate, run off and quality of the site rainwater. As described more fully in Chapter 7, *Infrastructure*, the Project will meet BWSC and MassDEP stormwater management requirements by significantly reducing the rainwater runoff by directing it into a below-grade re-charge/collection system sized to treat 1-inch of rain over all

impervious areas of the Project Site. Additionally, the rainwater will be absorbed through surface on-grade landscaping and green roofs. Rainwater directed to the municipal system will be treated to remove suspended solids prior to being released into the City system.

Water Efficiency (WE)

The Project will reduce potable water use for both sewage conveyance and irrigation needs. The development team plans to specify low-flow/high-efficiency domestic and commercial plumbing fixtures. Fixtures being studied at this time including the following:

- Residential: 1.28 gallons per flush (gpf) Water Closet (WC), 1.0 gallons per minute (gpm) Lavatory faucet; 1.75 gpm shower head; 1.8 gpm kitchen faucet.
- Commercial: 1.28 gpf WC; 0.125gpf urinal; 0.5 gpm Lavatory faucet (metered); 1.75 gpm shower head.

Through the use of low-flow and high-efficiency plumbing fixtures, the proposed buildings are expected to reduce interior potable water use and sewage conveyance.

The on-grade landscape design and the green roof areas will use a mixture of drought tolerant trees, shrubs, and groundcover that grow well in an urban environment. The project is explore using no permanent irrigation, however if an irrigation system will be used it will be designed to be efficient and use significantly less potable water when compared to a conventional irrigation system (at a mid-summer baseline, per LEED requirements).

Energy & Atmosphere (EA)

The proposed buildings will be designed with high-efficiency building systems and a high-performance building envelope. There are some alternative energy strategies that may be considered for further investigation, such as photovoltaic arrays, and co-generation, as discussed in Section 4.4.2 below.

The proposed HVAC system designs for the residential buildings include vertical stack water source heat pumps, and a central plant for ventilation air and hot/chilled water distribution. The proposed HVAC system design for the grocery store includes an energy efficient central plant with cooling towers, chillers, and condensing boilers. Heat recovery ventilation AHUs will deliver 100 percent outside air. The design will include a DDC Building Automation system that is expandable to accommodate tenant systems and equipment.

Only refrigerants with low global warming and ozone depleting potential will be specified for use in building systems equipment. Each of the buildings, including the parking structures, will target lighting power densities 10 to 20 percent below code requirements through the use of LED lighting and lighting control systems.

The preliminary energy use assessment was conducted using whole building energy modeling. The proposed building designs currently meet both the Stretch Energy Code and LEEDv4 prerequisite criteria.[1]

Additionally, the Proponent plans to engage a Commissioning Agent (CxA) to perform both fundamental and enhanced commissioning services including providing reviews of design documents. The CxA will continue through construction and ultimately confirm the building systems are installed and function as intended and desired.

Materials and Resources (MR)

The Project will specify materials and products that are environmentally responsible and are transparent regarding the harvest and extraction of raw materials and the manufacturing processes. The development team will endeavor to specify materials and products with environmental and health product declarations to help support a reduced impact of the development on the environment.

Waste management will be addressed both during construction and post occupancy. The construction manager (CM) will provide a construction waste management plan to divert a minimum 50 percent of the construction and demolition debris comprised of multiple waste streams.

Post occupancy, collected recyclables will be accommodated on the ground floor of the each of the buildings in an area near the loading docks. Core and shell tenants and residents will bring their recyclables to a central storage room. The residential buildings may incorporate trash and recycling chutes on each floor. A contracted waste management company will pick up the collected recyclables on a regular basis.

Indoor Environmental Quality (IEQ)

The buildings will have a healthy interior environment generated through the use of low-VOC containing interior construction and finish materials and maintained through an efficient ventilation system in compliance with ASHRAE 62.1-2010. In compliance with local regulations, each building will be non-smoking and no smoking will be allowed within 25 feet of the building including on residential terraces and in building courtyards.

Additionally, during construction, the CM will develop and implement a compliant Indoor Air Quality Management Plan for the construction and pre-occupancy phases of the Project.

The conceptual building envelope design for the proposed buildings includes large areas of vision glazing with ample access to daylight and views for the anticipated regularly occupied spaces in both the residences and on a typical office floor.

[1] The Stretch Energy Code compliance model is compared to an ASHRAE 90.1-2013 baseline and the LEED model is compared to the ASHRAE 90.1-2010 baseline.

Both the core and shell office and the residential building thermal comfort systems and controls will be designed to meet the requirements of ASHRAE 55-2010 for all applicable mechanically ventilated regularly occupied spaces.

Innovation in Design (ID)

The Proponent will explore innovative approaches to design, construction, and operations and maintenance, including considering specifying low-mercury lighting, integrating public green education, and implementing an integrated pest management plan, and/or a green housekeeping plan.

Regional Priority Credits (RPC)

Applicable regional priority credits for the Project Site may include:

- EA Renewable Energy Production (2pt threshold)
- EA Optimize Energy Performance (8pt threshold)
- SS High Priority Site (2pt threshold)
- SS Rainwater Management (2pt threshold)
- Indoor Water Use Reduction (4pt threshold)

Boston Green Building Credits

At this preliminary design stage, the Project will evaluate achieving two of the four available Boston Green Building credits (Appendix A of Article 37):

Groundwater Recharge

The Proponent intends to assess if the site-wide rain water management plan meets the requirements of this Green Building credit once it is further developed.

At a minimum, the BWSC requirements will be met, but at this time the infiltration rates, seasonal high groundwater elevations, and locations of soil and/or groundwater contamination have not been evaluated. These factors may limit the Project from infiltrating in certain areas.

Modern Mobility

As described in Section 5.8 of Chapter 5, *Transportation*, the Proponent plans to develop and implement a comprehensive TDM Plan and will seek to pursue the Boston Green Building Modern Mobility credit. As part of the transportation mitigation strategy, the Project includes significant short- and long-term bicycle storage locations, in compliance with BTD's guidelines, and including a public bike-share station, if desired by the City, as well as access to public transportation. The Proponent will consider providing preferred parking for low-emitting fuel-efficient vehicles and/or electric vehicle charging stations within each of the garages serving the buildings comprising the Project.

4.4 Energy Conservation Approach

The Project buildings will be designed to be energy efficient to the extent possible. Buildings will include a high-performance envelope designed specifically for the building use and orientation. Buildings will have a central plant with high-efficiency cooling tower equipment and condensing boilers. Ventilation air will be provided through ERUs. The residences will have water source heat pump units. The core and shell office tenants will provide their own run ducts and terminal units. The Proponent plans to register the proposed buildings with the ENERGY STAR Portfolio Manager® program to record and monitor whole-building electricity, gas, and water use.

Additionally, the Proponent is exploring opportunities for renewable energy, such as a photovoltaic array and the use of combined heat and power.

4.4.1 Preliminary Energy Conservation/GHG Emissions Reduction Approach

In alignment with regional efforts to reduce Greenhouse Gas (GHG) emissions and in support of Boston's specific GHG emissions reduction targets the proponent will continue to evaluate energy efficiency measures (EEMs) for possible inclusion in the project. The EEMs may include high performance glazing, increased insulation, low lighting power densities, low flow plumbing fixtures, high efficiency mechanical and ventilation systems equipment and alternative energy sources. Whole building energy modeling was used for a preliminary analysis of possible energy efficient measures.

Methodology

To comply with the minimum energy requirements of the Massachusetts Stretch Energy code, the design must achieve at least 10% site energy savings relative to ASHRAE 90.1-2013 Appendix G. In addition, two efficiency package options must be included in the ASHRAE 90.1-2013 Appendix G baseline energy performance.

The 2017 MA Energy Code requires that buildings comply with Chapter 13 of the 780 CMR: Massachusetts Amendments to the International Building Code. Section C406.1 requires two additional Efficiency Package Options to be implemented in the building design and construction. The selected Efficiency Package Options are:

1. More efficient HVAC performance which requires the HVAC equipment exceeds the minimum efficiency requirements by 10%; and
2. Reduced Lighting Power Density, which requires a minimum 10% lighting power density reduction compared to IECC 2015.

Energy Model Results and GHG Emissions Reductions

The residential buildings and the retail spaces all meet the updated code requirement to be a minimum of 10% below an ASHRAE 90.1-2010 baseline.

The current design shows savings of 19.3% in annual energy consumption compared to an ASHRAE 90.1-2013 baseline building, which exceeds the requirements of the MA Stretch Code and results in an approximately 10.4% reduction in CO_2 emissions for the residential buildings. The proposed building Energy Use Intensity (EUI) is estimated to be 44.7 kBtu/sf/yr, while the baseline building is estimated to be 55.4 kBtu/sf/yr.

The energy conservation measures (ECMs) considered in this analysis include:

- Improved Glass Assembly U-value and SHGC.
- High Performance LED lighting with reduced lighting power density.
- High Performance WSHPs
- Dedicated outside air unit with energy recovery wheel.
- High Efficiency Condensing Hot Water Boilers
- High Efficiency Condensing Hot Water Heaters with Low Flow Fixtures

Refer to Appendix D for additional detail on the preliminary energy modeling results for the Project.

4.4.2 Clean and Renewable Energy Analysis Evaluation

Combined Heat and Power (CHP)

Combined heat and power ("CHP") systems, also known as cogeneration, generate electricity and useful thermal energy in a single, integrated system. 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. CHP systems are most advantageous for facilities that have a hot water demand year-round. The project team will explore the benefits of implementing CHP for the residential building for use in heating domestic hot water.

A 75 kW CHP system to power the base electrical load for the building will be considered. The building will have more than 230,000 square feet of residential space and more than 45,000 square feet of Grocery with year-round domestic hot water demand. For the economics to make sense, it is important that all thermal energy produced by the CHP is consumed by the building. A detailed economic analysis will be conducted during the design phase of the project. With involvement and input from the utility, including the utility's approval to connect back into the grid, such a system can be further evaluated. It is important to note that full build-out of the building is a few years away. Given this timeframe, it is anticipated that energy conservation technologies will advance providing additional, potentially more viable options than a CHP system. Therefore, as the design progresses the

Proponent is committed to continuing to evaluate the feasibility and benefits of a CHP system for the Project, as well as other technologies for comparative purposes.

The following aspects will be considered when further investigating cogeneration and trigeneration to supply energy for the Project:

1. The technology should only be considered once other priority energy efficiency measures are implemented to reduce the projected energy demand for the Project.
2. Volatility in energy prices can cause discrepancies in long-term savings versus short-term savings.
3. Connection requirements with the utility providers need to be determined.
4. Variations in the building's operation and energy demand, which 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).

Solar Photovoltaic (PV) Systems

A preliminary evaluation of incorporating both roof-mounted and building integrated solar photovoltaic (PV) systems has been conducted for the Project. The results of this study show the initial payback assessment for the roof mounted arrays is close to 25 years and 34 years for the building integrated approach. As the design progresses, the team will re-evaluate the possibility of a solar PV array installation once there is more detail regarding the available roof area and a better understanding of any possible incentive or grant programs to help offset the initial investment. At minimum, the buildings will be solar ready to accommodate a possible future solar installation. This will give the owner flexibility if the market changes and they want to invest in solar later. The design team will consider how the roof structure, roof space, and building orientation will affect a future installation. The necessary infrastructure will be included as the building design evolves and solidifies.

Solar Thermal

Solar thermal systems are dependent on available roof area, whereas Photovoltaic systems can be installed in several locations including vertically along the façade. Solar Thermal and Photovoltaic systems have similar paybacks, however, there are additional maintenance costs associated with solar thermal.

Additionally, the team is committed to investigating the benefits of a small CHP system for each of the residential buildings, which should provide hot water to satisfy most of the domestic hot water load for the building. There would be no need for additional capacity from a solar thermal system.

Architectural Wind

The project team evaluated the merits of building mounted mini-turbines and determined they would not provide enough power to make the installation

economically feasible. A mini-turbine will produce less electricity than a photovoltaic system, but will likely cost more to install. Wind turbines also have additional operation and maintenance costs to consider since they contain moving parts.

Geothermal

The Proponent will explore the application of geothermal systems for the Project. The existing soils and sub-surface conditions will impact the type of system and the layout, therefore, further investigation is necessary.

4.4.3 Energy Efficiency Utility Assistance

The project team has met with representatives of local utility companies serving the area to discuss the utility Incentives programs available for each project type.

By working with these utilities throughout the design process, the Proponent will evaluate additional energy conservation strategies and, therefore, additional energy savings and associated GHG emissions reductions may be achieved. The Project will participate in the MassSave New Construction Program, which is designed to target energy efficiency opportunities in new commercial facilities. The program provides financial incentives and technical assistance to developers, customers and design professionals to encourage the use of design features and equipment that optimize energy efficiency in the new construction projects.

To determine the incentive levels, a whole building energy model will be created using DOE-2 based eQuest Version 3.65. The analysis will be performed through the Mass Save Whole Building Program, Large Building Path. The baseline energy model will be based on ASHRAE 90.1-2013. The proposed model will incorporate any energy conservation measures proposed by the design team. The proposed model will accurately reflect the whole building, per its design.

4.5 Climate Change Preparedness and Resiliency

As required by the BPDA for Large Project Review, the Proponent has begun to consider the projected impacts related to climate change in early stages of planning and design by completing the Resiliency Checklist (Appendix C). Climate change is expected to result in rising sea levels, more frequent extreme storms, and more extreme weather events. The following sections describe what has been considered as it relates to climate change impacts as part of the early stages of project design.

4.5.1 Sea Level Rise and Extreme Storms/Flooding

The Project Site is located outside of the 100-year flood zone and is approximately 4,100 feet from the closest open body of water. Therefore, extreme flooding and sea level rise are not anticipated to impact the Project.

4.5.2 Extreme Weather Events

In addition to sea level rise, additional climate change issues predicted for Massachusetts, per the 2011 Massachusetts Climate Change Adaptation Report, include an increase in extreme weather events which could consist of drought, tropical rainfall patterns (i.e., increased precipitation) and extreme heat and cold stretches, increase in the number of days with extreme heat (i.e., temperatures greater than 90°F and 100°F) and/or fewer days of snow yet increased winter precipitation. Project-related resiliency measures aimed at addressing these potential events are discussed below.

4.5.3 Potential Resiliency Measures

Site Resiliency Measures

To manage stormwater, the Project will provide infiltration that retains site runoff while providing treatment and peak flow mitigation in accordance with municipal stormwater standards. Additionally, the Project Site will grade away from the proposed buildings and on-site drainage will be picked up by area drains or infrastructure in the surrounding streets.

At the street level, the Proponent aims to reduce the heat island effect through the use of use of light-colored paving materials and integration of greenery, such as tree canopy cover and several landscape features along the streetscape and common green space.

Any new utilities (i.e., gas, electrical) will be buried below ground to reduce the possibility of a localized power outage caused during extreme storm events. Protective plantings throughout and at the edges of the Project Site will mitigate potential wind effects created by open spaces.

Building Design and Operations

The Project Site location was assessed for its vulnerability to sea level rise and/or extreme flooding. It was determined the Project Site does not fall within the projected 100-Year Floodplain.

The following design and planning measures will be explored to mitigate for rising temperature impacts:

- Employing reflective roof materials and/or vegetated roofs;
- Designing the residential units with operable windows, which help mitigate power disruptions by reducing the reliance on mechanical ventilation systems windows by providing fresh air when mechanical systems are down; and
- As part of the energy modeling process, climate files that reflect the predicted increase in temperature may be used to better understand how the buildings and their systems would perform under different climate conditions. (This understanding may then be considered when designing major plant and overall HVAC systems.)

LEED v4 for BD+C: New Construction and Major Renovation
Project Checklist

Project Name: Washington St Plaza
Date: 6.5.18

Y	?	N			
1	0	0	**Integrative Process**		1
1			Credit	Integrative Process	1
10	3	3	**Location and Transportation**		16
		x	Credit	LEED for Neighborhood Development Location	16
1			Credit	Sensitive Land Protection	1
1	1		Credit	High Priority Site	2
4	1		Credit	Surrounding Density and Diverse Uses	5
3		2	Credit	Access to Quality Transit	5
	1		Credit	Bicycle Facilities	1
		1	Credit	Reduced Parking Footprint	1
1			Credit	Green Vehicles	1
5	5	0	**Sustainable Sites**		10
Y			Prereq	Construction Activity Pollution Prevention	Required
1			Credit	Site Assessment	1
	2		Credit	Site Development - Protect or Restore Habitat	2
1			Credit	Open Space	1
	3		Credit	Rainwater Management	3
2			Credit	Heat Island Reduction	2
1			Credit	Light Pollution Reduction	1
6	2	3	**Water Efficiency**		11
Y			Prereq	Outdoor Water Use Reduction	Required
Y			Prereq	Indoor Water Use Reduction	Required
Y			Prereq	Building-Level Water Metering	Required
2			Credit	Outdoor Water Use Reduction	2
3		3	Credit	Indoor Water Use Reduction	6
	2		Credit	Cooling Tower Water Use	2
1			Credit	Water Metering	1
10	12	11	**Energy and Atmosphere**		33
Y			Prereq	Fundamental Commissioning and Verification	Required
Y			Prereq	Minimum Energy Performance	Required
Y			Prereq	Building-Level Energy Metering	Required
Y			Prereq	Fundamental Refrigerant Management	Required
5	1		Credit	Enhanced Commissioning	6
3	6	9	Credit	Optimize Energy Performance	18
	1		Credit	Advanced Energy Metering	1
	2		Credit	Demand Response	2
	1	2	Credit	Renewable Energy Production	3
	1		Credit	Enhanced Refrigerant Management	1
2			Credit	Green Power and Carbon Offsets	2

Y	?	N			
3	5	5	**Materials and Resources**		13
Y			Prereq	Storage and Collection of Recyclables	Required
Y			Prereq	Construction and Demolition Waste Management Planning	Required
	3	2	Credit	Building Life-Cycle Impact Reduction	5
1		1	Credit	Building Product Disclosure & Optimization: Environmental Product Declarations	2
	1	1	Credit	Building Product Disclosure &Optimization: Sourcing of Raw Materials	2
1		1	Credit	Building Product Disclosure & Optimization: Material Ingredients	2
1	1		Credit	Construction and Demolition Waste Management	2
6	7	3	**Indoor Environmental Quality**		16
Y			Prereq	Minimum Indoor Air Quality Performance	Required
Y			Prereq	Environmental Tobacco Smoke Control	Required
1	1		Credit	Enhanced Indoor Air Quality Strategies	2
1	1	1	Credit	Low-Emitting Materials	3
1			Credit	Construction Indoor Air Quality Management Plan	1
1	1		Credit	Indoor Air Quality Assessment	2
	1		Credit	Thermal Comfort	1
1	1		Credit	Interior Lighting	2
	2	1	Credit	Daylight	3
1			Credit	Quality Views	1
		1	Credit	Acoustic Performance	1
2	4	0	**Innovation**		6
1	4		Credit	Innovation	5
1			Credit	LEED Accredited Professional	1
0	3	1	**Regional Priority (credit names have been underlined)**		4
	1		Credit	02135: LTc3, SS4(95th), WEc2(40%), EAc2(20%), EAc5(5%)	1
	1		Credit	02135: LTc3, SS4(95th), WEc2(40%), EAc2(20%), EAc5(5%)	1
	1		Credit	02135: LTc3, SS4(95th), WEc2(40%), EAc2(20%), EAc5(5%)	1
		1	Credit	02135: LTc3, SS4(95th), WEc2(40%), EAc2(20%), EAc5(5%)	1

Y	?	N		Possible Points:
43	41	26	**TOTALS**	110

Certified: 40 to 49 points, **Silver:** 50 to 59 points, **Gold:** 60 to 79 points, **Platinum:** 80 to 110

Prepared by: The Green Engineer

Figure 4.1

Preliminary LEED-New Construction Scorecard

15 Washington Street
Brighton, Massachusetts

5

Transportation

This chapter provides a detailed and comprehensive evaluation of existing and proposed transportation conditions and identifies potential Project impacts and proposed mitigation. This study has been developed to conform with the Boston Transportation Department's (BTD) "Transportation Access Plans Guidelines" and uses standard methodologies, including the Institute of Transportation Engineers' (ITE) Trip Generation Manual (9th Edition) and local travel characteristics as defined in *Access Boston 2000-2010*. The Study analyzes the following as part of this evaluation:

- Vehicle traffic on study area roadways and intersection;
- Parking conditions;
- Loading and service activities;
- Pedestrian and bicycle operations; and
- Public transportation services.

The purposes of these analyses are to:

- Define and quantify existing transportation conditions in the Project study area;
- Estimate the transportation impacts that will be generated under future conditions based on the anticipated program for the Project;
- Develop a set of mitigation strategies and improvement measures which will help to lessen the transportation effects of the Project; and
- Demonstrate that these transportation mitigation efforts will meet or exceed BPDA and BTD requirements and will serve as public benefits.

Overall, the additional new traffic generated by the Project can be accommodated on the surrounding roadway network and, with the Project's robust TDM program, minimal impacts are expected from the Project.

5.1 Summary of Key Findings and Benefits

The following are key findings and benefits related to transportation in conjunction with the Project:

- The Project Site's proximity to public transportation will help to minimize the need for vehicular travel.
- The Project is expected to generate approximately 23 (net-new) entering and 54 (net-new) exiting vehicle trips during the weekday morning peak hour and approximately 50 (net-new) entering and 34 (net-new) exiting vehicle trips during the evening peak hour.

- Traffic generated by the Project will create moderate impacts to the surrounding transportation network. The results of the analysis indicate that there will be only modest incremental increases in delay on some of the intersections within the study area.
- The parking needs for the Project will be accommodated through a shared parking strategy. The proposed parking supply of up to 323 parking spaces in the form of below-grade and structured parking will continue to support the supermarket and bank use, plus additional parking dedicated for the new residential use. In total, 172 net-new parking spaces are proposed (the Project Site currently contains 151 spaces), less than one space per proposed residential unit.
- The Project provides a more pedestrian-friendly environment with sidewalk improvements along Washington Street, Allston Street, and Corey Road. New sidewalks will meet Americans with Disabilities Act and Architectural Access Board (ADA/AAB) standards.
- The Project will provide covered bicycle storage capacity on-site in accordance with the City of Boston Bicycle Guidelines. The Project will also include public, outdoor, bike racks to support ground floor retail spaces and visitors.
- The Project will include the implementation of a proactive Transportation Demand Management ("TDM") Plan with specific measures to promote and encourage residents, employees, and visitors to use sustainable transportation modes.

5.2 Project Description

As described previously in Chapter 1, *Project Description*, the Project involves the redevelopment of a 2.2-acre Project Site currently occupied by a Whole Foods supermarket and a Citizens Bank. The development program for the Project is presented in Table 5-1.

Table 5-1 Proposed Development Program Summary

Use	Approximate Size
Residential	270 units
Grocery	45,753 GFA
Bank	3,593 GFA
Parking	Up to 323 spaces (172 net-new)
Residential Bicycle Parking	270 covered/secure spaces 54 outdoor spaces
Retail Bicycle Parking	16 covered/secure spaces 11 outdoor spaces

The Project will maintain the existing grocery and bank that currently operate on-site, and the existing trips to the Project Site are assumed to remain constant in the future once the space is reconstructed. The proposed site plan is illustrated in Figure 1.5. The Project includes the addition of 172 parking spaces for residents to provide a total of 323 parking spaces. Bike parking will be accommodated on-site and comply with City of Boston's Bicycle Parking Guidelines, 270 long-term spaces will be provided within the parking garage and 54 short-term spaces will be provided throughout the Project Site. For the total retail square footage (grocery and bank), 16 long-term spaces and 11 short-term outdoor spaces will be provided.

5.3 Study Methodology

The following transportation analysis has been performed in conformance with the Boston Transportation Department (BTD) guidelines, including the projection of Project-related trips based on ITE trip rates and the application of local travel characteristics established through the *Access Boston 2000-2010* initiative. *Synchro 9* software was used to facilitate the evaluation of traffic operations based on Highway Capacity Manual[1] (HCM) methodologies.

The transportation analysis considers the following primary analysis scenarios:

- **2017 Existing Conditions** – based on traffic data collection conducted within the study area in April 2016 (adjusted to match 2017 for the traffic operations analysis) and supplemented with counts from November 2017.
- **2022 No-Build Conditions** – Future conditions for a five-year time horizon as expected to occur if the Project was not constructed.
- **2022 Build Conditions** – Future conditions for a five-year time horizon assuming the construction of the Project.

5.3.1 Study Area

Based on a review of the local transportation network and traffic studies prepared for other nearby development projects, a study area was identified for the traffic operations analysis. As shown in Figure 5.1, the following intersections were included in the study area for the traffic analysis:

- Commonwealth Avenue at Washington Street
- Washington Street at Allston Street
- Washington Street at Egremont Road/West Driveway
- Washington Street at East Driveway
- Washington Street at Corey Road
- Washington Street at Bartlett Crescent

1 HCM 2000 - Highway Capacity Manual; Transportation Research Board (Washington, D.C.), 2000.

- Corey Road at Rear Driveway
- Corey Road at Summit Avenue

5.4 Existing Transportation Conditions

Evaluation of the transportation impacts associated with the Project requires a thorough understanding of the existing transportation system in the study area. Therefore, a complete inventory and evaluation of the existing transportation system in the study area was conducted. This analysis is based on the existing network, roadway and intersection geometry, traffic control, existing daily and peak hour traffic volumes, intersection crash data, parking conditions, existing public transportation, and bicycle and pedestrian facilities. This section describes these items in detail.

As discussed previously in Section 1.2 of Chapter 1, *Project Description*, the Project Site currently houses an approximately 20,350 square foot Whole Foods supermarket and a 7,200 square foot Citizens Bank.

Access to the Project Site is currently provided by two driveways connecting to Washington Street and an additional driveway connecting to Corey Road. The existing Project Site Plan is shown on Figure 1.3. The Washington Street driveways provide two-way access to accommodate entering and exiting vehicles. The existing Corey Road driveway provides enter-only access with signage restricting thru traffic. Loading and service vehicles currently access the Project Site off Corey Road, as the loading dock and trash compactor for the Whole Foods are located along the north side of the building.

5.4.1 Roadways

Commonwealth Avenue

Commonwealth Avenue is located west of the Project Site. The four-lane, divided roadway provides two-way travel extending from Route 95 in Weston to Arlington Street in Boston The MBTA Green Line B Branch runs along the median of Commonwealth Avenue. Carriage Road runs parallel to Commonwealth Avenue to both the east and west of the intersection with Washington Street. To the west of Commonwealth Ave, Carriage Road is one-way southbound, south of Washington Street; north of Washington Street, it allows two-way traffic. To the east of Commonwealth Avenue, Carriage Road is one-way northbound. Sharrows and parking are provided on both Carriage Roads. Sidewalks are provided along the west side of the west Carriage Road and the east side of the east Carriage Road; no sidewalks, bicycle accommodations or on-street parking is provided along Commonwealth Avenue. Crosswalks are provided at intersection crossing locations.

Washington Street

Washington Street is adjacent to the south side of the Project Site and is where the Project's main entrance will be located. The two-way roadway provides two lanes extending from Route 9 in Brookline to the south and Cambridge Street to the north. Segments of Washington Street provide either sharrows or dedicated bike lanes. Washington Street provides parking on segments of both sides of the street. Sidewalks are provided on both sides of Washington Street, and crosswalks are provided at the intersection crossing locations.

Corey Road

Corey Road is located adjacent to the east side of the Project Site. The two-way road extends from Kelton Street to the east and from Beacon Street to the west with a single travel lane per direction. The parking along Corey Road is mainly for Allston/Brighton residents, and it is provided along segments of both sides of the street. Sidewalks are provided along both sides of the street, and crosswalks are provided at intersection crossing locations.

Allston Street

Allston Street is located adjacent to the west side of the Project Site. The roadway is a two-way extending from Brighton Avenue to the north and from Washington Street to the south with a single travel lane per direction. Parking is located along the west side of Allston Street. Sidewalks are provided along both sides of the street, and crosswalks are provided at intersection crossing locations.

5.4.2 Intersections

Intersection geometry and physical characteristics are presented below. Traffic operations and LOS analysis are presented later in this chapter.

Commonwealth Avenue at Washington Street

Commonwealth Avenue at Washington Street is a signalized intersection with four approaches located to the west of the Project Site. The Carriage Roads, discussed above, were not included in the analysis of this intersection as their volumes are minor. The MBTA Green Line B Branch tracks run north-south within the Commonwealth Avenue median and through this intersection. The Green Line was excluded from the analysis as the Green Line travels with Commonwealth Avenue northbound and southbound movements and does not conflict with vehicle operation. The four intersection approaches include Commonwealth Avenue northbound and southbound and Washington Street eastbound and westbound. Commonwealth Avenue northbound provides a through lane and a shared through/right-turn lane; left-turns are restricted at this approach. Commonwealth Avenue southbound provides a left-turn lane and two through lanes; right-turns are restricted at this approach. Washington Street westbound provides a general-purpose lane, and the eastbound approach also provides a general-purpose lane.

Parking is prohibited on Washington Street at both approaches due to an MBTA bus stop. The MBTA Green Line Washington Street Station for inbound and outbound travel is located north of the intersection. Sidewalks are provided along all sides of the roadways. Crosswalks are provided at all intersection approaches, and concurrent pedestrian crossing times are provided.

Washington Street at Allston Street

Washington Street at Allston Street is a three-legged unsignalized intersection to the west of the Project Site with free flow on Washington Street and a stop-controlled approach at Allston Street. Washington Street provides one shared travel lane from both the eastbound and westbound approaches. Allston Street southbound provides one shared left/right-turn lane with a stop sign. The Washington Street eastbound approach and the Allston Street westbound approach allow on-street parking. The Allston Street receiving lane provides a single travel lane with on-street parking prohibited. Sidewalks are provided on all sides of the roadways, and a marked crosswalk with wheelchair ramps is provided across the Allston Street approach.

Washington Street at Egremont Road/West Driveway

Washington Street at Egremont Road/West Driveway is an unsignalized intersection that abuts an existing Project Site driveway. Washington Street provides one shared travel lane from both the eastbound and westbound approaches, and both approaches operate at free flow. Egremont Road is a one-way southbound road with one receiving lane and resident permit parking along both sides of the street. The West Driveway provides access and egress to the existing Project Site parking lot. Although no stop sign is provided at the intersection with Washington Street, the West Driveway operates as a stop-controlled approach. The Washington Street eastbound approach does not allow on-street parking while the westbound approach provides two-hour on-street parking Monday through Friday between the hours of 8am-6pm. Sidewalks are provided on all sides of the roadways, and marked crosswalks with wheelchair ramps are provided across the Washington Street westbound approach, Egremont Road, and the Project Site driveway.

Washington Street at East Driveway

Washington Street at East Driveway is a three-legged unsignalized intersection with free flow on Washington Street. Washington Street provides one shared travel lane at both the eastbound and westbound approaches with free flow traffic operations. The East Driveway provides one shared left/right-turn exit lane and one entrance lane for vehicles to access the Project Site parking lot. On-street parking is available along the north side of Washington Street with a two-hour parking limit on Monday through Friday between the hours of 8am-6pm. Parking along the south side of Washington Street is prohibited. A bus stop is located directly across the street from the East Driveway along Washington Street eastbound, and another bus stop is located to the east of the driveway along Washington Street westbound. Sidewalks

are provided along both sides of Washington Street, and only a crosswalk along the driveway approach is provided.

Washington Street at Corey Road

Washington Street at Corey Road is a four-legged signalized intersection at the southeast corner of the Project Site. Washington Street westbound provides one general purpose lane as well as an exclusive bike lane. Washington Street eastbound provides one general purpose lane. Corey Road provides one general purpose lane from both the northbound and southbound approaches without lane markings or centerlines. Parking is prohibited on Washington Street at the westbound approach, and an MBTA bus stop is provided along the eastbound approach. Parking is allowed along both Corey Road approaches. The traffic signal accommodates pedestrians with a pushbutton activated exclusive pedestrian phase. in its three-phase operation. Crosswalks, sidewalks, wheelchair ramps, and pedestrian signals are provided on all approaches.

Washington Street at Bartlett Crescent

Washington Street at Bartlett Crescent is a three-legged unsignalized intersection southeast of the Project Site. Washington Street westbound provides a general-purpose lane as well as an exclusive bike lane. Washington Street eastbound provides one shared through/right-turn lane. Bartlett Crescent provides one shared left/right-turn lane from the northbound approach without lane markings or centerlines. Two-hour parking unless otherwise regulated is provided along all approaches to the intersection. Sidewalks are provided on all approaches and a crosswalk with wheelchair ramps is provided across the Bartlett Crescent approach.

Corey Road at Rear Driveway

Corey Road at Rear Driveway is a three-legged unsignalized intersection and abuts the Project Site to the east. Corey Road provides one shared left-turn/through lane from the northbound approach and one share through/right-turn lane from the southbound approach. Resident permit parking is allowed on the west side of Corey Road. The Rear Driveway is a one-way westbound receiving lane that provides access to the existing Project Site parking lot. Sidewalks are provided on both side of Corey Road, and the sidewalk breaks for the Rear Parking Lot Driveway with wheelchair ramps on both sides of the driveway. No marked crosswalks are provided.

Corey Road at Summit Avenue

Corey Road at Summit Avenue is a four-legged signalized intersection to the north of the Project Site. Each approach provides one general purpose lane without lane markings or centerlines. On-street resident permit parking is allowed along the Summit Avenue eastbound approach and the west side of the Corey Road northbound approach. Two-hour parking is allowed along the west side of the Corey Road southbound approach. The traffic signal accommodates pedestrians by a

pushbutton that calls the concurrent pedestrian phase within its two-phase operation. Crosswalks, sidewalks, wheelchair ramps, and pedestrian signals are provided on approaches.

5.4.3 Existing Site Access and Circulation

The existing Project Site has two driveways along Washington Street and one entrance-only driveway from Corey Road for service/loading vehicles. The driveways allow access to the existing surface parking lot. The surface parking lot serves both the Whole Foods and the bank. Figure 5.2 illustrates the existing site access and circulation.

5.4.4 Traffic Volumes

Traffic volumes for the study area roadways and intersections were collected by VHB in April 2016 and November 2017. Peak-period turning movement and classification (TMC) counts were collected at the study area intersections on a typical weekday from 7:00 to 9:00 AM and 4:00 to 6:00 PM. As mentioned previously, the April 2016 counts were adjusted to be consistent the newer volumes collected in November 2017. The vehicle morning and evening peak hour volumes occurred between 7:45 - 8:45 AM and 5:00 - 6:00 PM and are shown in Figures 5.3a and 5.3b.

In addition, VHB conducted an automatic traffic recorder (ATR) count for a continuous 72-hour period, including a typical weekday and Saturday. This count was conducted on Washington Street northwest of Corey Road during the April 2016 counts. The ATR data shows that typical weekday volumes range from 14,821 to 15,091 vehicles per day, and Saturday volumes decrease to approximately 13,800 vehicles per day. The directional volumes are slightly heavier in the eastbound movement, accounting for approximately 54 percent of the total daily volume.

The TMC and ATR data are provided in Appendix D.

5.4.5 Pedestrians and Bicycles

Pedestrian volumes were recorded during the weekday morning and evening TMCs and are summarized in Figures 5.4a and 5.4b. During the morning peak hour, 104 pedestrians were observed travelling past the Project Site along Washington Street, and 33 pedestrians were observed travelling along Corey Road past the Project Site. During the evening peak hour, 83 pedestrians were observed travelling past the Project Site along Washington Street, and 19 pedestrians were observed travelling past the Project Site along Corey Road.

Bicycle volumes throughout the traffic study area are shown in Figures 5.5a and 5.5b for the weekday morning and evening peak hours, respectively. During the morning peak hour, 20 bicycles were observed travelling past the Project Site on Washington Street, and two bicycles were observed travelling past the Project Site on Corey Road. During the evening peak hour, 19 bicycles were observed travelling past the Project Site on Washington Street, and three bicycles were observed travelling on

Corey Road past the Project Site. The nearest Hubway bike share station is located just under one-half mile from the Project Site on Washington Square at Washington Street/Beacon Street with 15 bicycle docks.

5.4.6 Public Transit

Buses

The study area is currently served by one MBTA bus route within a half-mile radius of the Project Site, as shown in Figure 5.6. Direct access to the Project Site is provided by Route 65 from Brighton Center to Kenmore Station at the Washington St at Corey Road stop.

Green Line

There are three Green Line branches that run within a half-mile radius of the Project Site. The B Branch runs between Park Street and Boston College and stops approximately 400 feet to the west of the Project Site at the intersection of Washington Street and Commonwealth Avenue. The C Branch runs between Cleveland Circle and North Station with the closes stop to the Project Site at Washington Square Station. The D Branch runs between Riverside and Government Center with the closest stop to the Project Site at the Beaconsfield stop.

Peak period frequencies and headways for MBTA bus and Green Line services are summarized in Table 5-2.

Table 5-2 Project Area MBTA Service

Service	Origin / Destination	Peak-Hour Frequency (minutes)
Route 65	Brighton Center – Kenmore Station	7 – 15
B Branch Green Line	Park Street – Boston College	6
C Branch Green Line	Cleveland Circle – North Station	6 – 7
D Branch Green Line	Riverside – Government Center	6

Source: MBTA Spring 2018 Schedule

5.4.7 Parking

The existing site currently provides 151 parking spaces for the employees and customers of the Whole Foods and Citizens Bank. An occupancy turn-over study was conducted in late 2015 to understand the current utilization of this lot during typical weekday evening and Saturday peaks as well as during peak shopping season (Thanksgiving through Christmas). The parking analysis indicated that the peak utilization during a typical weekday was 108 occupied spaces at 6:00 PM before the holiday season and 109 occupied spaces at 3:00 PM during the holiday season.

During a typical weekend day, peak utilization was 129 occupied spaces at 1:30 PM and 117 occupied spaces during the holiday season at 2:00 PM. Therefore, results show that the parking lot never reached maximum capacity, and parking spaces were available.

An existing on-street inventory, which was conducted within a quarter-mile of the study area, indicated most of the on-street parking serves the various commercial and residential uses in the area. The existing on-street parking within the traffic study area is shown in Figure 5.7.

5.4.8 Crash Analysis

A crash analysis was conducted to identify potential vehicle accident trends and/or roadway deficiencies in the traffic study area. The most current vehicle accident data for the traffic study area intersections for the latest five years were obtained from MassDOT's Crash Portal for the years 2011 to 2015. A summary of the study area intersections vehicle accident history is presented in Table 5-3.

Table 5-3 MassDOT Crash Analysis Summary

	Commonwealth Ave at Washington St	Washington St at Allston St	Washington St at West Driveway/ Egremont Rd	Washington St at East Driveway	Washington St at Corey Rd	Washington St at Bartlett Cres	Corey Rd at Rear Driveway	Corey Rd at Summit Ave
Currently Signalized?	Yes	No	No	No	Yes	No	No	Yes
MassHighway ACR[1]	0.71	0.52	0.52	0.71	0.71	0.52	0.52	0.71
MassHighway CCR[2]	0.14	0.14	0.10	0.00	0.06	0.00	0.00	0.06
Exceeds?	No	No	No	No	No	No	No	No
Year								
2011	4	1	0	0	1	0	0	0
2012	1	1	0	0	1	0	0	0
2013	1	1	1	0	0	0	0	0
2014	0	0	1	0	0	0	0	1
2015	0	0	0	0	0	0	0	0
Total	**6**	**3**	**2**	**0**	**2**	**0**	**0**	**1**
Collision Type								
Angle	2	1	0	0	0	0	0	0
Head-on	3	0	0	0	0	0	0	0
Rear-end	0	1	0	0	1	0	0	0
Rear-to-Rear	0	0	0	0	0	0	0	0
Sideswipe, opposite direction	0	0	0	0	0	0	0	0
Sideswipe, same direction	0	0	0	0	0	0	0	0
Single vehicle crash	1	0	2	0	1	0	0	1
Unknown	0	1	0	0	0	0	0	0
Total	**6**	**3**	**2**	**0**	**2**	**0**	**0**	**1**

	Commonwealth Ave at Washington St	Washington St at Allston St	Washington St at West Driveway/ Egremont Rd	Washington St at East Driveway	Washington St at Corey Rd	Washington St at Bartlett Cres	Corey Rd at Rear Driveway	Corey Rd at Summit Ave
Crash Severity								
Fatal injury	0	0	0	0	0	0	0	0
Non-fatal injury	2	1	0	0	0	0	0	0
Property damage only (none injured)	2	1	0	0	1	0	0	1
Unknown	2	1	2	0	1	0	0	0
Total	**6**	**3**	**2**	**0**	**2**	**0**	**0**	**1**
Time of Day								
Weekday, 7:00 AM – 9:00 AM	0	0	0	0	0	0	0	0
Weekday, 4:00 PM – 6:00 PM	0	0	0	0	1	0	0	0
Saturday, 11:00 AM – 2:00 PM	0	0	0	0	0	0	0	0
Weekday, other time	2	3	1	0	1	0	0	1
Weekend, other time	4	0	1	0	0	0	0	0
Total	**6**	**3**	**2**	**0**	**2**	**0**	**0**	**1**
Pavement Conditions								
Dry	3	2	1	0	2	0	0	1
Wet	3	0	1	0	0	0	0	0
Snow	0	0	0	0	0	0	0	0
Ice	0	0	0	0	0	0	0	0
Unknown	0	1	0	0	0	0	0	0
Total	**6**	**3**	**2**	**0**	**2**	**0**	**0**	**1**
Non-Motorist								
Total	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**

1 Average Crash Rate, per million entering vehicles by intersection type (MassDOT crash information queried on November 21, 2017 by MassDOT)

2 Calculated Crash Rate, by intersection type based on average daily traffic, average number of crashes per year, and "K" Factor ("K" Factor is the portion of annual average daily traffic occurring in an hour)

It should be noted that the MassDOT database may not fully account for all crashes reported to the Boston Police Department (BPD) or Boston Emergency Medical Services (EMS).

MassDOT has six districts within Massachusetts, and the study area falls under District 6. The District 6 average crash rate per million entering vehicles, for signalized intersections is 0.71, and the average crash rate for unsignalized intersections is 0.52. Using the data from the MassDOT database only, all of the study area intersections have a calculated crash rate that falls well below the District 6 average values for signalized and unsignalized intersections.

Additionally, the study area intersections were compared to the MassDOT Highway Safety Improvement Plan (HSIP) map of the Commonwealth's top crash locations. None of the intersections within this Project's study area were included in this map indicating that this study area is not considered a top crash location for vehicles, bicycles, or pedestrians.

The crash analysis based on the MassDOT data shows a relatively low number of crashes in the immediate area surrounding the Project Site.

At the nearby intersection of Washington Street and Corey Road, only one of two crashes occurred during the weekday evening peak hour. The remaining study area intersection crashes occurred during off-peak hours. One of the crashes at Washington Street and Corey Road involved a pedestrian, and none of the crashes at the study area intersections resulted in a fatal injury. Two non-fatal injury crashes were reported at Commonwealth Avenue and Washington Street and one at Washington Street and Allston Street.

Crash analysis worksheets are provided in Appendix D.

5.5 Future Conditions

5.5.1 2022 No-Build Condition

The 2022 No-Build Condition was developed to evaluate future transportation conditions in the traffic study area without consideration of the Project. In accordance with BTD Guidelines, this future analysis year represents a five-year horizon from 2017 Existing Conditions. The No-Build Condition provides insight to future traffic conditions caused by regional growth, as well as specific planned projects that are expected to affect the local roadway network.

A regional background growth rate of one-half percent per year was applied to the traffic volumes. This growth rate is consistent with (and in some cases, higher than) growth rates utilized in other recent traffic studies for other developments in this area. Use of the one-half percent growth rate is appropriate in this instance, as it will help to account for traffic generated by multiple other smaller developments in the area.

In addition to the regional background growth, traffic projections for several specific projects were incorporated in the development of the No-Build Condition. These include the following development projects:

1. **5 Washington Street**- A 403,000 square foot project that contains 145 residential units and 12,00 square feet of retail space. Provides 105 vehicle parking spaces and 145 bicycle storage spaces.
2. **159-201 Washington Street (St. Gabriel's)**- The restoration of the Church to be used as an amenity space and the Fatima Shrine as well as 660 residential units totaling 585,439 square feet.
3. **101-105 Washington Street**- A building that is 99,645 square feet including a new Synagogue, new Mikvah facility, and residential building containing 70 residential units. Provides 82 off-street vehicle parking spaces.
4. **375-399 Chestnut Hill Avenue**- A mixed use development containing approximately 234,550 square feet of hotel, medical office, residential, and retail space. Although construction is now complete, the development was still under construction when the traffic counts were completed, so it is included as a background project.
5. **Brighton Marine Health Center & Veterans Mixed Income Housing Project*** – Approximately 101 mixed-income residential units to replace the existing five medical use buildings at the corner of Commonwealth Avenue and Warren Street. Provides 101 vehicle parking spaces.
6. **40 Mount Hood Road* -** An approximately 1.7-acre site including 178 residential units and a mix of rental and condominium units. This development will replace the existing 74-room hotel at the corner of Mount Hood road and Egremont Road. Provides 142 vehicle parking spaces.
7. **1650 Commonwealth Avenue Development*** – A five-story building containing 40 residential condominium units and 2,400 square feet of ground floor retail space with a lobby, management office, and fitness center for residents. Provides 40 vehicle parking spaces.
8. **139-149 Washington Street* -** Two new residential buildings with approximately 180 rental units and 30 for-sale units. Provides 220 vehicle parking spaces.
9. **132 Chestnut Hill Avenue* -** Consists of 61 residential units along with on-site support and amenities for Jewish Community Housing for the Elderly (JCHE) residents. Neighborhood oriented retail/commercial space along Chestnut Hill Avenue will also be constructed. Provides 21 vehicle parking spaces.
10. **Boston College Field House and Recreation Center* -** No new vehicle trips are expected from these two projects on the Boston College campus.

**Project is covered in the one-half percent background traffic growth rate due to the small number of vehicle trips that will be generated from the project.*

The 2022 No-Build Condition peak-hour traffic volumes were developed by growing the 2017 Existing Condition volumes to include general background traffic growth, as previously described, and adding traffic volumes associated with known traffic forecasts projected for other development projects in the area.

Figures 5.8a and 5.8b present the 2022 No-Build Condition traffic volumes for the weekday morning and evening peak hours, respectively.

Future Roadway Improvements

Future improvement planned for study area roadways and intersections were also reviewed. The only 2022 No-Build project with impacts to the immediate area is the 5 Washington Street project.

The 5 Washington Street project proposes bicycle lane installation along Washington Street westbound between Brookline Town Line and Commonwealth Avenue. Additionally, the project intends to install sharrows on Washington Street eastbound. A double-yellow centerline will be installed along Corey Road between Washington Street and Westbourne Terrace. All abutting sidewalks and pedestrian ramps will be brought to City standards through widening, the installation of new accessible ramps, and providing bicycle storage racks surrounding the project.

While all anticipated infrastructure changes will improve the area, none of the changes will affect the roadway geometry for the 2022 No-Build and Build Conditions analysis.

Future Bicycle Improvements

The *Go Boston 2030 Vision and Action Plan* dated March 2017 was referenced to assess future bicycle improvements in the study area. The plans show the existing bicycle accommodations along Commonwealth Avenue, but there are no indications of planned bicycle improvements within the next 15 years.

5.5.2 2022 Build Condition

Project-Generated Trips

To assess the traffic impacts of the Project, trip generation estimates were developed based on standard data from the Institute of Transportation Engineers (ITE) Trip Generation[2]. Trip generation for the proposed mixed-use development was estimated based on ITE Land Use Codes (LUC) for the primary Project Site components. The rate at which any development generates traffic is dependent upon several factors such as size, location and concentration of surrounding development.

For the Project, the newly constructed bank was assumed to attract the same number of vehicle trips as determined to occur under current, existing conditions.

2 Trip Generation; Ninth Edition; Institute of Transportation Engineers; Washington, D.C.; 2012.

This is a conservative approach, as the proposed bank's total gross floor area will be reduced from its current size. Accordingly, trip generation for the residential use and net-new grocery square footage are the only new aspects of the Project creating an incremental impact to the surrounding transportation infrastructure. The effect of shared trips, transit amenities, pedestrian/bicycle travel, pass-by trips and other factors are also noted and incorporated into the overall analysis where appropriate. The land use codes for the trip generation are shown in Table 5-4.

Table 5-4 Trip Generation Land Use Code

Land Use	ITE Land Use Code (LUC)	Independent Variable	Existing Size	Proposed Size	Net-New Space
Residential	220	units	0	270	270
Grocery	850	ksf	20.35	36.73	16.38

- **Residential** – ITE LUC 220 "Apartment." ITE provides data for alternate residential land use codes (such as "Mid-Rise Apartment" and "High-Rise Apartment") that closely match the definition of the apartments proposed. However, this study was conducted using ITE data for standard apartments. This approach was taken due to both the greater number of data points in the "apartment" database, along with the resulting higher overall trip generation. Therefore, by using the higher-generating apartment use, the analysis results presented in this assessment are somewhat conservative.
- **Grocery** – ITE LUC 850 "Supermarket." ITE provides data for free-standing supermarkets selling a complete assortment of food, food preparation, household cleaning items, etc. It should be noted that the daily trip generation estimates are based on only four submitted studies.

The proposed Site will provide parking spaces for the grocery, bank, and residential uses. While the size of the bank component will be reduced in square footage, it was assumed that the number of trips generated by this use will remain the same as in the existing conditions, and no trip credit was taken. Although it could be assumed that the new grocery store will serve the same customer base, a conservative approach was taken for the analysis. The net-new grocery square footage space has been analyzed to represent new customers who may be attracted to the larger space. We have included the square footage of the sales floor of the grocery store in supporting this trip generation estimate. Other spaces, including lobby, café and loading dock were excluded from the trip generation calculation.

Vehicles that currently enter via the rear driveway from Corey Road were re-routed to enter the proposed grocery entrance on Allston Street with some vehicles accessing the garage on Washington Street. Additionally, vehicles that currently enter and exit the Project Site at the West Driveway across from Egremont Road were re-routed to the proposed entrances under the 2022 Build Condition. The net-new grocery and the new residential component of the Project were analyzed specifically as Project-generated vehicles.

Shared Trips

Because the proposed redevelopment is a mix of grocery, banking and residential land uses, the trip generation characteristics of the site will be different from a single-use project. Some of the trips generated by the Project will be contained on-site as "internal" trips. For example, the grocery and bank portions of the redevelopment will provide goods and services that are attractive to the residents, which will reduce the need for them to travel off-site.

To account for shared trips between the proposed uses, the shared trip methodology outlined in the National Cooperative Highway Research Program (NCHRP) Report 684 (Enhancing Internal Trip Capture Estimation for Mixed-Use Developments) was used. Internal capture trips were proportioned for each land use to develop net-new unadjusted ITE trips generated by the Project. The corresponding unadjusted trip generation with shared trips is shown in Table 5-5.

Table 5-5 Unadjusted Vehicle Trip Generation Summary (Net-New)[1]

	Gross Grocery/Bank Trips	Gross Residential Trips	Shared Trips[2]	Unadjusted ITE Vehicle Trips
Daily				
Enter	838	898	434	1,302
Exit	838	898	434	1,302
Total	1,676	1,796	868	2,604
Morning				
Enter	35	28	2	60
Exit	21	110	2	129
Total	56	138	4	189
Evening				
Enter	79	109	51	137
Exit	76	59	51	84
Total	155	168	102	221

[1] Net-new trip generation is based on the addition of 270 residential units and 16.38 ksf of grocery
[2] Shared trip rates based on NCHRP Report 684, 25-percent rate assumed for all time periods

Mode Share

To account for sustainable modes of transportation, mode shares were applied to the net-new unadjusted ITE trip generation results. The mode shares are based on BTD Guidelines for Area 10. The BTD Area 10 covers the entire Brighton area, and the mode shares for residential and grocery land use for this neighborhood are presented in Table 5-6.

Table 5-6 Mode Shares for Residential and Grocery Land Use

	Daily	AM Peak Hour		PM Peak Hour	
	In/Out	In	Out	In	Out
Residential					
Vehicle	59%	51%	50%	50%	51%
Transit	19%	18%	31%	31%	18%
Walk/Bike/Other	22%	31%	19%	19%	31%
Grocery					
Vehicle	63%	63%	52%	52%	63%
Transit	14%	9%	28%	28%	9%
Walk/Bike/Other	23%	28%	20%	20%	28%

Source: BTD Area 10

Adjusted Project Trips

Using the data from the 2009 National Household Travel Survey (NHTS), vehicle occupancy rates (VORs) were applied to the Project-generated residential trips. The residential trips were classified as "To or From Work" and assigned a VOR of 1.13 people per vehicle. The grocery trips were classified as "Other Family/Personal Errands" and assigned a VOR of 1.84 people per vehicle.

Once the mode shares and VORs were applied to the unadjusted vehicle trips, the Project-generated vehicle, transit, and bike/walk/other trips were calculated. These estimates are summarized in Table 5-7.

Table 5-7 Adjusted Trip Generation Summary

	Vehicle			Transit			Walk/Bike/Other		
	In	Out	Total	In	Out	Total	In	Out	Total
Daily	1,058	1,058	2,116	409	409	818	593	593	1,186
AM Peak Hour	23	54	77	8	39	47	18	25	43
PM Peak Hour	50	34	84	40	12	52	27	25	52

Pass-by Trips

Not all the trips generated by the Project will be new traffic that is added to the study area intersections and roadways. Grocery uses typically attract a percentage of their traffic from the existing traffic streams passing the Site, particularly during peak periods. These trips, which are considered pass-by trips, are already on the roadway system traveling to and from locations other than the Site (such as home, work, or other shopping destinations).

Pass-by trips are attracted to the Site as they pass through the area. The rate at which pass-by trips are attracted to a Site is highly dependent on the type of land

use at that Site, the proximity of the Site to major traffic corridors, and the location and type of nearby land uses. ITE data shows pass-by rates for supermarkets to range from 25-36% depending on the day of the week and peak hour. Based on the MassDOT TIA Guidelines, pass-by trips should not account for more than 15-percent of the adjacent street traffic. Using the adjusted vehicle trips, shown in Table 5-7, a pass-by rate of 25 percent was utilized for this analysis. The resulting new Project-generated vehicle trips added to the surrounding area network are shown in Table 5-8 for daily, morning peak hour, and evening peak hour. The Project will generate 73 new vehicle trips during the morning peak hour (21 entering, 52 exiting) and 76 new vehicle trips during the evening peak hour (46 entering, 30 exiting).

Table 5-8 New Project-Generated Vehicle Trip Summary

	Adjusted Grocery Vehicle Trips	Adjusted Residential Vehicle Trips	Grocery Pass-by Vehicle Trips	New Project-Generated Vehicle Trips
Daily				
Enter	215	352	54	513
Exit	215	352	54	513
Total	430	704	108	1,026
Morning				
Enter	11	12	2	21
Exit	6	48	2	52
Total	17	60	4	73
Evening				
Enter	18	32	4	46
Exit	14	20	4	30
Total	32	52	8	76

Traffic Distribution

While the mode-share splits are largely dependent on existing land uses within a given BTD neighborhood, the arrival/departure patterns are derived and determined more so by the context of the existing roadway infrastructure. Accordingly, trip distribution was based on BTD's guidelines for Area 10 (where the Project Site is located). These guidelines, based on 2000 Census data, provide information on where area residents work and where area employees live. Using these data, vehicle trips can then be assigned to the roadway network. A summary of the primary roadways of origin of vehicles traveling to and from the Project is summarized in Table 5-9 and shown in Figure 5.9.

Table 5-9 Geographic Trip Distribution

Corridor	Trip Distribution
Commonwealth Avenue (to/from north)	15%
Commonwealth Avenue (to/from south)	15%
Washington Street (to/from west)	20%
Washington Street (to/from east)	15%
Corey Road (to/from south)	20%
Summit Avenue (from northeast)	10%
Allston Street (to/from north)	5%
Total	**100%**

The existing diverted trips are shown in Figures 5.10a and 5.10b, and the net-new Project-generated vehicle trips assigned to study area intersections are shown in Figures 5.11a and 5.11b. These volumes were distributed through the traffic network using the distribution patterns summarized in Table 5-9. The net-new Project-generated vehicle trips were added to the No-Build volumes, which include the existing Whole Foods and Citizens Bank generated trips, to create the 2022 Build Condition network. The resulting 2022 Build Condition networks are shown in Figures 5.12a and 5.12b for the weekday morning and evening peak hours, respectively.

A comprehensive operational and capacity analysis of the study area intersections is presented later in this chapter.

Proposed Site Access and Circulation

The Project will have a single driveway along Washington Street, a driveway on Allston Street, and maintain the rear driveway on Corey Road. The rear driveway, however, will operate as an exit-only lane and will be used, primarily, to support egress by loading/service vehicles, as well as some residents and patrons. The Washington Street driveway will accommodate both entering and exiting vehicles, but the exiting vehicles, however, will be subject to right-turn only restrictions due to the proximity of the traffic signal at Washington Street and Corey Road and through discussions with BTD. This improved site access and egress will not be limited to only automobile traffic, but it will also provide significant improvements to bicycle and pedestrian accommodations. Under existing conditions, pedestrians and bicyclists conflict with two site driveways along Washington Street, but under the 2022 Build Condition, there will be one clear access/egress point to and from the parking garage. The Allston Street driveway will primarily serve the customers driving to the Whole Foods allocated parking, but the residential and grocery parking within the garage are accessible via Allston Street or Washington Street. The proposed site access/egress and circulation is shown in Figures 5.13a and 5.13b.

Parking

The Project has been designed so that its parking needs can fully be accommodated within the Project Site without affecting the availability of existing on-street parking in the surrounding area.

The parking needs for the Project will be accommodated by approximately 323 spaces (172 net-new). With the proposed mixed-used development of grocery, bank, and residential uses, a shared parking strategy will be utilized. Peak residential parking will occur overnight when retail parking demand is very low, and vise-versa during the daytime.

As described in Section 5.4.6, a parking utilization study was conducted in 2015 and indicated that the existing land uses, Whole Foods and Citizens Bank have a typical weekday peak parking demand of approximately 110 spaces, inclusive of employee parking. This can be readily accommodated within the new 323 space garage and still provide up to 213 spaces for residential parking. The daytime residential parking demand is not expected to utilize the 199 spaces, thus providing some supplemental parking for grocery and bank uses. Table 5-10 shows the proposed parking ratios and number of parking spaces allocated for the different land uses.

Table 5-10 Parking Allocation

Land Use	Parking Ratio	Number of Spaces
Grocery/Bank	3.21 per ksf	151
Residential	0.64 per unit	172
TOTAL		**323 spaces**

Pedestrian Access

The Project Site will have multiple access points for the various uses. The Project Site's main access for the grocery component will be located on Allston Street with the bank access on Washington Street. The residential component will have three access points—one on Allston Street, one next to the bank on Washington Street, and one at the corner of Washington Street and Corey Road. Each of these access points opens up to a residential lobby space. A pedestrian walkway is proposed along the back side of the building to provide a pedestrian connection between Allston Street and Corey Road. The Proposed public accessible walkways along all streets will have complete pedestrian accessibility to and from the Project Site. Refer to Section 3.5.1 of Chapter 3, *Urban Design* for more information on accessibility.

Bicycle Accommodations

The potential bicycle parking needs for the Project were evaluated based on BTD guidelines, as presented in its "Off-Street Bicycle Parking Guidelines"[3]. The resulting

3 Off-Street Bicycle Parking Guidelines, Boston Transportation Department, Boston, MA (2010).

bicycle parking accommodations have been designed to meet these standards. For the residential component, according to the guidelines for the proposed 270 units, 270 covered/secure spaces and 54 outdoor spaces will be provided. For the retail component (grocery and bank), the total square footage calls for 16 covered/secure spaces and 11 outdoor spaces. These spaces are shown in the Proposed Conditions Site Plan in Figure 1.5.

Service and Loading

The Project Site has been designed so that the truck deliveries can be made entering via the new Washington Street entrance/exit and exiting via the rear driveway onto Corey Road. As with the current conditions for the grocery store, the new store will receive a variety of truck deliveries throughout the week. The exact number and timing of deliveries will vary depending on the volume and seasonal demand. The deliveries are expected to occur in the early morning and late evening hours. There will also be various deliveries made to the Project Site using smaller, single-unit trucks. These are the same types of vehicles which are typically seen throughout the Allston-Brighton area making deliveries to other retail businesses and residences. Smaller single-unit trucks can easily be accommodated and are typically on-Site for only a short time. The Whole Foods grocery store delivery trucks are expected to follow the same delivery route under existing conditions to travel to and from the Project Site.

Deliveries to the other proposed uses are expected to follow the same general route to and from the Project Site. Due to the nature of the small retail and residential uses, deliveries to these buildings should be less frequent and should involve smaller trucks rather than the large tractor trailers.

5.6 Traffic Operations Analysis

Measuring existing traffic volumes and projecting future traffic volumes quantifies traffic flow within the study area. To assess quality of flow, roadway capacity analyses were conducted with respect to Existing and projected No-Build and Build traffic volumes for both the roadway peak hours and the Project peak hours. Capacity analyses provide an indication of how well the roadway facilities serve the traffic demands placed upon them. Roadway operating conditions are classified by calculated levels of service.

5.6.1 Level-of-Service Criteria

The evaluation criteria used to analyze area intersections in this traffic study are based on the 2000 Highway Capacity Manual (HCM)[4]. The term "Level-of-Service", or LOS, is used to denote the different operating conditions that occur on a given roadway segment under various traffic volume loads. It is a qualitative measure that

4 HCM 2000 - Highway Capacity Manual; Transportation Research Board (Washington, D.C.), 2000.

considers several factors including roadway geometry, speed, travel delay and freedom to maneuver. LOS provides an index to the operational qualities of a roadway segment or an intersection. LOS designations range from A to F, with LOS A representing the best operating conditions and LOS F representing the worst operating conditions.

The LOS designations, which are based on delay, are reported differently for signalized and unsignalized intersections. For signalized intersections, the analysis considers the operation of all traffic entering the intersection and the LOS designation is for overall conditions at the intersection. For unsignalized intersections, however, the analysis assumes that traffic on the mainline is not affected by traffic on the side streets. Thus, the LOS designation is for the critical movement exiting the side street, which is generally the left turn out of the side street or Project Site driveway. Table 5-11 shows the LOS criteria for both signalized intersections and unsignalized intersections.

Table 5-11 Level-of-Service Criteria

Level of Service	Signalized Intersection	Unsignalized Intersection
A	0 to 10 seconds	0 to 10 seconds
B	10 to 20 seconds	10 to 15 seconds
C	20 to 35 seconds	15 to 25 seconds
D	35 to 55 seconds	25 to 35 seconds
E	55 to 80 seconds	35 to 50 seconds
F	Greater than 80 seconds	Greater than 50 seconds

Source: 2000 Highway Capacity Manual

In general traffic engineering practices, conditions of LOS D or better are generally considered acceptable for signalized intersections. However, in balancing the needs of vehicular traffic with those of pedestrians, bicycles and transit infrastructure this can be difficult to achieve in all instances in an urban setting. The analytical methodologies typically used for the analysis of unsignalized intersections use conservative analysis parameters, such as long critical gaps. Actual field observations indicate that drivers on minor streets generally accept shorter gaps in traffic than those used in the analysis procedures and therefore experience less delay than reported by the analysis software. The analysis methodologies also do not fully consider the beneficial grouping effects caused by nearby signalized intersections. The net effect of these analysis procedures is the over-estimation of calculated delays at unsignalized intersections in the study area. Cautious judgment should therefore be exercised when interpreting the capacity analysis results at unsignalized intersections.

While the analytical deficiencies discussed above should be recognized, for this analysis the Synchro model was calibrated to model existing observed conditions. Critical gaps were adjusted at some study area intersections to reflect observed

queueing in the field and the Washington Street eastbound approach was coded with a 25-foot, left-turn only lane and a through/right-turn lane to accurately model vehicles that pass the waiting left-turning vehicles in the middle of the intersection.

5.6.2 Study Intersections Capacity Analysis

The LOS analysis was conducted for the 2017 Existing, 2022 No-Build, and 2022 Build Conditions for the study-area intersections during the weekday morning and weekday evening peak hours. Detailed results including delay by movement, queuing and volume-to-capacity ratio are presented below in Tables 5-12 and 5-13 below.

The Synchro reports for all scenarios are provided in Appendix D.

Table 5-12 Intersection Level of Service Summary AM Peak Hour

	2017 Existing Condition				2022 No-Build Condition				2022 Build Condition			
Intersection/Approach	**LOS**	**Delay (sec.)**	**V/C Ratio**	**95th % Queue (feet)**	**LOS**	**Delay (sec.)**	**V/C Ratio**	**95th % Queue (feet)**	**LOS**	**Delay (sec.)**	**V/C Ratio**	**95th % Queue (feet)**
Signalized												
Commonwealth Ave/ Washington St	**D**	**51.5**	**1.00**	**-**	**F**	**82.1**	**1.21**	**-**	**F**	**100.1**	**1.31**	**-**
Washington St EB L	C	24.9	0.26	67	C	25.8	0.33	82	C	25.6	0.31	81
Washington St EB T/R	C	32.0	0.66	358	D	37.9	0.78	438	D	38.3	0.79	446
Washington St WB L/T/R	F	84.0	1.01	#558	F	226.0	1.38	#701	F	307.0	1.57	#770
Commonwealth Ave NB T/R	D	51.4	0.91	#479	E	59.1	0.95	#513	E	59.8	0.96	#516
Commonwealth Ave SB L	E	75.8	0.81	#199	E	78.8	0.84	#214	F	84.6	0.87	#223
Commonwealth Ave SB T	C	32.1	0.39	168	C	32.4	0.42	180	C	32.4	0.42	180
Washington St/Corey Rd	**D**	**43.0**	**0.81**	**-**	**E**	**62.5**	**0.91**	**-**	**F**	**84.2**	**0.96**	**-**
Washington St EB L/T/R	C	34.7	0.88	#633	E	55.1	0.99	#733	D	46.2	0.95	#688
Washington St WB L/T/R	C	23.0	0.70	434	C	24.4	0.74	469	C	24.6	0.74	474
Corey Rd NB L/T/R	F	96.2	1.04	#410	F	131.9	1.14	#440	F	233.2	1.39	#477
Corey Rd SB L/T/R	D	43.4	0.79	#245	F	80.3	0.99	#324	F	116.3	1.11	#394
Corey Rd/Summit Ave	**C**	**20.7**	**0.57**	**-**	**C**	**23.5**	**0.60**	**-**	**C**	**26.8**	**0.62**	**-**
Summit Ave EB L/T/R	A	9.9	0.23	52	A	10.0	0.24	53	A	10.0	0.24	53
Summit Ave WB L/T/R	B	10.1	0.25	44	B	10.2	0.26	46	B	10.2	0.27	46
Corey Rd NB L/T/R	C	30.7	0.90	#269	D	36.0	0.93	#284	D	42.0	0.97	#299
Corey Rd SB L/T/R	B	11.1	0.37	58	B	11.3	0.38	60	B	11.3	0.38	60

	2017 Existing Condition				2022 No-Build Condition				2022 Build Condition			
Intersection/Approach	**LOS**	**Delay (sec.)**	**V/C Ratio**	**95th % Queue (feet)**	**LOS**	**Delay (sec.)**	**V/C Ratio**	**95th % Queue (feet)**	**LOS**	**Delay (sec.)**	**V/C Ratio**	**95th % Queue (feet)**
Unsignalized												
Washington St/Allston St												
Allston St SB L/R	C	20.6	0.34	37	C	22.9	0.38	43	D	28.0	0.54	75
Washington St/ Egremont Rd/West Driveway												
West Driveway SB L/T/R	C	20.0	0.14	12	C	23.0	0.16	14	-	-	-	-
Washington St/East Driveway (Site Driveway)												
East (Site) Driveway SB L/R	C	15.1	0.14	12	C	15.1	0.14	12	-	-	-	-
East (Site) Driveway SB R	-	-	-	-	-	-	-	-	B	12.2	0.22	21
Washington St/ Bartlett Crescent												
Bartlett Crescent SB L/R	C	22.3	0.10	9	D	25.9	0.12	10	C	24.5	0.11	10
Corey Road/Rear Driveway												
Rear Driveway EB L/T/R	-	-	-	-	-	-	-	-	B	12.5	0.31	33
Allston St/Site Driveway												
Site Driveway WB L/R	-	-	-	-	-	-	-	-	A	9.0	0.04	3

Table 5-13 Intersection Level of Service Summary PM Peak Hour

	Existing Condition (2017)				No-Build Condition				2022 Build Condition			
Intersection/Approach	**LOS**	**Delay (sec.)**	**V/C Ratio**	**95th % Queue (feet)**	**LOS**	**Delay (sec.)**	**V/C Ratio**	**95th % Queue (feet)**	**LOS**	**Delay (sec.)**	**V/C Ratio**	**95th % Queue (feet)**
Signalized												
Commonwealth Ave/ Washington St	**D**	**53.1**	**0.97**	**-**	**F**	**92.7**	**1.24**	**-**	**F**	**109.6**	**1.33**	**-**
Washington St EB L	C	26.5	0.16	52	C	27.6	0.20	61	C	24.4	0.21	61
Washington St EB T/R	C	36.6	0.68	420	D	42.4	0.78	#529	D	39.3	0.80	#545
Washington St WB L/T/R	F	91.4	1.04	#573	F	281.2	1.53	#762	F	371.9	1.71	#804
Commonwealth Ave NB T/R	D	38.5	0.61	238	D	39.4	0.66	264	D	38.0	0.67	268
Commonwealth Ave SB L	F	130.3	1.05	#261	F	148.0	1.11	#282	F	169.1	1.16	#298
Commonwealth Ave SB T	D	40.4	0.74	306	D	42.5	0.79	330	D	39.7	0.79	330
Washington St/Corey Rd	**D**	**39.8**	**0.80**	**-**	**E**	**78.5**	**0.96**	**-**	**F**	**124.4**	**1.04**	**-**
Washington St EB L/T/R	D	36.6	0.87	#659	F	78.0	1.06	#802	E	60.7	1.01	#707
Washington St WB L/T/R	C	23.3	0.64	379	C	25.7	0.71	437	C	24.4	0.73	445
Corey Rd NB L/T/R	E	71.2	0.92	#332	F	110.6	1.08	#380	F	299.5	1.54	#441
Corey Rd SB L/T/R	D	54.3	0.83	#369	F	106.7	1.08	#484	F	219.3	1.37	#633
Corey Rd/Summit Ave	**B**	**13.5**	**0.48**	**-**	**B**	**14.2**	**0.50**	**-**	**B**	**14.8**	**0.52**	**-**
Summit Ave EB L/T/R	B	10.6	0.26	60	B	10.7	0.27	61	B	10.2	0.27	61
Summit Ave WB L/T/R	B	10.6	0.26	61	B	10.7	0.27	63	B	10.4	0.28	64
Corey Rd NB L/T/R	B	19.1	0.69	#181	B	21.0	0.73	#218	C	20.2	0.76	#231
Corey Rd SB L/T/R	B	11.5	0.36	90	B	11.7	0.38	96	B	11.3	0.38	96

	Existing Condition (2017)				No-Build Condition				2022 Build Condition			
Intersection/Approach	**LOS**	**Delay (sec.)**	**V/C Ratio**	**95th % Queue (feet)**	**LOS**	**Delay (sec.)**	**V/C Ratio**	**95th % Queue (feet)**	**LOS**	**Delay (sec.)**	**V/C Ratio**	**95th % Queue (feet)**
Unsignalized												
Washington St/Allston St												
Allston St SB L/R	E	48.9	0.70	117	F	89.3	0.90	174	F	181.5	1.20	294
Washington St/ Egremont Road/West Driveway												
West Driveway SB L/T/R	D	29.0	0.37	40	E	42.5	0.49	59	-	-	-	-
Washington St/East Driveway (Site Driveway)												
East (Site) Driveway SB L/R	C	19.1	0.28	28	C	20.5	0.31	32	-	-	-	-
East (Site) Driveway SB R	-	-	-	-	-	-	-	-	B	11.8	0.09	8
Washington St/ Bartlett Crescent												
Bartlett Crescent SB L/R	D	29.6	0.06	5	E	37.0	0.08	7	D	30.7	0.07	5
Corey Road/Rear Driveway												
Rear Driveway EB L/T/R	-	-	-	-	-	-	-	-	F	67.6	0.94	248
Allston St/Site Driveway												
Site Driveway WB L/R	-	-	-	-	-	-	-	-	A	9.1	0.06	5

As indicated above in Table 5-12, most of the study area intersections will operate at the same LOS between the 2017 Existing and 2022 No-Build Conditions. There are four locations where the LOS is expected to decline due to traffic growth from other projects. These four intersection locations are:

1. **Commonwealth Ave at Washington Street** – From the 2017 Existing Conditions to the 2022 No-Build Condition, this intersection will see its LOS decline from LOS D to LOS F during the morning and evening peak hours.
2. **Washington Street at Allston Street** – From the 2017 Existing Conditions to the 2022 No-Build Condition, this intersection will see its LOS decline from LOS C to LOS D in the morning peak hour and decline from LOS E to LOS F during the evening peak hour.
3. **Washington Street at Corey Road** – From the 2017 Existing Conditions to the 2022 No-Build Condition, this intersection will see its LOS decline from LOS D to LOS E in the morning and evening peak hour.
4. **Washington Street at Bartlett Crescent** – From the 2017 Existing Conditions to the 2022 No-Build Condition, this intersection will see its LOS decline from LOS C to LOS D in the morning peak hour and from LOS D to LOS E in the evening peak hour.

As indicated above in Tables 5-12 and 5-13, most of the study area intersections will operate at the same LOS between the 2022 No-Build and 2022 Build Conditions. There are three locations where the LOS is expected to decline due to Project trips. These two intersection locations are:

1. **Washington Street at Allston Street** – From the 2022 No-Build Conditions to the 2022 Build Conditions, during the morning peak hour, this intersection will see its LOS decline LOS C to LOS D. During the evening peak hour, the intersection maintains LOS F from 2022 No-Build Conditions to the 2022 Build Conditions.
2. **Washington Street at Corey Road** – From the 2022 No-Build Conditions to the 2022 Build Conditions, this intersection will see its LOS decline from LOS E to LOS F in the morning and evening peak hours.

5.7 Proposed Transportation Mitigation

While the surrounding traffic network can accommodate the Project without substantial impacts, it may be possible to implement transportation mitigation measures at the impacted intersections to reduce delay. The intersection of Washington Street at Corey Road currently provides an exclusive pedestrian phase. As noted during field observations, pedestrians are not willing to wait for the exclusive pedestrian phase and will walk concurrently with vehicle traffic. Because of this, it may be helpful to change the intersection timing to eliminate the exclusive pedestrian phase and create concurrent phases along Washington Street and Corey Road. This may also improve vehicle and bike delays at the intersection as the exclusive pedestrian phase time would be reallocated to the Washington Street and

Corey Road movements. The Proponent will work with the City to understand this potential intersection improvement and other possible appropriate mitigation with the study area.

5.8 Transportation Demand Management

The Project Proponent will support a program of transportation demand management (TDM) actions to reduce automobile trips generate by the Project. The goal of the Project's TDM plan is to reduce the use of single occupancy vehicles (SOVs) by encouraging carpooling/vanpooling, bicycle commuting and walking, and increased use of the area's public transportation system by residents and retail employees and customers.

The following TDM programs will be implemented as part of the Project to encourage the use of sustainable modes of transportation:

- The Proponent will contact a car sharing provider (such as Zipcar) to determine the feasibility of establishing a car sharing program for tenants and will provide parking space on-site for a least on car sharing vehicle, subject to demand.
- The Proponent will join a local Transportation Management Association (TMA) if one is established in the area.
- The Proponent will designate a transportation coordinator to oversee all transportation matters for the Project, including vehicular operations, servicing and loading, parking and the TDM programs. The transportation coordinator will act as the contact and liaison between the tenants of the Project and the City of Boston and the TMA.
- The Proponent will provide a transit screen within the lobby of the residential building to provide real-time commuting information to residents.
- The Proponent will provide preferred parking for low-emitting fuel-efficient vehicles and electric vehicle charging stations within the proposed garage.
- The Project will provide ample bicycle parking within the Project Site. A total of 254 long-term spaces within the parking garage and 58 short-term spaces will be provided throughout the Project Site.
- Walking to and from, and throughout the Project Site will be encouraged by the provision of a pedestrian-friendly site layout, which features sidewalks and crosswalks at key points both within the Project Site and connecting to adjacent developments.

Source: MassGIS 2013-2014 USGS Aerial

Figure 5.1

Study Area Intersections

15 Washington Street
Brighton, Massachusetts

Source: MassGIS 2013-2014 USGS Aerial

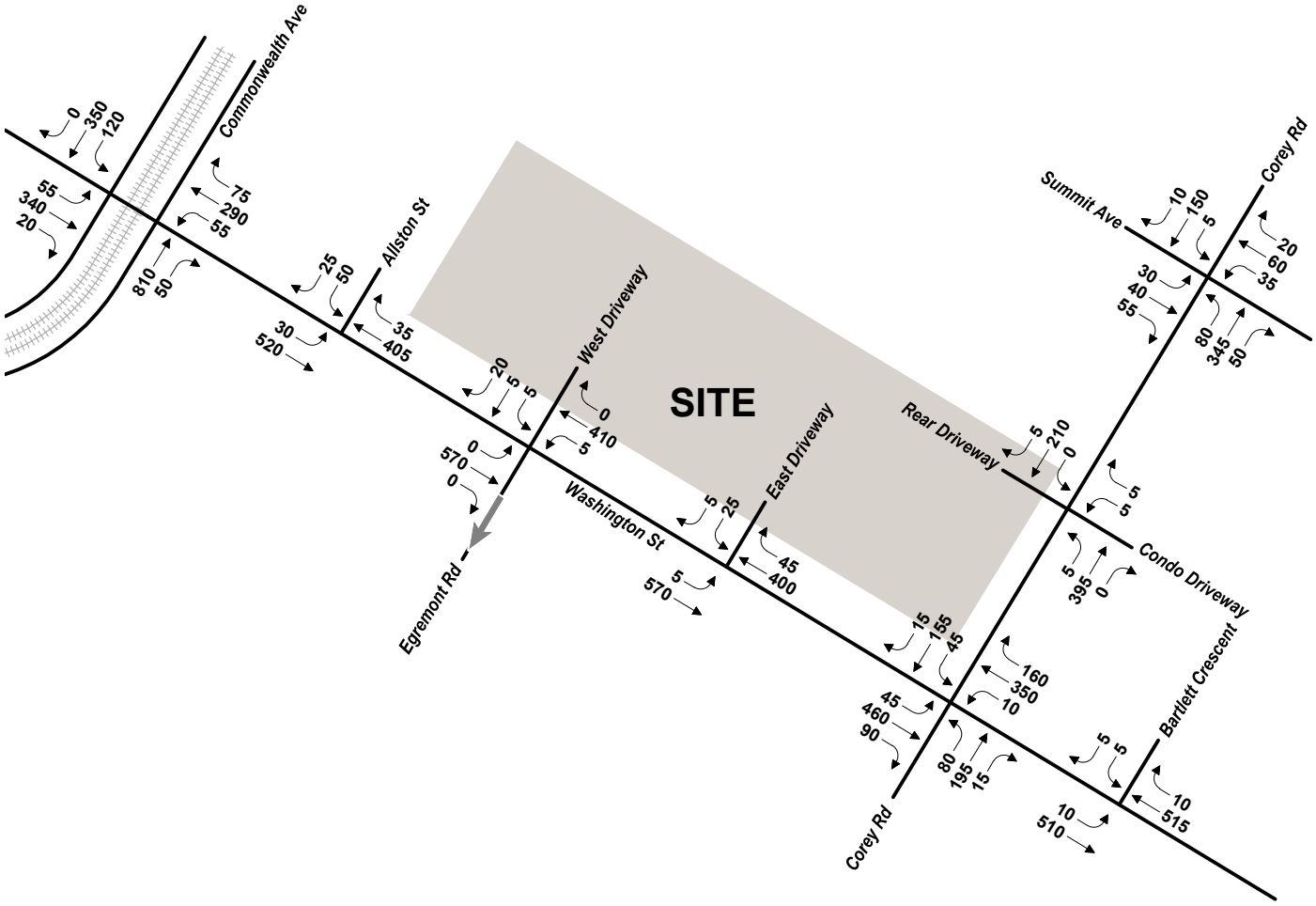
Pedestrian Access

Vehicle Access

Figure 5.2

Existing Access and Circulation

15 Washington Street
Brighton, Massachusetts



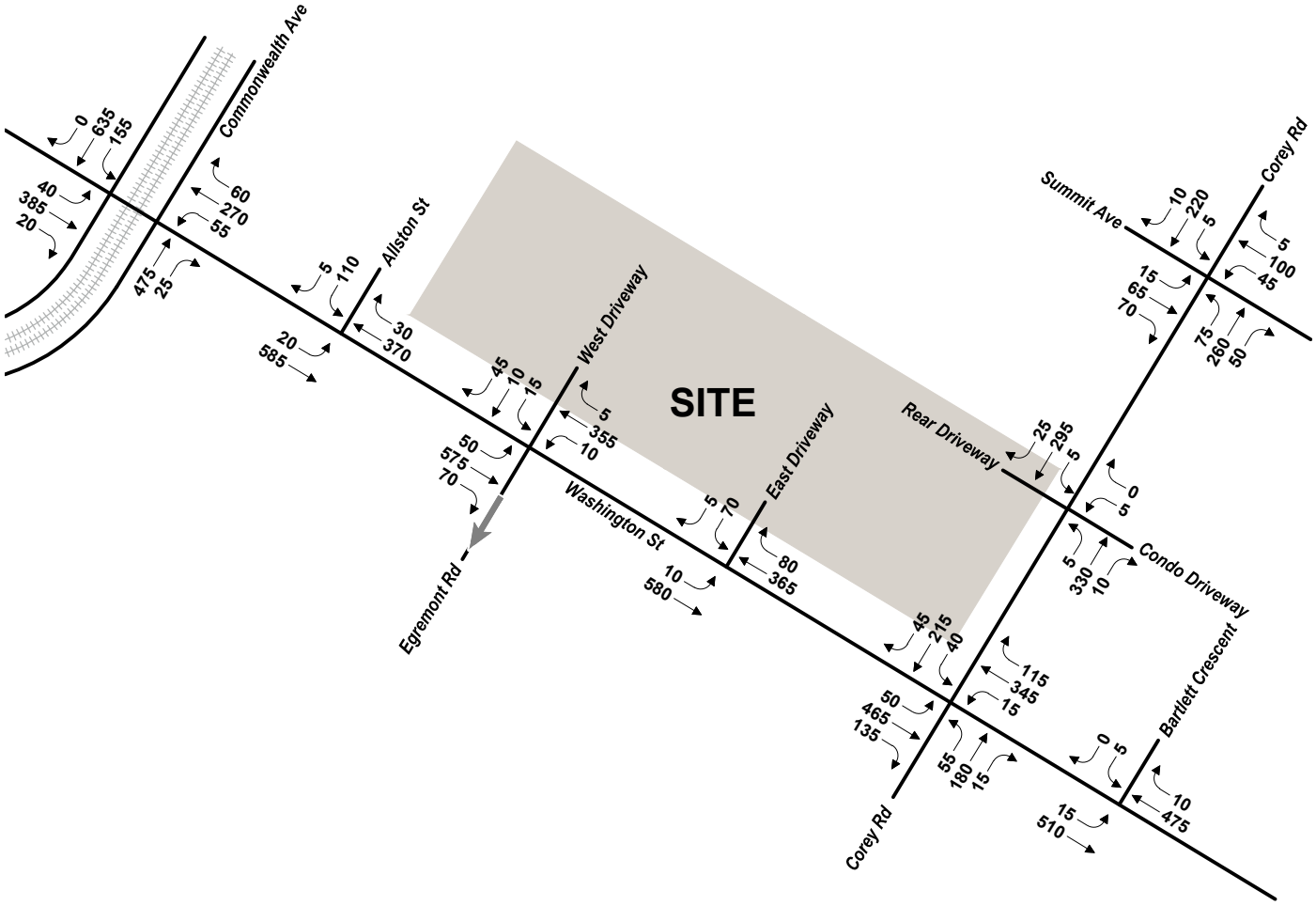
Prepared by: VHB

Not to Scale

Figure 5.3a

Existing Vehicle Volumes
Morning Peak Hour 7:45-8:45 AM

15 Washington Street
Brighton, Massachusetts



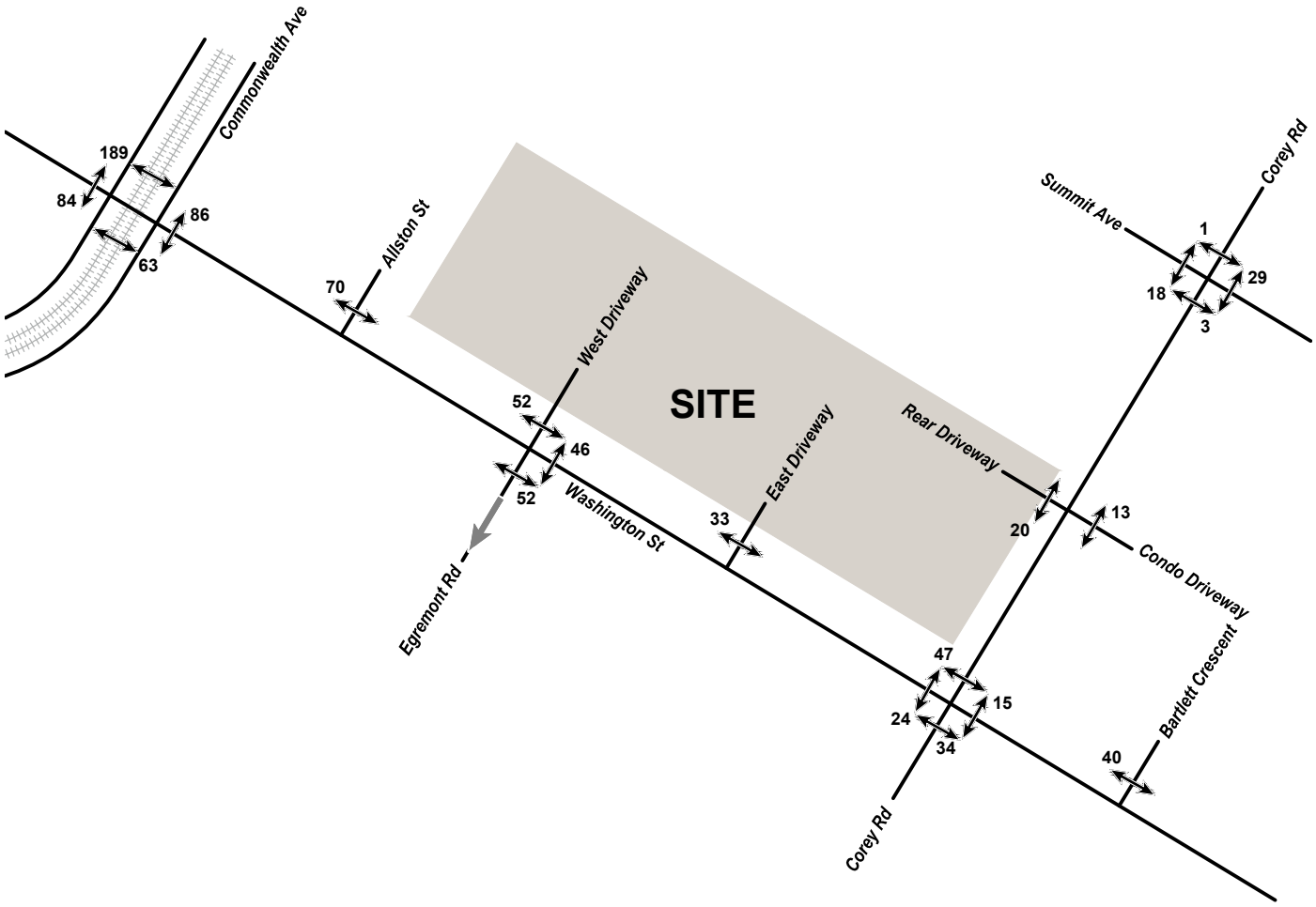
Prepared by: VHB

Not to Scale

Figure 5.3b

Existing Vehicle Volumes
Evening Peak Hour 5:00-6:00 PM

15 Washington Street
Brighton, Massachusetts



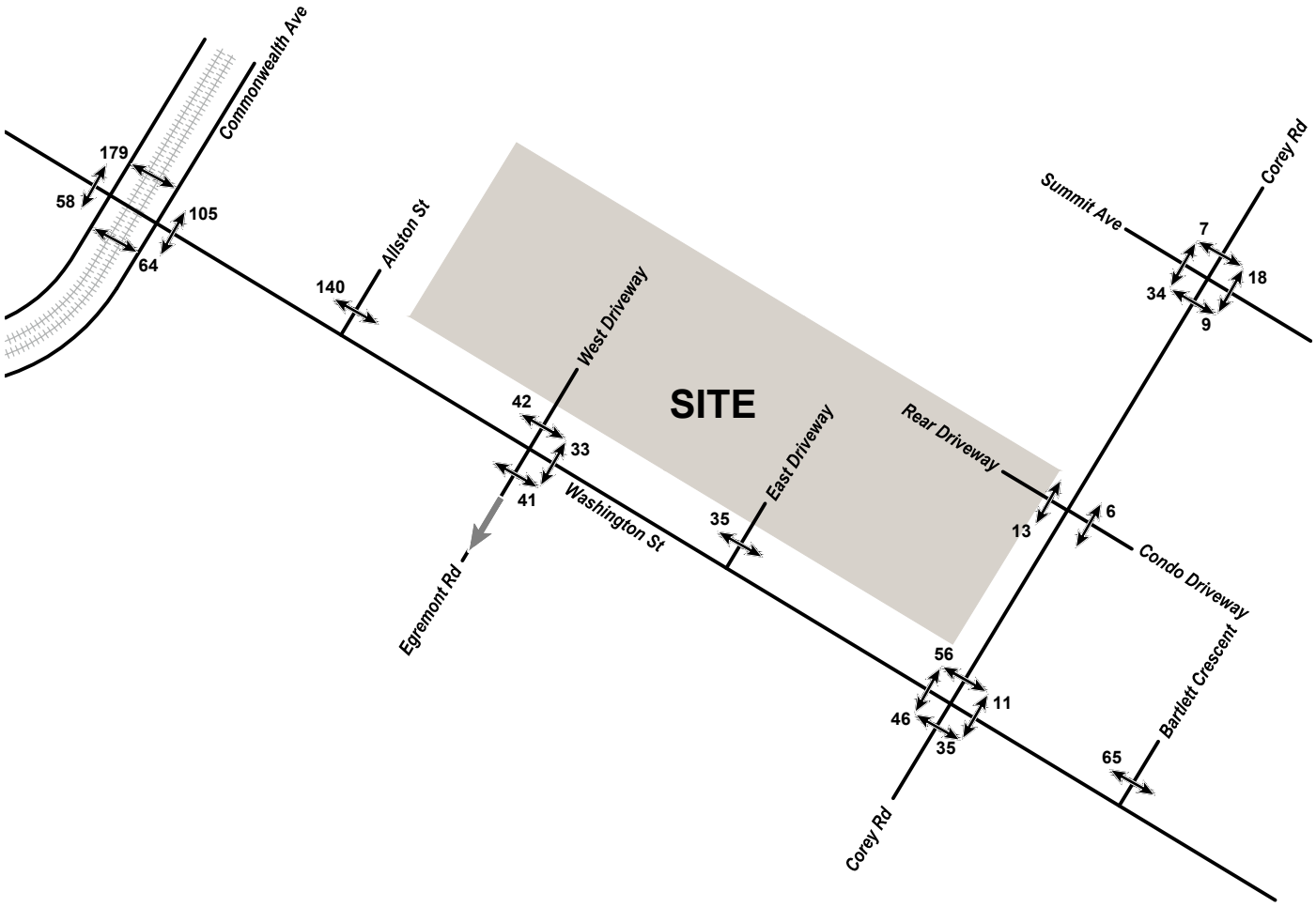
Prepared by: VHB

Not to Scale

Figure 5.4a

Existing Pedestrian Volumes
Morning Peak Hour 7:45-8:45 AM

Washington Street Plaza
15 Washington Street



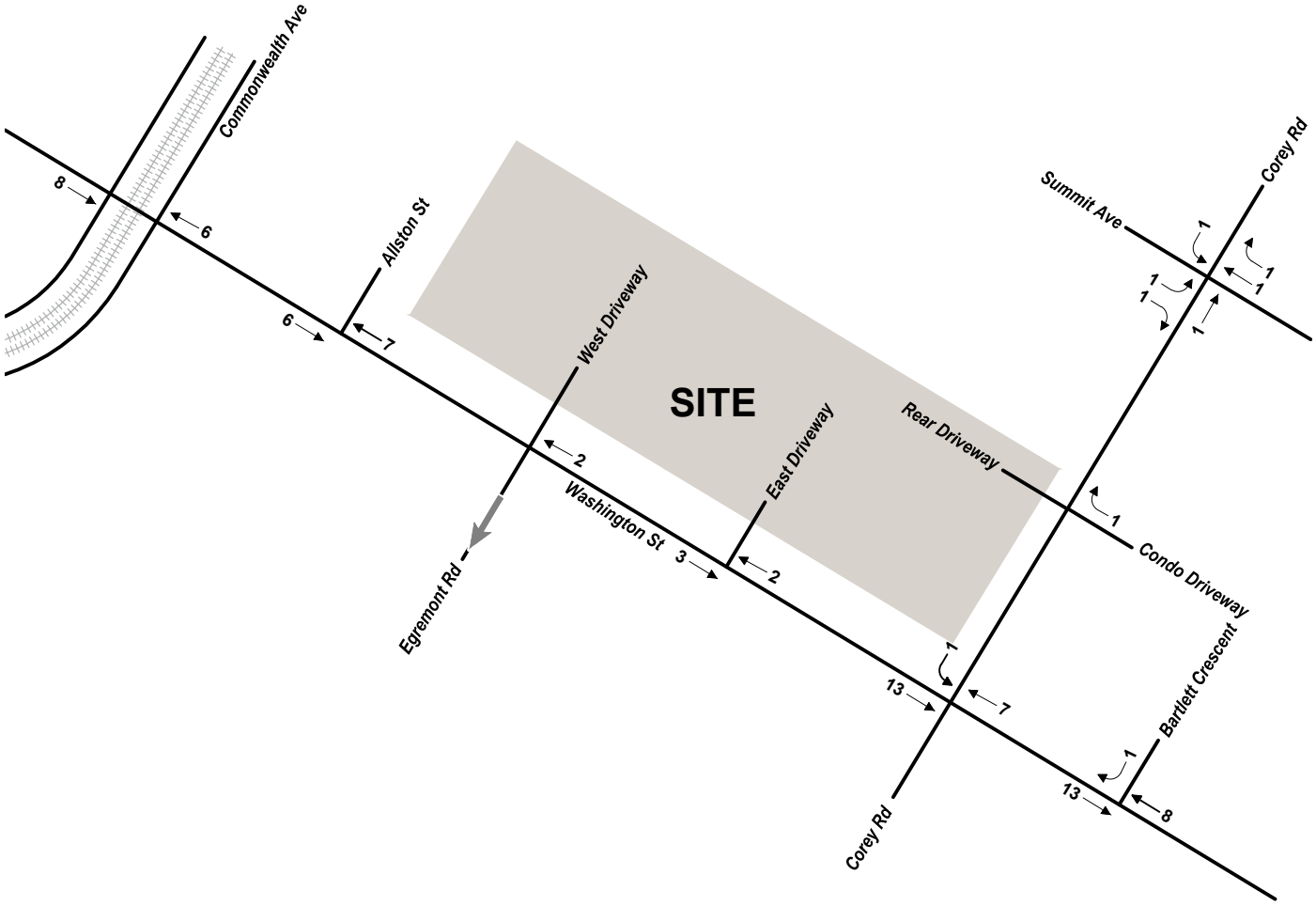
Prepared by: VHB

Not to Scale

Figure 5.4b

Existing Pedestrian Volumes
Evening Peak Hour 5:00-6:00 PM

15 Washington Street
Brighton, Massachusetts



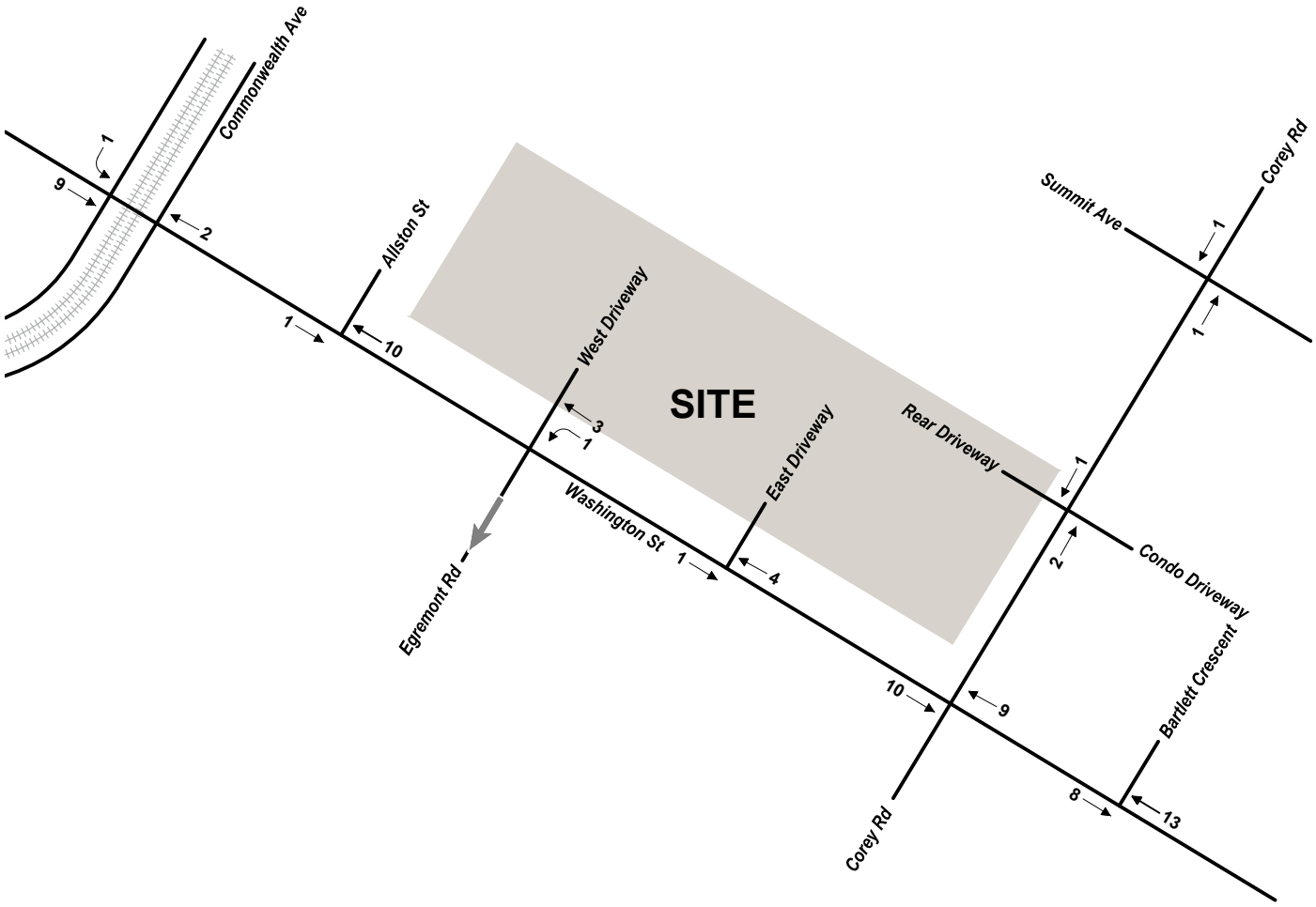
Prepared by: VHB

Not to Scale

Figure 5.5a

Existing Bicycle Volumes
Morning Peak Hour 7:45-8:45 AM

15 Washington Street
Brighton, Massachusetts



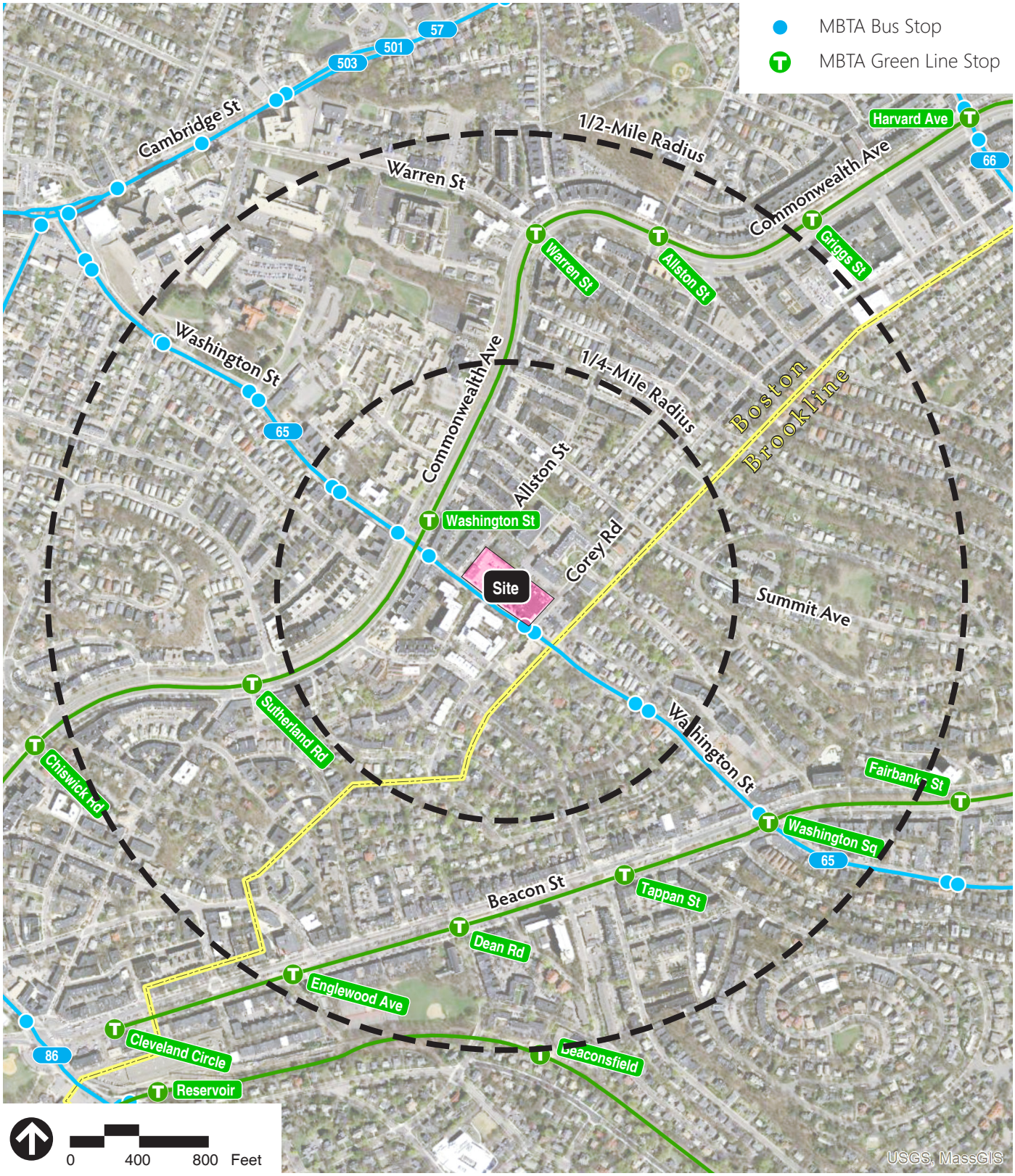
Prepared by: VHB

Not to Scale

Figure 5.5b

Existing Bicycle Volumes
Evening Peak Hour 5:00-6:00 PM

15 Washington Street
Brighton, Massachusetts



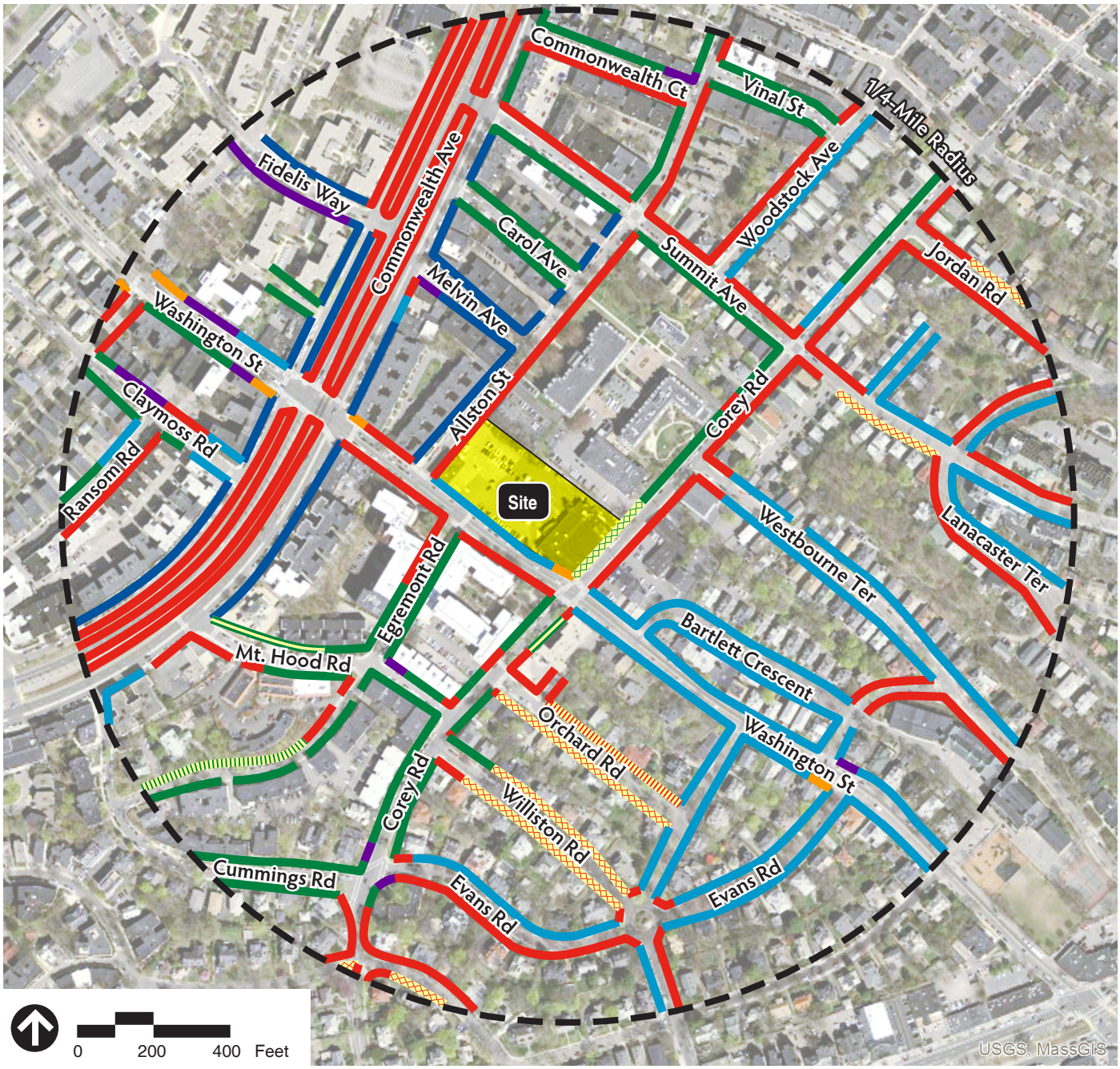
Source: MassGIS 2013-2014 USGS Aerial, MBTA

Figure 5.6

Public Transportation

15 Washington Street
Brighton, Massachusetts

- No Parking
- No Parking 2am-5am
- No Parking 2:30pm-3:30pm School Days
- 2-Hour Parking Unless otherwise Regulated
- Unrestricted
- MBTA Bus Stop
- Allston/Brighton Resident Permit Parking Only
- Allston/Brighton Resident Permit Parking Only 6pm-8am
- Allston/Brighton Resident Permit Parking Only 12:01am-8:00am Except Sat & Sun
- Allston/Brighton Resident Permit Parking Only Visitor Parking 2-Hour Limit 8am-6pm Mon-Fri
- Handicapped

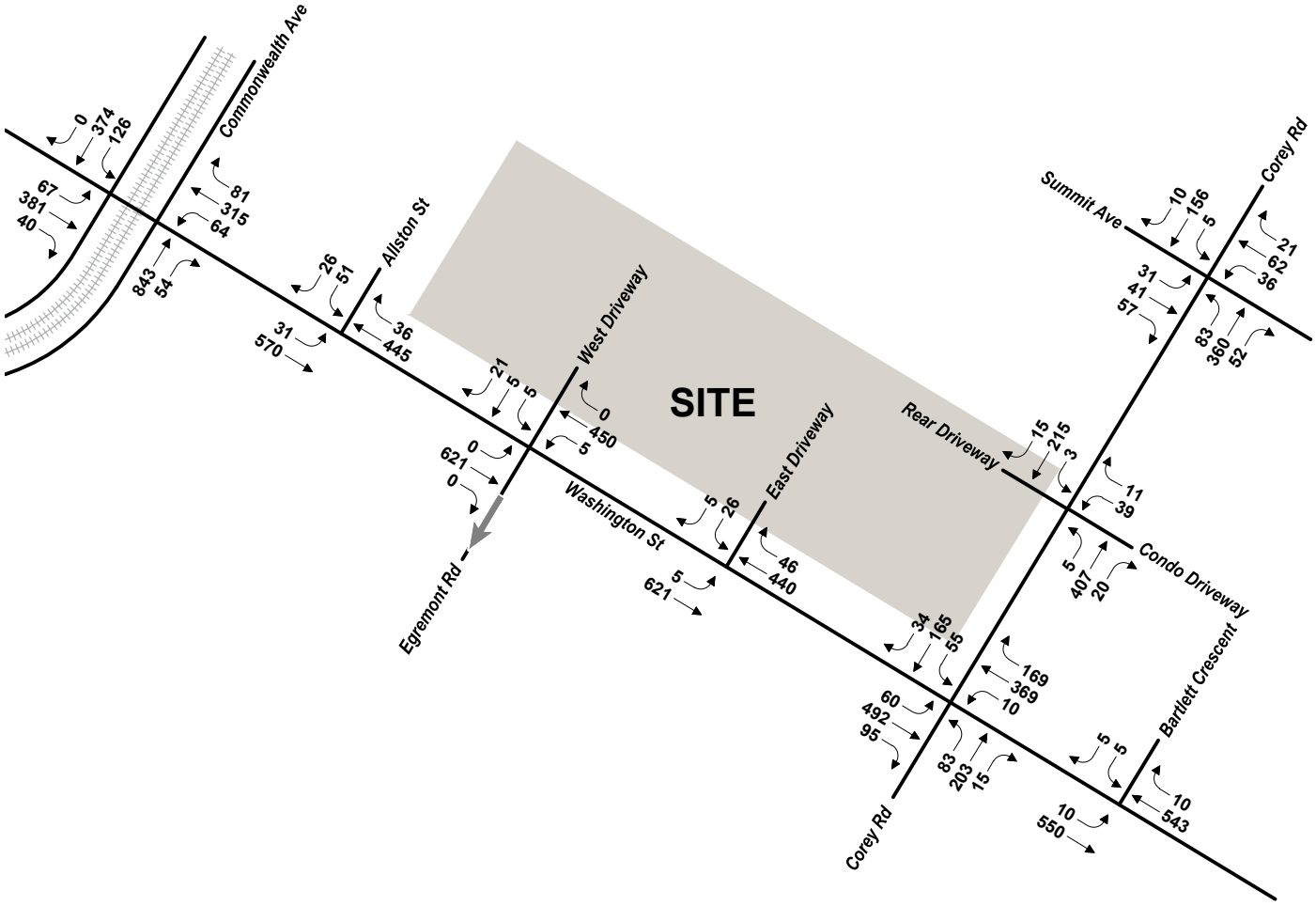


Source: MassGIS 2013-2014 USGS Aerial

Figure 5.7

Existing Curb Regulations

15 Washington Street
Brighton, Massachusetts



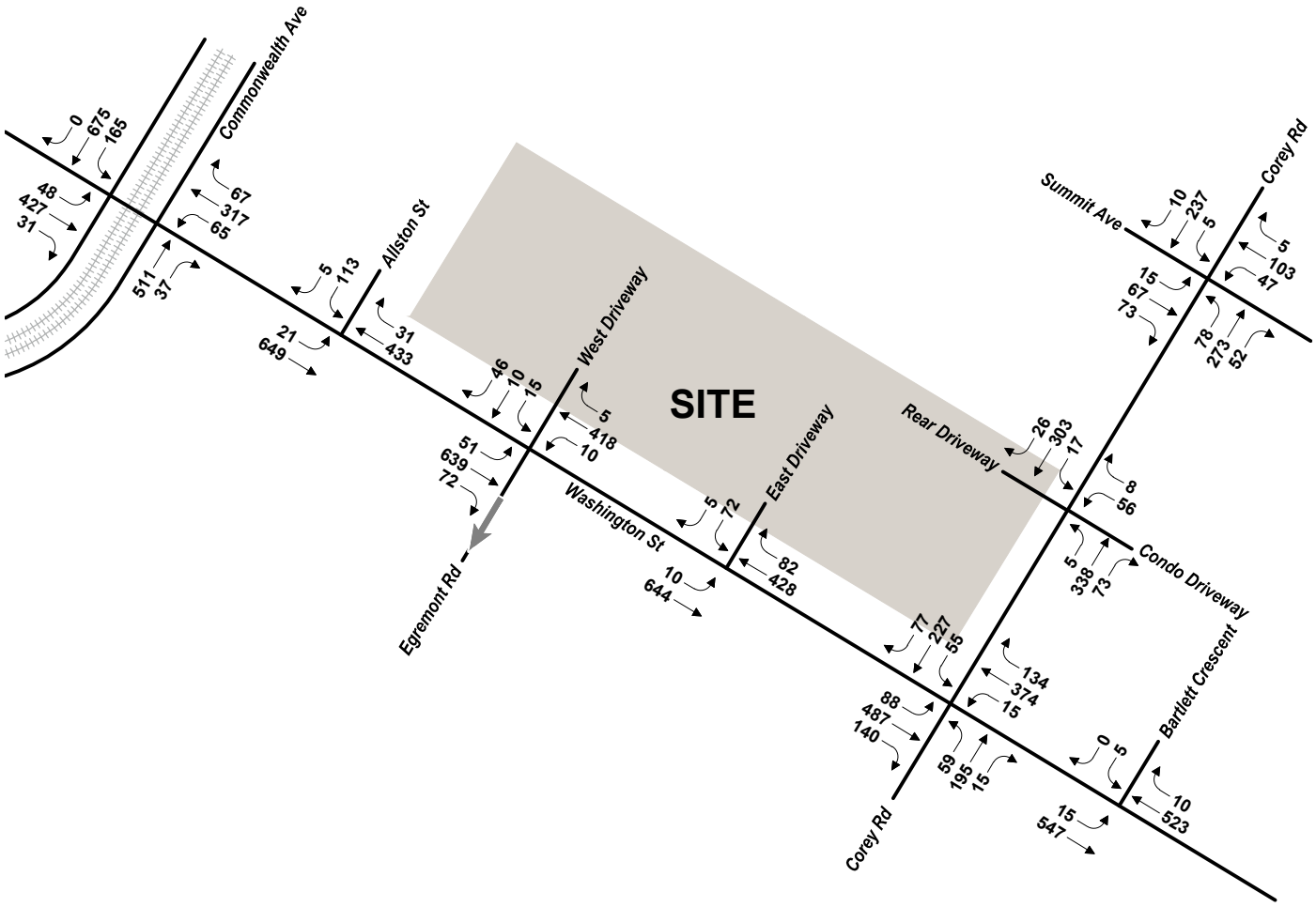
Prepared by: VHB

Not to Scale

Figure 5.8a

2022 No-Build Condition
Morning Peak Hour 7:45-8:45 AM

15 Washington Street
Brighton, Massachusetts



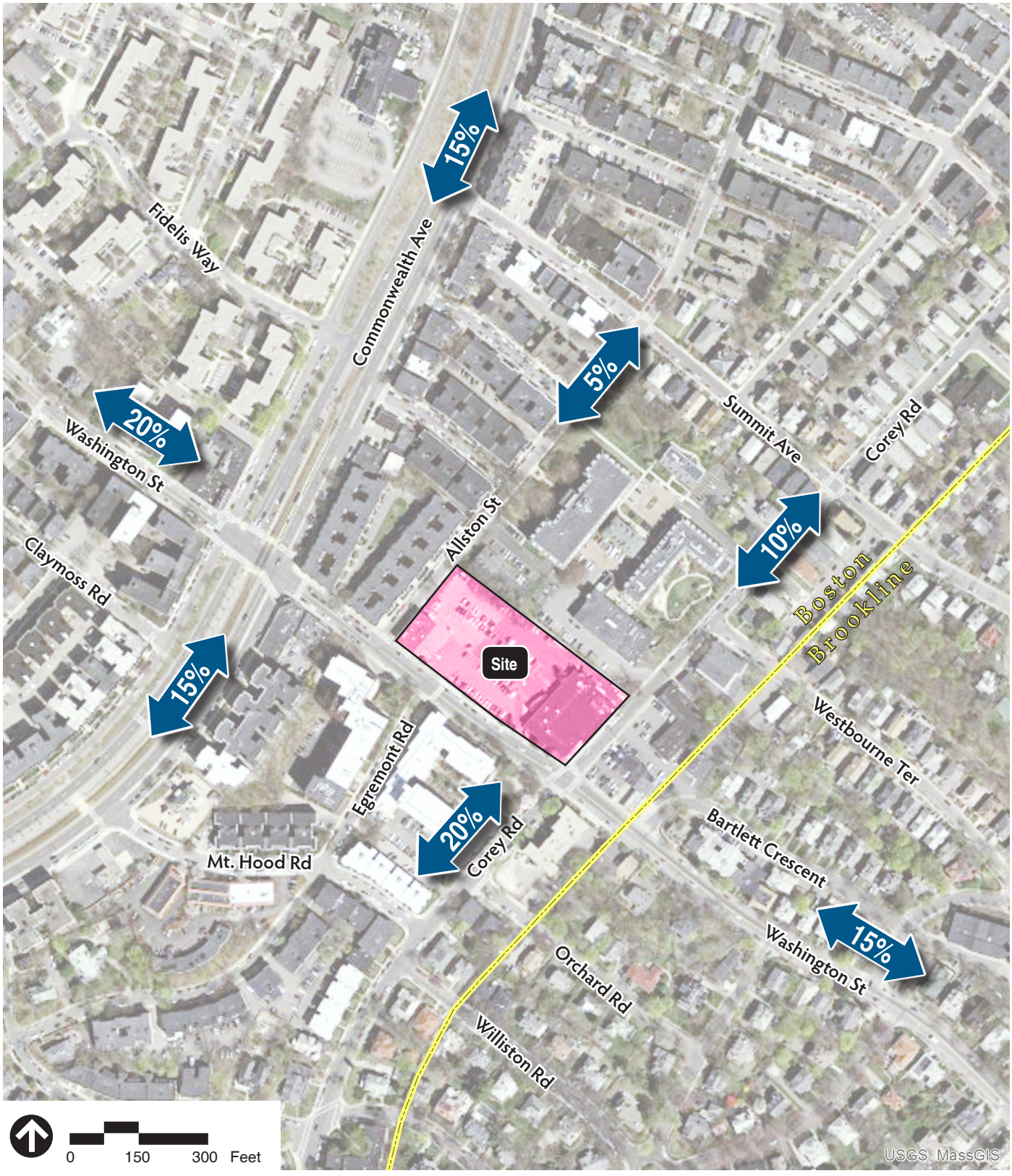
Prepared by: VHB

Not to Scale

Figure 5.8b

2022 No-Build Condition
Evening Peak Hour 5:00-6:00 PM

15 Washington Street
Brighton, Massachusetts

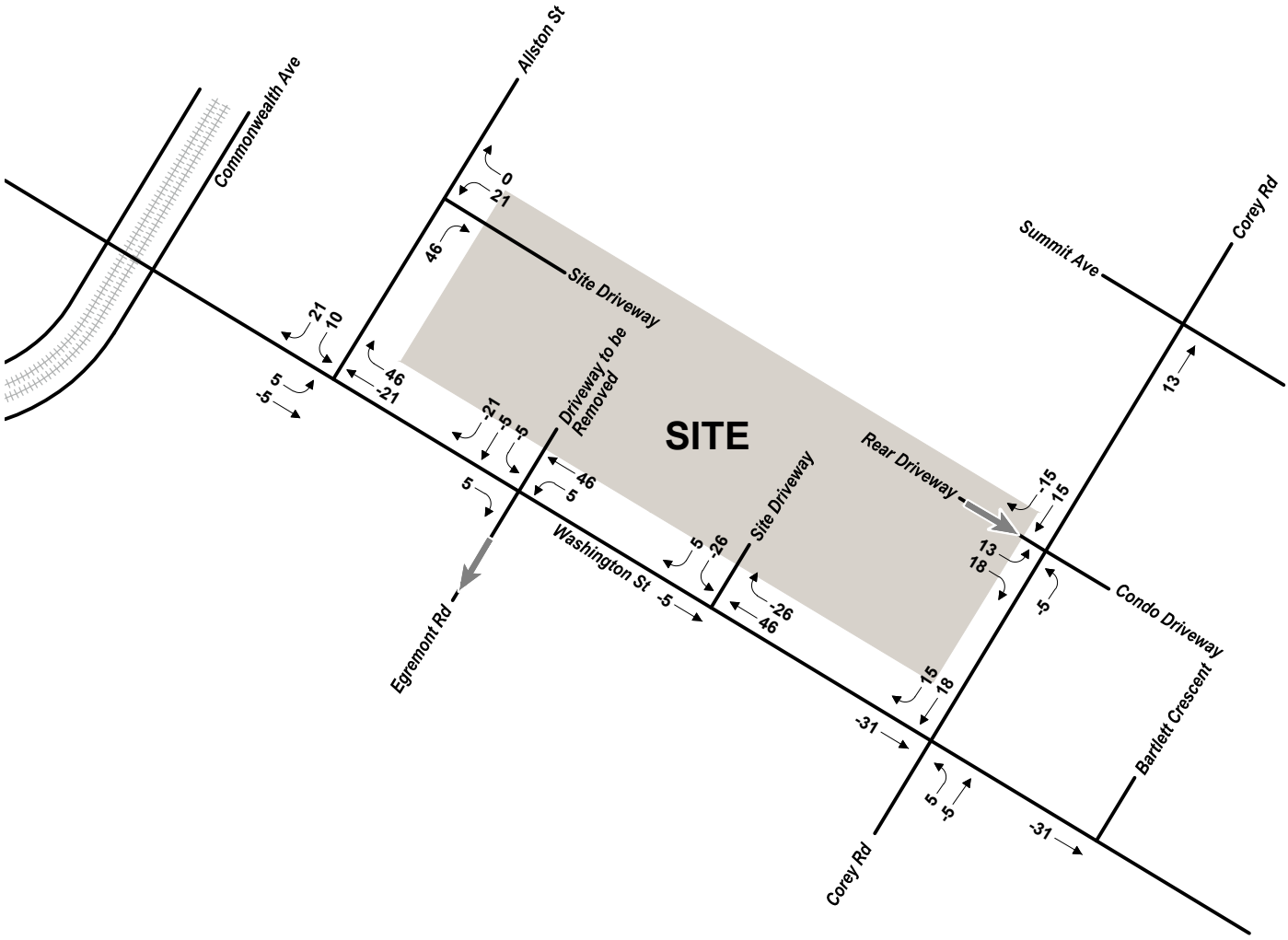


Source: MassGIS 2013-2014 USGS Aerial

Figure 5.9

Vehicle Trip Distribution

15 Washington Street
Brighton, Massachusetts



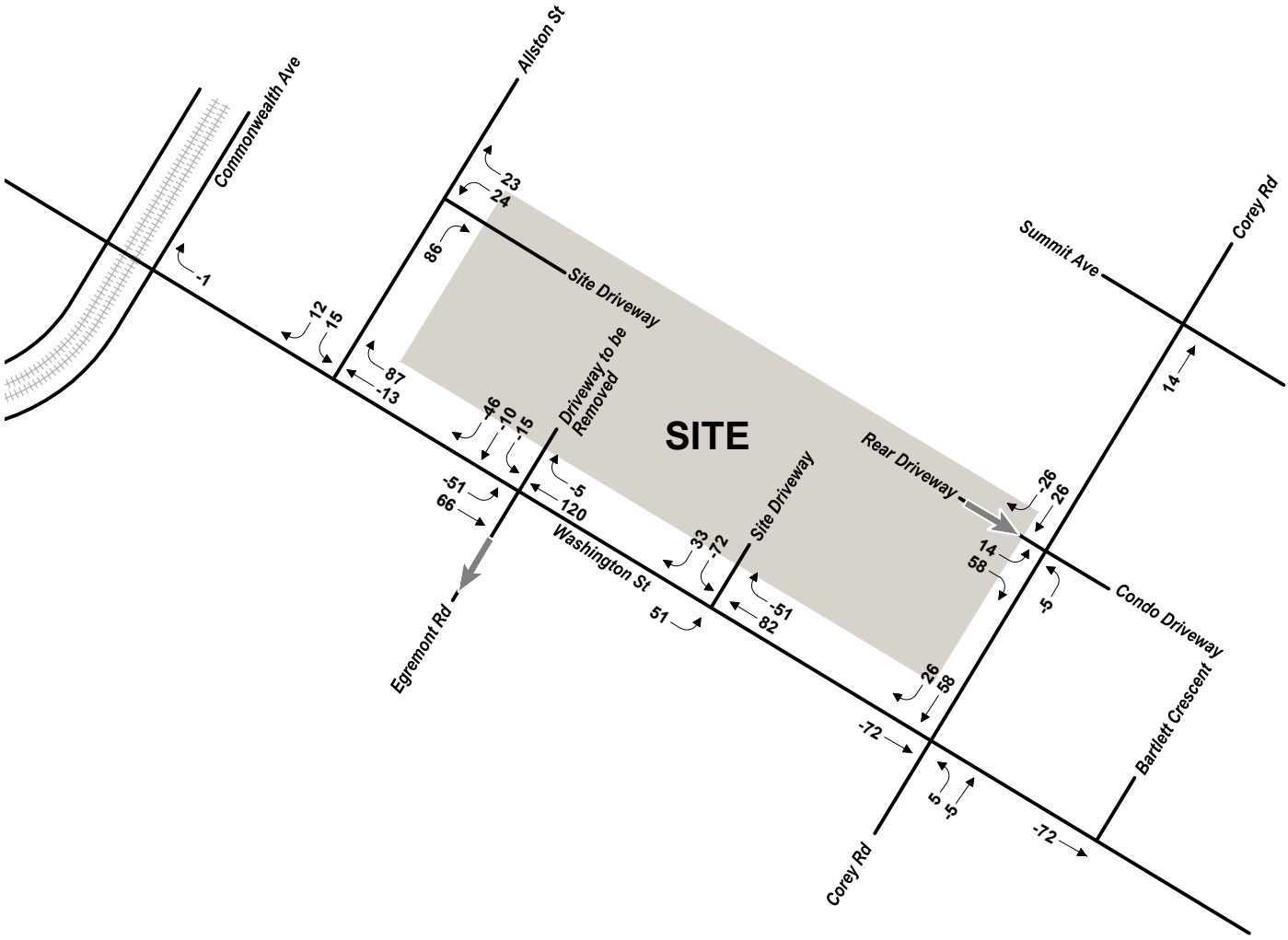
Prepared by: VHB

Not to Scale

Figure 5.10a

Diverted Trips
Morning Peak Hour: 7:45-8:45 AM

15 Washington Street
Brighton, Massachusetts



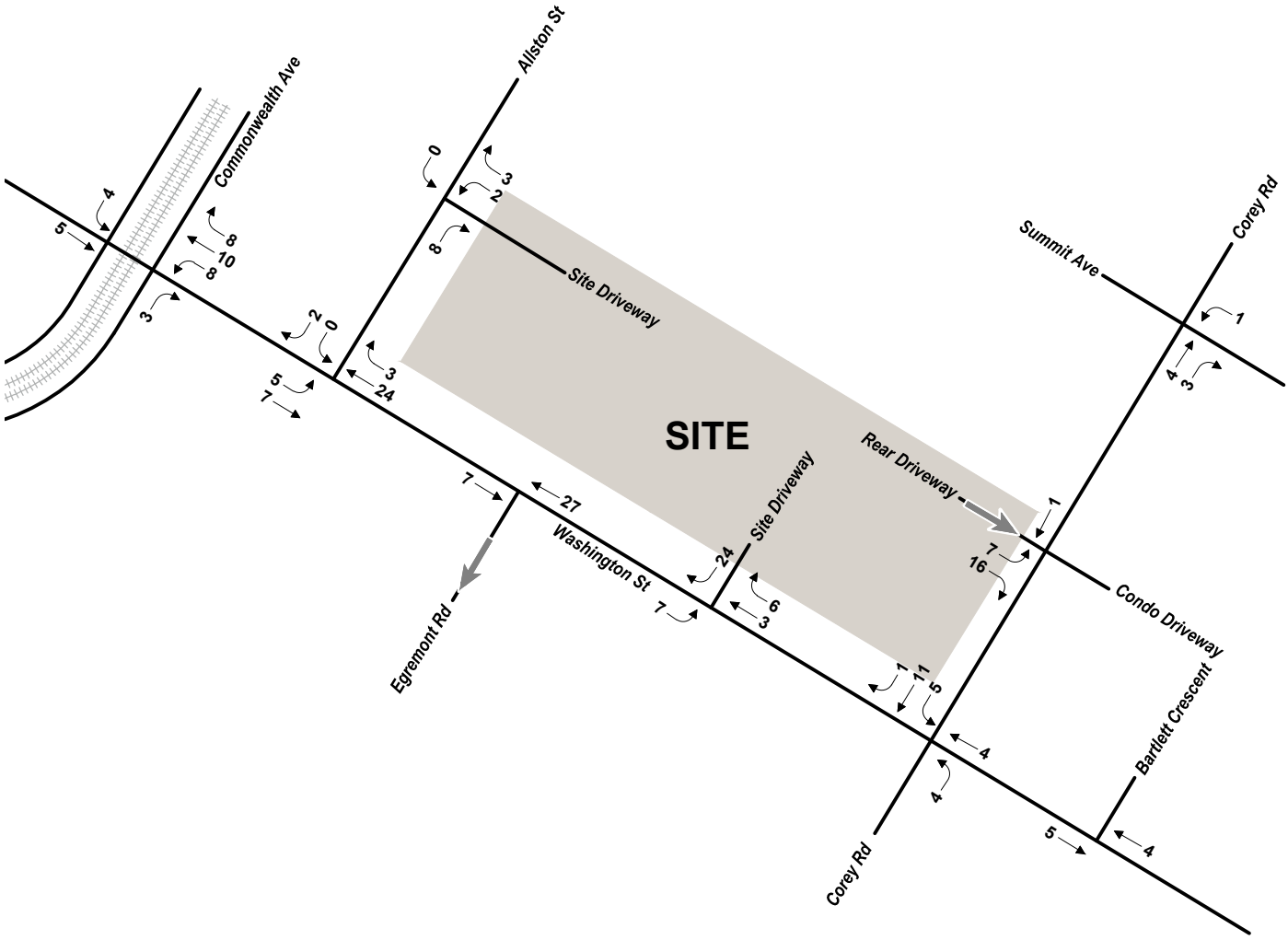
Prepared by: VHB

Not to Scale

Figure 5.10b

Diverted Trips
Evening Peak Hour: 5:00-6:00 PM

15 Washington Street
Brighton, Massachusetts



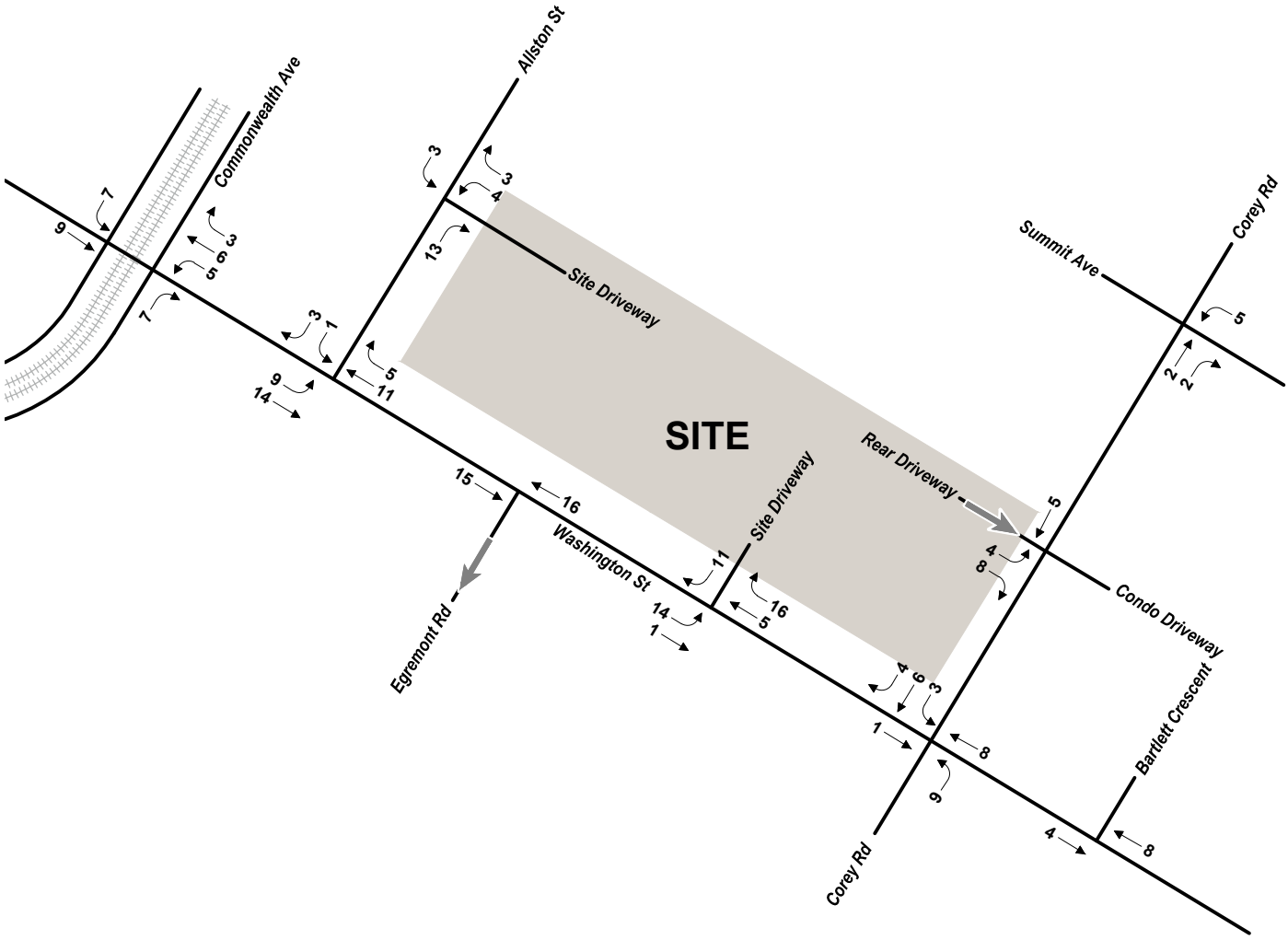
Prepared by: VHB

Not to Scale

Figure 5.11a

Project-Generated Trips
Morning Peak Hour: 7:45-8:45 AM

15 Washington Street
Brighton, Massachusetts



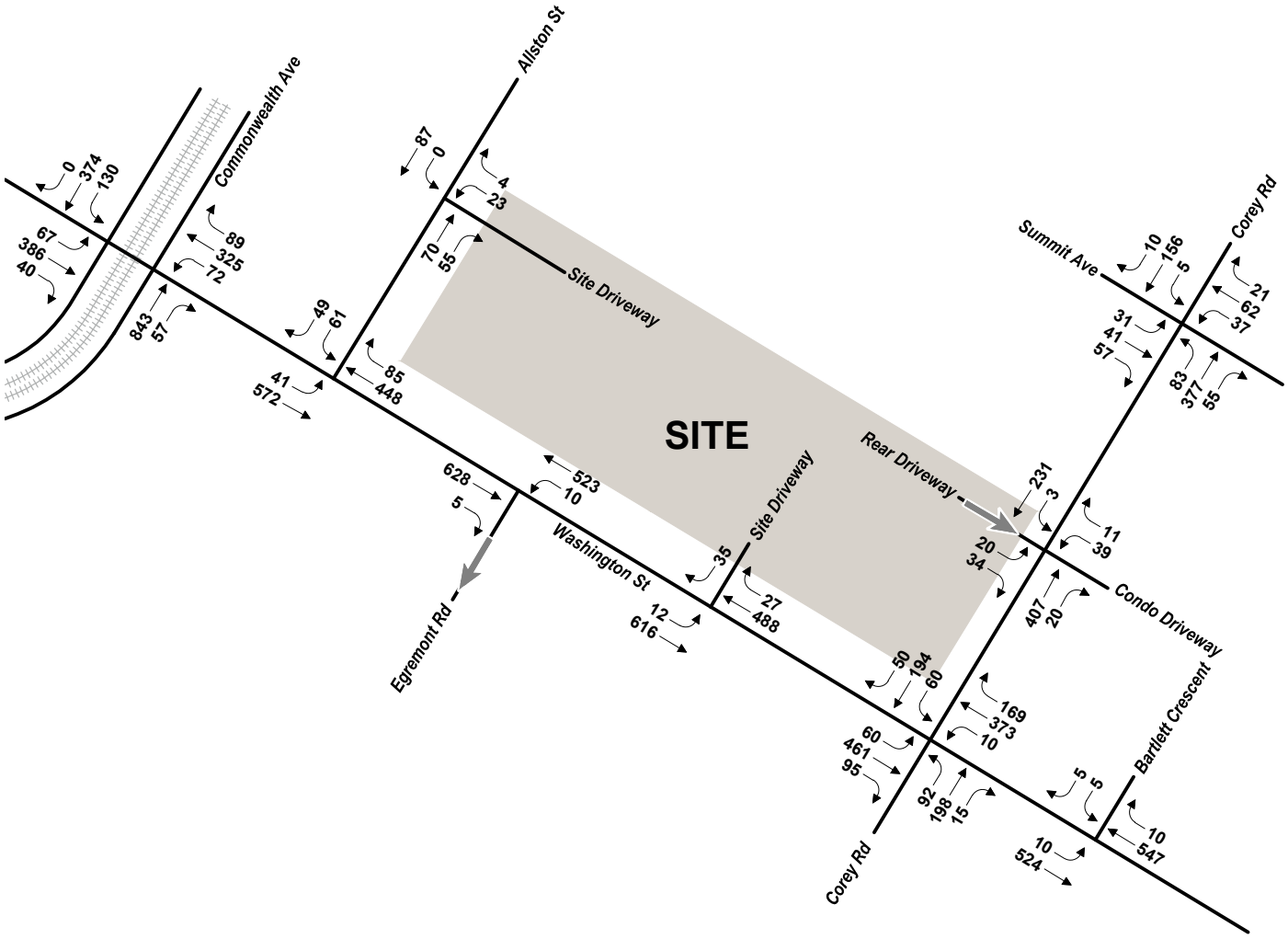
Prepared by: VHB

Not to Scale

Figure 5.11b

Project-Generated Trips
Evening Peak Hour: 5:00-6:00 PM

15 Washington Street
Brighton, Massachusetts



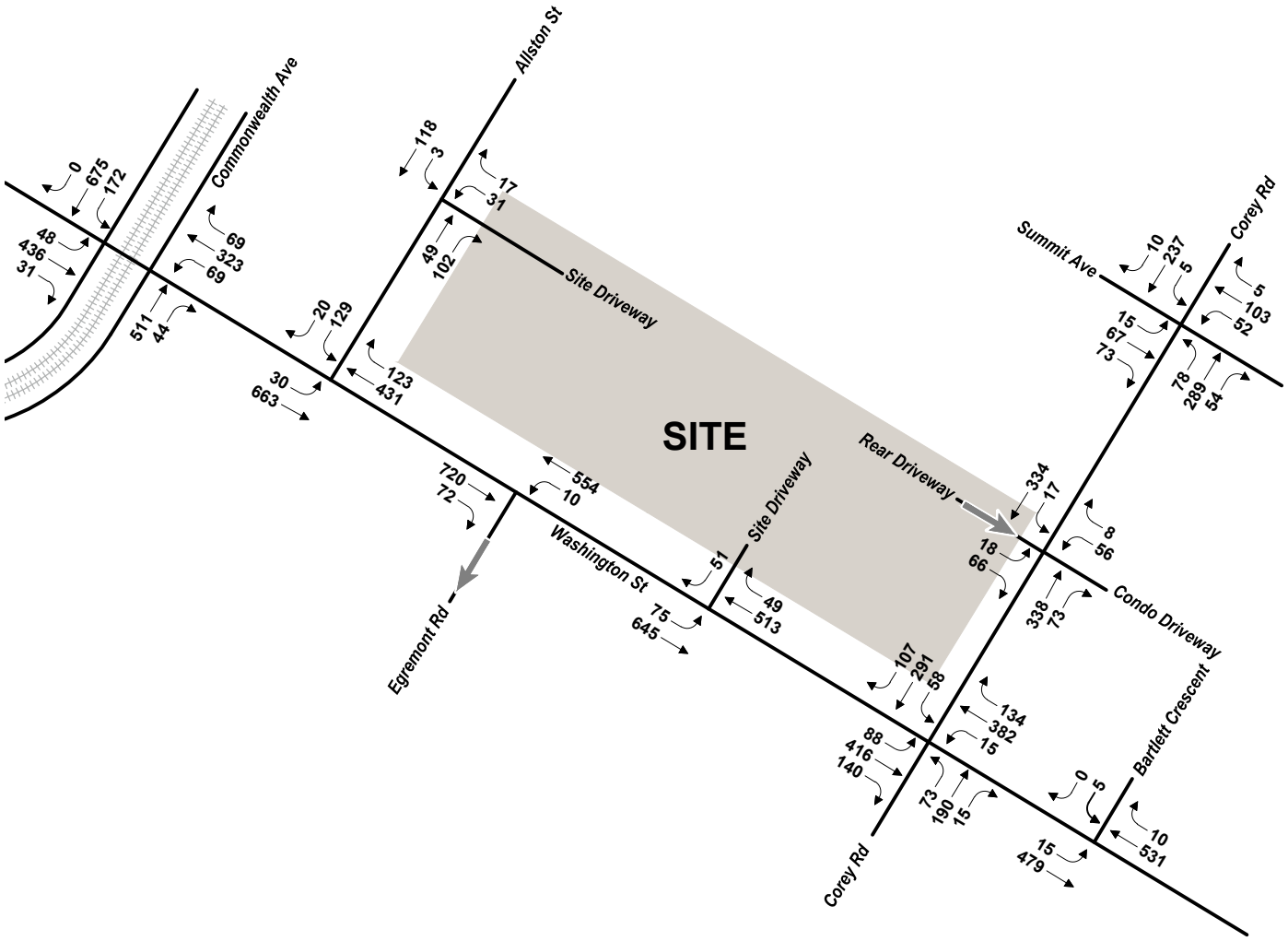
Prepared by: VHB

Not to Scale

Figure 5.12a

2022 Build Condition
Morning Peak Hour: 7:45-8:45 AM

15 Washington Street
Brighton, Massachusetts



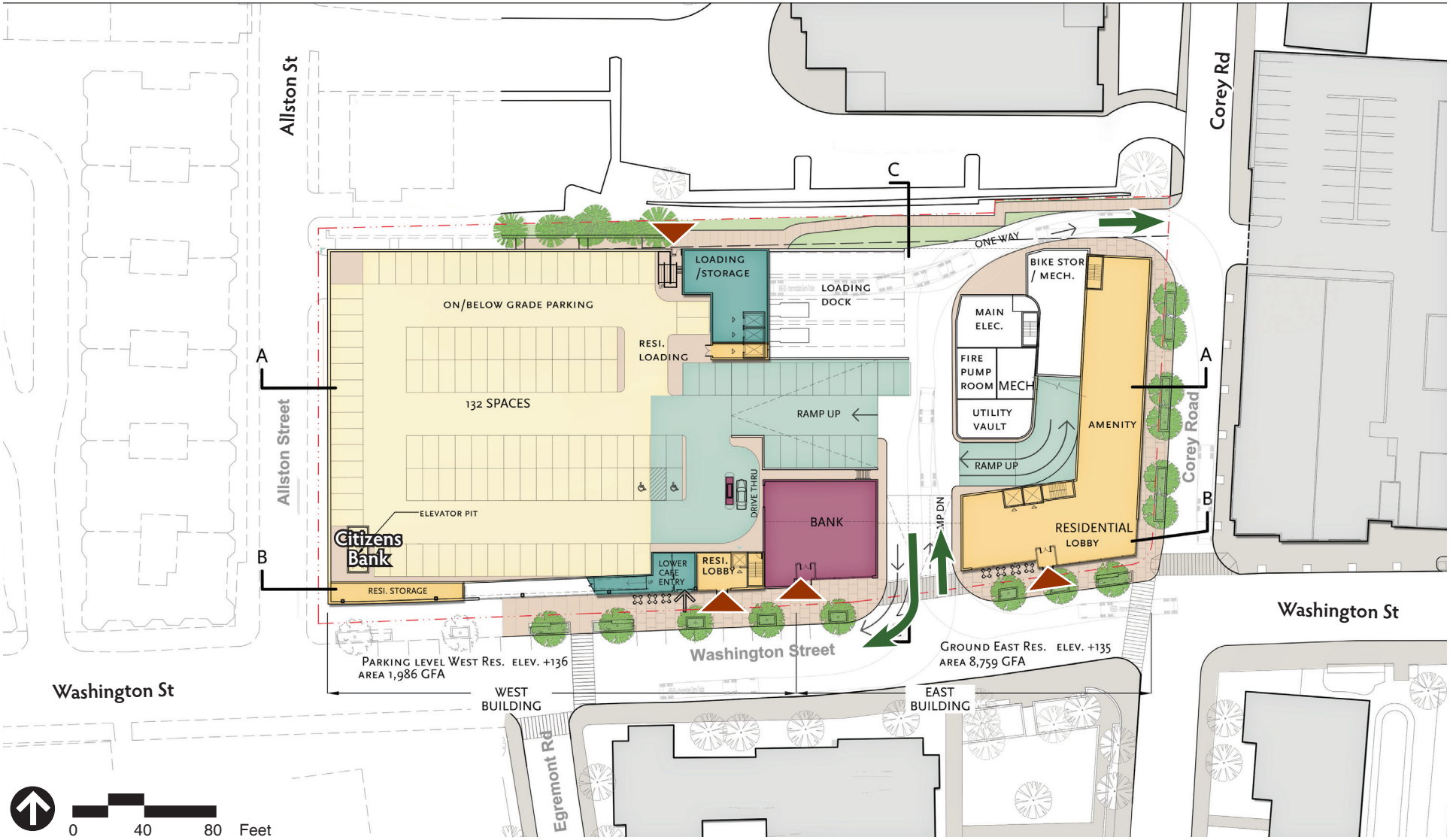
Prepared by: VHB

Not to Scale

Figure 5.12b

2022 Build Condition
Evening Peak Hour: 5:00-6:00 PM

15 Washington Street
Brighton, Massachusetts



Source: MassGIS 2013-2014 USGS Aerial

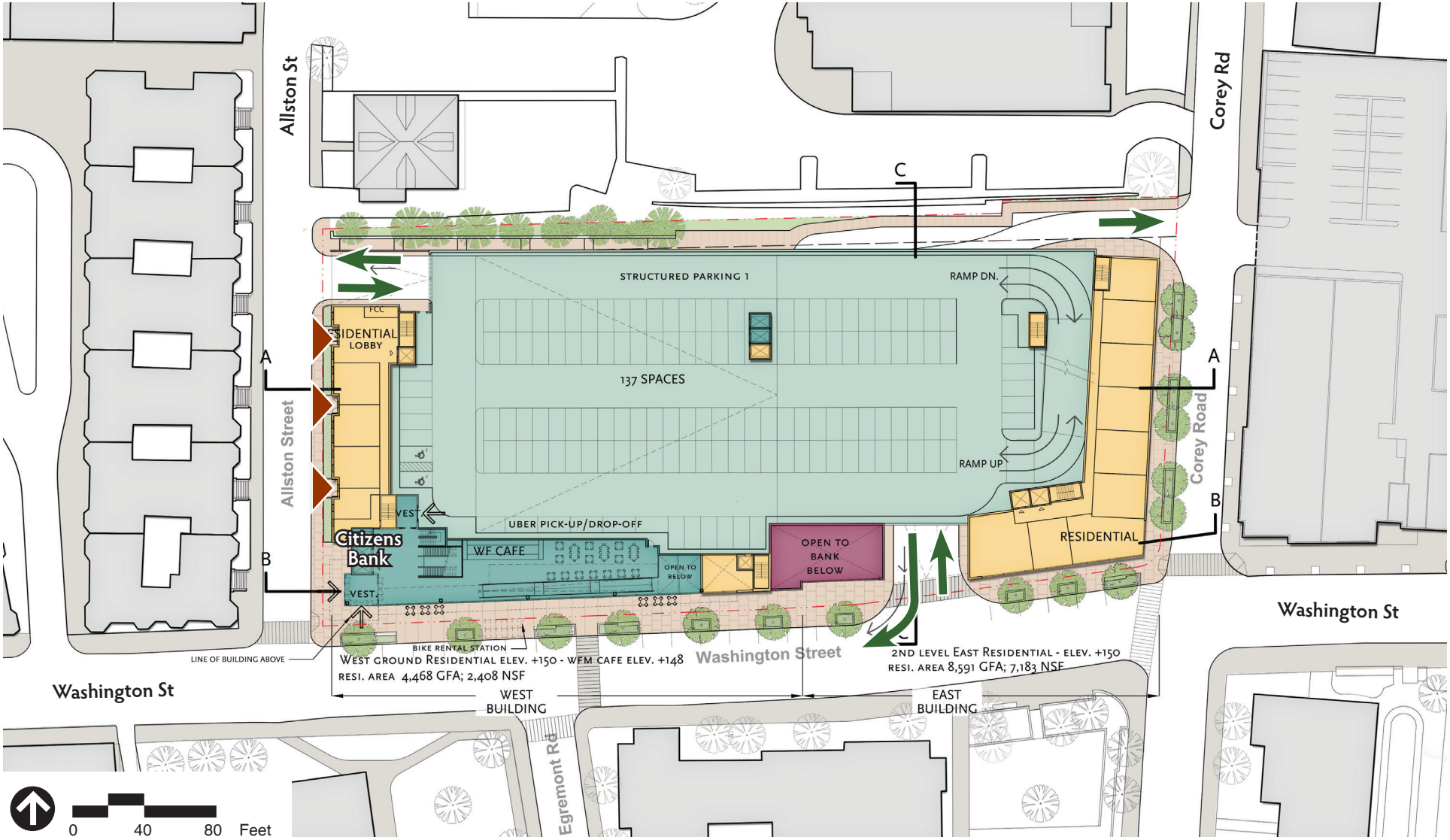
Pedestrian Access

Vehicle Access

Figure 5.13a

Proposed Site Access and Circulation
West Building Parking Floor Access/
East Building Ground Floor Access

15 Washington Street
Brighton, Massachusetts



Source: MassGIS 2013-2014 USGS Aerial

Pedestrian Access

Vehicle Access

Figure 5.13b

Proposed Site Access and Circulation
West Building Ground Floor Access/
East Building Second Floor Access

15 Washington Street
Brighton, Massachusetts

6

Environmental Protection

This chapter describes the existing environmental conditions on and near the Project Site and the potential changes that may occur as a result of the Project. A goal of the Project is to better utilize the Project Site and complement adjacent uses while avoiding, minimizing, and/or mitigating potential adverse environmental impacts to the surrounding area to the greatest extent feasible. As discussed in more detail below, the Proposed Project-related environmental impacts, which are to be expected in any development of this scale, are counterbalanced by the significant benefits for the adjacent neighborhoods, the City, and the region.

In compliance with the Article 80 Large Project Review guidelines of the Code, the Project will address potential environmental impacts in the following categories:

- Shadow
- Daylight
- Solar Glare
- Air Quality
- Noise
- Water Quality
- Flood Hazard
- Geotechnical/Groundwater
- Solid Waste and Hazardous Materials
- Construction Period
- Rodent Control

6.1 Summary of Key Findings and Benefits

In summary, the initial key findings and benefits of the analyses of potential environmental impacts associated with the Project are as follows:

- Shadow – Shadow impacts have been minimized to the maximum extent practicable to avoid any noticeable effect on pedestrian use patterns.
- Daylight – The Project will result in a reduction in the visible skydome when viewed from adjacent sidewalks compared to existing conditions. Such changes are consistent with the Project's urban context and will be offset by improvements to the public realm that are anticipated to improve the overall pedestrian experience as compared to existing conditions.
- Solar Glare – The Project will minimize solar glare impacts on the surrounding area through material selection.
- Air Quality – The Project will not result in adverse localized air quality impacts.
- Water Quality – The Project will comply with all applicable stormwater management standards to the extent practicable by implementing Best Management Practices to improve water quality.
- Flood Hazard – The Project Site is not located within a special flood hazard area and is not at high risk of inundation from sea level rise and flooding during its

design life due to its location above the Turnpike and the MBTA commuter rail tracks.

- Noise – Based on preliminary design, the Project's operations will have no adverse noise impacts at nearby sensitive receptor locations and will not contribute to a violation of the City of Boston's noise standards.
- Geotechnical/Groundwater – The is limited potential for groundwater impacts at the Project Site. The geotechnical engineer and contractor will work closely together throughout excavation and foundation construction to avoid adverse impacts on adjacent structures. Soil disturbance and vibration will be limited by low displacement foundation elements.
- Solid and Hazardous Materials – The Project Site does not contain any known reported releases of oil or hazardous materials. Soil and groundwater will be managed in accordance with all applicable regulations during construction and no related impacts are anticipated.
- Construction – The Project has been designed to avoid, minimize and mitigate potential construction-related impacts. The Project Team will work with the City to reduce potential construction period impacts.

6.2 Shadow

An analysis of the shading impact under the No-Build and Build Conditions is a requirement of the Article 80, Large Project Review (Section 80B-2(c) of the Boston Code). The shading analysis was prepared in accordance with the requirements of Section B.2. of the BPDA Development Review Guidelines.

6.2.1 Methodology

A shadow impact analysis was conducted at regular time intervals to investigate the effect that the Project will have throughout the year. A computer model of the Project and surrounding urban area was developed. A number of days and times were analyzed, as required under Article 80. The analysis used "clear sky" solar data at Boston's Logan International Airport, meaning the assumption that no cloud cover ever occurs; therefore, providing a "worst case" scenario showing the full extent of when and where shadow could occur.

In order to represent a variety of shadow conditions at various times of the day, and times of the year, three time intervals (9:00 AM, 12:00 PM, 3:00 PM) are represented for the Vernal and Autumnal Equinoxes (March 21st and September 21st), Summer Solstice (June 21st), and Winter Solstice (December 21st). Per the BPDA Development Review Guidelines, 6:00 PM has been studied for the March 21, June 21 and September 21.

The shadow study takes into consideration Daylight Savings Time ("DST") and, therefore, times are presented in Eastern Standard Time ("EST") and Eastern Daylight Time ("EDT"). Table 6-1 shows the solar azimuth and altitude data. Times are listed as EST and EDT, as appropriate.

Table 6-1 Solar Azimuth and Altitude Data

Date	Time	Azimuth [1]	Altitude[2]
March 21 EDT	9:00 AM	112.59	23.61
March 21 EDT	12:00 PM	161.17	46.69
March 21 EDT	3:00 PM	223.5	39.26
June 21 EDT	9:00 AM	93.51	39.95
June 21 EDT	12:00 PM	149.52	68.8
June 21 EDT	3:00 PM	246.32	56.48
June 21 EDT	6:00 PM	280.71	23.83
September 21 EDT	9:00 AM	115.54	25.89
September 21 EDT	12:00 PM	166.28	47.2
September 21 EDT	3:00 PM	227.1	37.14
September 21 EDT	6:00 PM	140.54	27.83
December 21 EST	9:00 AM	184.36	24.12
December 21 EST	12:00 PM	224.96	10.1
December 21 EST	3:00 PM	112.59	23.61

1 Azimuth is measured in degrees clockwise from North
2 Altitude is measured in degrees up from the horizon
EST Eastern Standard Time
EDT Eastern Daylight Time

6.2.2 Shadow Study Findings

The shadow study findings focus on the shadow cast onto existing pedestrian areas, open spaces, and sidewalks adjacent to and in the vicinity of the Project Site. Given the Project Site location, shadows generated by the Project will not adversely impact existing public open spaces.

March 21st

The net new shadows associated with the Project for March 21 are illustrated in Figure 6.1a. March 21 is the vernal equinox, when the length of daytime and nighttime are equal. The sun rises on March 21 at 6:45 AM EDT in the southeastern sky and sets at 6:57 PM EDT.

At 9:00 AM on the vernal equinox, net new shadow from the Project will be cast primarily on Allston Street to the northwest of the Project Site.

At 12:00 noon, the Project will cast a small amount of net new shadow to the northeast of the Project Site.

At 3:00 PM, net new shadow from the proposed Project will extend east across Corey Road.

At 6:00 PM, net new shadow from the proposed Project will extend southeast across Corey Road and onto the adjacent properties. At this time of day, existing shadows in the area are extensive.

June 21st

The net new shadows associated with the Project for June 21 are illustrated in Figure 6.1b. June 21 is the summer solstice and the longest day of the year. The sun rises at 5:08 AM EDT in the southeastern sky and sets at 8:25 PM EDT.

At 9:00 AM on the summer solstice, net new shadow from the Project will extend to the north over Allston Street.

At 12:00 noon, the Project will cast no new shadow off of the Project Site.

At 3:00 PM, net new shadows from the Project will extend to the east over a small portion of Corey Road.

At 6:00 PM, shadows will extend to the south from the Project over Washington Street and Corey Road, as well as adjacent properties, but will fall mostly within areas of existing shadow.

September 21st

The net new shadows associated with the Project on September 21 are depicted on Figure 6.1c. September 21 is the autumnal equinox and the daytime and nighttime hours are equal. The sun rises at 6:31 AM EDT in the southeastern sky and sets at 6:42 PM EDT. The shadows cast on this date are almost identical to those on March 21, the vernal equinox.

At 9:00 AM on the autumnal equinox, net new shadow from the Project will be cast primarily on Allston Street to the northwest of the Project Site.

At 12:00 noon, the Project will cast no net new shadow off of the internal Project Site.

At 3:00 PM, net new shadow from the proposed Project will extend southeast across Corey Road.

The sun sets at 6:42 PM on the autumnal equinox and, therefore, the majority of the project area will be in existing shadow at 6:00 PM. At this time, the Project will result in minimal net new shadow.

December 21st

The net new shadows associated with the Project on December 21 are depicted on Figure 6.1d. December 21 is the winter solstice and the shortest day of the year. The sun is at its lowest inclination above the horizon at each hour of the day. Even low buildings cast long shadows in northerly latitudes, such as Boston. The sun rises at 7:10 AM EST and sets at 4:15 PM EST in December.

At 9:00 AM on the winter solstice, the Project casts a shadow in a northern direction extending over Allston Street and the adjacent properties.

At 12:00 noon, the Project will cast shadow in a northeastern direction extending over a portion of the adjacent property to the north.

At 3:00 PM, net new shadow from the Project will extend east onto a portion of the adjacent property to the north and a section of Corey Road. However, the sun sets at 4:15 PM, so the majority of the area will be in existing shadow at this time.

6.3 Daylight Analysis

The following section describes the anticipated effect on daylight coverage at the Project Site as a result of the Project. An analysis of the percentage of skydome obstructed under the No-Build and Build Conditions is a requirement of Article 80 (Section 80B-2(c)). The daylight analysis was prepared using the BPDA's Daylight Analysis Program ("BRADA") and has been completed in accordance with the requirements of Article 80. The results of the analysis are presented in Figures 6.2a-c.

6.3.1 Methodology

The daylight analysis was conducted using the BRADA program developed in 1985 by the Massachusetts Institute of Technology to estimate the pedestrian's view of the skydome taking into account building massing and building materials used. The software approximates a pedestrian's view of a site based on input parameters such as: location of viewpoint; length and height of buildings and the relative reflectivity of the building façades. The model typically uses the midpoint of an adjacent right-of-way or sidewalk as the analysis viewpoint. Based on these data, the model calculates the perceived skydome obstruction and provides a graphic depicting the analysis conditions.

The model inputs used for the study presented herein were taken from a combination of the BPDA's City of Boston model data, an existing conditions survey, and schematic design plans prepared by the Project Architect. As described above, the BRADA software considers the relative reflectivity of building façades when calculating perceived daylight obstruction. Highly reflective materials are thought to reduce the perceived skydome obstruction when compared to non-reflective materials. For the purposes of this daylight analysis, the building façades are considered non-reflective, resulting in a conservative estimate of daylight obstruction.

Viewpoints

The following three viewpoints were studied in the daylight analysis:

› Washington Street – This viewpoint is located on the centerline of Washington Street, centered on the southwestern side of the Project Site

› Corey Road – This viewpoint is located on the centerline of Corey Road, centered on the southeastern side of the Project Site

› Allston Street – This viewpoint is located on the centerline of Allston Street, centered on the northwestern side of the Project Site

These points represent the proposed building façades when viewed from the adjacent public ways.

6.3.2 Daylight Study Findings

Daylight Existing/No-Build Conditions

Under the existing condition/no build condition the Project Site is primarily covered in a surface parking lot as well as an approximately 20,350-square foot Whole Foods and 7,200-square foot Citizens Bank. Both existing buildings are single-story, and the primary skydome obstruction comes from the existing Whole Foods. The existing skydome obstruction percentages range, based on the viewpoint, from 4.5 percent at the Washington Street study point to 47.7 percent on the Corey Road study point and 11.2 percent at the Allston Street study point.

Daylight Build Conditions

Under the Proposed Conditions, the viewpoints along the three roadways are expected to experience an increase in skydome obstruction due to the increased height and massing of the new buildings, as would be expected when increasing the density of a site. The increase in skydome obstruction will be offset by various public benefits including improvements to the public realm, which are anticipated to improve the overall pedestrian experience as compared to existing conditions.

Table 6-2 below presents the percentage of skydome that is expected to be obstructed along the three public ways with and without the Project. Figures 6.2a-c graphically show the Project-related daylight impacts from the three viewpoints.

Table 6-2 Existing/No-Build and Build Daylight Conditions

Viewpoint	Existing/No-Build Condition Skydome Obstruction	Build Condition Skydome Obstruction
Washington Street	4.5%	59.7%
Corey Road	47.7%	68.3%
Allston Street	11.2%	63.8%

6.4 Solar Glare Analysis

The City of Boston BPDA Development Review Guidelines require projects undergoing Large Project Review to analyze the potential impacts from solar glare if

there is a potential for visual impairment or discomfort due to reflective spot glare on:

- Potentially affected streets;
- Public open spaces; and
- Pedestrian areas.

Furthermore, projects must consider the potential for solar heat buildup in any nearby buildings receiving reflective sunlight from the building, if applicable.

The exterior building materials have not yet been finalized for the Project, however, it is not anticipated that highly-reflective glass will be employed in any of the building facades. The Project will be designed to minimize the potential for solar glare that could adversely impact traffic safety along nearby roadways and solar heat gain in nearby buildings through the consideration of low/non-reflecting exterior building materials as design progresses. The absence of solar glare impacts will be confirmed during the design review process in connection with the selection of façade materials.

6.5 Air Quality

This section presents an overview of the air quality assessment for the Project. The purpose of the air quality assessment is to demonstrate that the Project will not result in a violation of applicable local, state, and federal air quality standards. A quantitative microscale analysis was conducted to show that carbon monoxide (CO) concentrations at study area intersections will not violate the National Ambient Air Quality Standards (NAAQS). A qualitative discussion of the mesoscale/regional air quality impacts is also included below.

6.5.1 Microscale Analysis

This section presents an overview of and the results for the microscale ("hot spot") air quality assessment conducted for the Project. The purpose of the air quality assessment is to demonstrate that the Project satisfies applicable local, state and federal requirements, and to determine whether it complies with the 1990 Clean Air Act Amendments (CAAA) following the local and the U.S. Environmental Protection Agency (EPA) policies and procedures.

The microscale air quality assessment conducted for the Project includes a localized analysis of CO concentrations. The microscale analysis evaluated CO concentrations from vehicles traveling through congested intersections in the area around the Project Site under the future conditions. The results from this evaluation were compared to the NAAQS.

Background

The CAAA resulted in states being divided into attainment and nonattainment areas, with classifications based upon the severity of their air quality problems. Air quality

control regions are classified and divided into one of three categories: attainment, nonattainment and maintenance areas depending upon air quality data and ambient concentrations of pollutants. Attainment areas are regions where ambient concentrations of a pollutant are below the respective NAAQS; nonattainment areas are those where concentrations exceed the NAAQS. A maintenance area is an area that used to be nonattainment, but has demonstrated that the air quality has improved to attainment. After 20 years of clean air quality, maintenance areas can be re-designated as attainment areas. Projects located in maintenance areas are required to evaluate their CO concentrations on the NAAQS.

The Project is located in the City of Boston, which under the EPA designation, is a CO maintenance area. As such, CO concentrations need to be evaluated for this Project.

Air Quality Standards

The EPA has established the NAAQS to protect public health. Massachusetts has adopted similar standards as those set by the EPA. Table 6-3 presents the NAAQS for carbon monoxide.

Table 6-3 National Ambient Air Quality Standards

	Primary Standards		
Pollutant	**Averaging Time**	**Level**	**Form**
Carbon Monoxide	1-hour	35 ppm (40 mg/m^3)	Not to be exceeded more than once per year
	8-hour	9 ppm (10 mg/m^3)	

Carbon monoxide is directly emitted by motor vehicles, and the predominant source of air pollution anticipated from typical developments is emissions from project-related motor vehicle traffic. A product of incomplete combustion, CO is a colorless and odorless gas that prevents the lungs from passing oxygen to the blood stream. According to the EPA, 60 percent of CO emissions result from motor vehicle exhaust, while other sources of CO emissions include industrial processes, non-transportation fuel combustion and natural sources (i.e., wildfires). In cities, as much as 95 percent of CO emissions may come from automobile exhaust.[1]

Background Concentrations

The total CO concentrations that receptor locations will experience include background concentrations from other nearby emission sources. Background concentrations are ambient pollution levels from other stationary, mobile, and area sources. MassDEP maintains a network of air quality monitors to measure background CO concentrations. Background CO concentrations are determined by choosing the maximum of the 2nd-highest annual values from the previous three years. Looking at the air quality monitors closest to and most representative of the

[1] U.S. EPA. 2003. National air quality and emissions trends report – 2003 special studies edition. EPA/454/R-03/005. Research Triangle Park, NC.

Project Site (the Kenmore Square monitor for the years 2014-2015 and Harrison Avenue for 2016)[2], the CO background values are 2.4 ppm for the 1-hour averaging time and 1.2 ppm for the 8-hour averaging time. These values are much less than the 1-hour and 8-hour NAAQS. The background values are presented in Table 6-4.

Table 6-4 Air Quality Background Concentrations

	Background Concentrations		NAAQS	
Pollutant	**Level**	**Averaging Time**	**Level**	**Averaging Time**
Carbon Monoxide	1.2 ppm	8-hour	9 ppm	8-hour
	2.4 ppm	1-hour	35 ppm	1-hour

Monitoring Location: Kenmore Square, Boston, MA. Years 2014-2015 (Station discontinued in 2016). Harrison Avenue, Boston, MA. Year 2016.

The potential CO concentrations from motor vehicle traffic related to the Project will be considered in conjunction with these background concentrations to demonstrate that the Project will comply with the NAAQS Standards.

BPDA Development Review Guidelines

The BPDA Development Review Guidelines require "a microscale analysis predicting localized carbon monoxide concentrations should be performed, including identification of any locations projected to exceed the National or Massachusetts Ambient Air Quality Standards, for projects in which:

- Project traffic would impact intersections or roadway links currently operating at Level of Service ("LOS") D, E, or F or would cause LOS to decline to D, E, or F; or
- Project traffic would increase traffic volumes on nearby roadways by 10 percent or more (unless the increase in traffic volume is less than 100 vehicles per hour); or
- The Project will generate 3,000 or more new average daily trips on roadways providing access to a single location."

As presented in Chapter 5, *Transportation*, the traffic analysis indicates that the LOS will remain at or decline to D, E, or F under the build condition at the following two signalized study intersections within the study area:

1. Washington Street at Commonwealth Avenue; and
2. Washington Street at Corey Road.

As such, a microscale analysis was conducted pursuant to the BPDA Development Review Guidelines. Refer to Figure 6.3 for the location of the air quality study area intersections and receptors.

[2] The Kenmore Square monitoring station ceased CO monitoring in 2016. Harrison Avenue is the next closest station.

Microscale Analysis Methodology

The modeling for the microscale analysis followed the EPA's guidelines[3]. The traffic data was evaluated and locations were selected based on the requirements of the BPDA Development Review Guidelines and the EPA modeling guidance.

The microscale analysis calculates maximum 1-hour and 8-hour CO concentrations in the Project area during the peak CO season (winter). EPA's Office of Transportation and Air Quality (OTAQ) has developed the Motor Vehicle Emission Simulator ("MOVES2014a"). Emission factors were developed using the MOVES2014a program, and were combined with the traffic data in EPA's computer model CAL3QHC Version 2.0[4] model to calculate the CO worst-case concentrations. EPA's CAL3QHC is an air quality dispersion model that applies emission factors obtained from MOVES2014a to projected traffic conditions in order to obtain localized pollutant concentrations at real-world locations.

The microscale analysis utilized the traffic (volumes and speeds) and emission factor data for the 2022 No Build and 2022 Build Conditions. These data were incorporated into air quality models and demonstrate that the Project will meet the CAAA criteria. The microscale analysis calculated CO concentrations at congested intersections near the Project Site under the No Build and Build conditions for comparison purposes. The worst-case CO concentrations were added to the background levels to determine if the Project's concentrations complied with the NAAQS.

Receptor locations were selected near the congested intersections based upon areas where the public may have access. The intersection receptors were placed at the edge of the roadway, but not closer than 10 feet (3 meters) from the nearest travel lane; as required by the EPA. The results calculated at these receptor locations represent the highest concentrations at each intersection. Receptor locations were grouped into receptor quadrants to simplify the presentation of the results (Figure 6.3). Receptor locations farther away from the intersections will have lower concentrations because of the dispersion characteristics. The receptor locations that are along other portions of the roadways in the study area are expected to have lower concentrations than the receptor locations at the intersection as the emission rates for vehicles traveling along these roadways are much lower than the emission rates for vehicles queuing at intersections.

Emission Rates

All the vehicle emission factors used in the microscale analysis were obtained using the EPA's MOVES2014a emissions model. MOVES2014a is EPA's latest motor vehicle emissions model for state and local agencies to estimate pollutants from cars, trucks,

[3] Guideline for Modeling Carbon Monoxide from Roadway Intersection, United States Environmental Protection Agency, Office of Air Quality Planning and Standards, EPA-454/R-92-005, November 1992.

[4] User's Guide to CAL3QHC Version 2.0: A Modeling Methodology for Predicting Pollutant Concentrations Near Roadway Intersections, US Environmental Protection Agency, Office of Air Quality Planning and Standards, Technical Support Division; Research Triangle Park, NC; EPA-454/R-92-005; November 1992

buses, and motorcycles. MOVES2014a calculates CO emission factors from motor vehicles for free-flow conditions in grams per vehicle mile and for idling conditions in grams per vehicle hour. The emission rates used in this study were developed with data provided by MassDEP. The emission factors for the microscale analysis were based upon a morning peak hour on a typical weekday in the winter for Suffolk County and were calculated for idle and free-flow conditions based upon roadway travel speeds and grades.

The emissions calculated for this air quality assessment include Tier 3 emission standards, which is an EPA program that sets new vehicle emissions standards, including lowering the sulfur content of gasoline, heavy-duty engine, and vehicle GHG regulations (2014-2018), and the second phase of light-duty vehicle GHG regulations (2017-2025). It also includes Massachusetts specific conditions, such as the state vehicle registration age distribution and the statewide Inspection and Maintenance ("I/M") Program. These stringent emissions regulation programs often result in smaller emissions inventories with the passage of time when comparing similar scenarios.

Traffic Data

The study evaluates the microscale air quality impacts of the vehicular traffic associated with the Project on the environment. The vehicle traffic represents the worst-case conditions, which includes the increase in traffic volumes due to specific developments proposed for the study area, projected traffic growth over time, and future traffic associated with the Project. The air quality study utilizes traffic and emissions data for the future No-Build and future Build Conditions. These data are incorporated into the EPA air quality models to generate air pollutant concentrations that demonstrate whether or not the Project would have air quality impacts. The scenarios modeled include:

- **No-Build Condition (2022):** reflects background growth associated with other planned projects and general background regional growth.
- **Build Condition (2022):** assuming the 2022 No Build Condition background growth with the Project fully constructed and in operation.

Traffic data (volumes, delays, and speeds) was developed for each analysis condition. The traffic volumes and level of-service for the study area were evaluated and based on the BPDA Development Review Guidelines.

The two signalized intersections studied represent the worst delays and volumes in the study area. The analysis considered the evening peak hour traffic conditions as intersection volumes and delays are generally larger. Concentrations at other intersections in the study area are expected to be smaller than those calculated at these two intersections.

Microscale Air Quality Study Results

The CO concentrations for each intersection under the No-Build and Build Conditions are presented in Table 6-5 and Table 6-6. The results show that there are

minimal to no increases for 1-hour and 8-hour CO concentrations between the 2022 No Build and Build conditions due to the minor traffic volume increase and minimal intersection delays experienced at the study intersections. The 1-hour CO concentrations ranged from 2.6 to 2.7 ppm, and the 8-hour CO concentrations ranged from 1.3 to 1.4 ppm for the 2022 No-Build and Build Conditions. The results of the microscale analysis demonstrate that the 2022 No Build and Build CO concentrations (both 1-hour and 8-hour values) for the Project are well below the NAAQS.

Table 6-5 Predicted Maximum 1-Hour CO Concentrations (Parts Per Million)[1, 2]

			1-Hour CO Concentrations (ppm)	
No.	**Intersection**	**Receptor Quadrant[3]**	**2022 No-Build**	**2022 Build**
1	Washington Street at Corey Road	East	2.7	2.7
		North	2.7	2.7
		South	2.6	2.6
		West	2.6	2.6
2	Washington Street at Commonwealth Avenue	North	2.6	2.6
		Northeast	2.6	2.7
		Northwest	2.6	2.6
		South	2.7	2.7
		Southeast	2.6	2.6
		Southwest	2.6	2.6

Source: VHB, Inc.

1 See Figure 6.3 for intersection and receptor locations.

2 The concentrations are expressed in parts per million (ppm) and include a 1-hour background concentration of 2.4 ppm. The 1-hour NAAQS for CO is 35 ppm.

3 Concentrations represent maximum concentrations within the grouping of receptors placed in the respective directions of each intersection.

Table 6-6 Predicted Maximum 8-Hour CO Concentrations (Parts Per Million)[1, 2]

			8-Hour CO Concentrations (ppm)	
No.	**Intersection**	**Receptor[3]**	**2023 No-Build**	**2023 Build**
1	Washington Street at Corey Road	East	1.4	1.4
		North	1.4	1.4
		South	1.3	1.3
		West	1.3	1.3
2	Washington Street at Commonwealth Avenue	North	1.3	1.3
		Northeast	1.3	1.4
		Northwest	1.3	1.3
		South	1.4	1.4
		Southeast	1.3	1.3
		Southwest	1.3	1.3

Source: VHB, Inc.

1 See Figure 6.3 for intersection and receptor locations.

2 The concentrations are expressed in parts per million (ppm) and include an 8-hour background concentration of 1.2 ppm and a persistence factor of 0.7. The 8-hour NAAQS for CO is 9 ppm.

3 Concentrations represent maximum concentrations within the grouping of receptors placed in the respective directions of each intersection

Conclusion of Microscale Analysis

The air quality evaluation demonstrated that the development of the Project will not result in adverse localized air quality impacts. The microscale air quality analysis evaluated Project-related vehicles traveling through congested intersections in the study area. This analysis demonstrates that all existing and future carbon monoxide concentrations are below the NAAQS. Specifically:

- All the one-hour CO concentrations ranged from 2.6 to 2.7 ppm and are well below the CO NAAQS of 35 ppm.
- All the eight-hour CO concentrations ranged from 1.3 to 1.4 ppm and are below the CO NAAQS of 9 ppm.

The microscale study demonstrates that the Project conforms to the CAAA and the State Implementation Plan (SIP) because:

- No violation of the NAAQS is expected to be created.
- No increase in the frequency or severity of any existing violations (none of which are related to this development) is anticipated to occur.
- No delay in attainment of any NAAQS is expected to result due to the implementation of the proposed action.

Based upon the analysis presented herein and the conclusions summarized above, no significant adverse air quality impacts from the Project are anticipated on the microscale level.

6.5.2 Mesoscale Air Quality Analysis

The purpose of the mesoscale analysis is to estimate the area-wide emissions of VOC and NOx during a typical day in the peak ozone season (summer) consistent with the requirements of the SIP. A mesoscale analysis evaluates the change in VOC and NOx emissions from average daily traffic volumes and vehicle emission rates. To demonstrate compliance with the SIP criteria, the air quality study must show the Project's change in daily (24-hour period) VOC and NOx emissions.

The BPDA requires a mesoscale air quality analysis if a project produces 10,000 or more vehicle trips per day. The Project is not anticipated to generate over 10,000 or more vehicle trips per day, therefore this analysis is not required for the BPDA and no mesoscale air quality impacts are anticipated.

6.6 Noise

The noise assessment evaluated the potential noise impacts associated with the Project's activities, including mechanical equipment and loading activities. This section discusses the fundamentals of noise, City of Boston's noise standards, noise analysis methodology, existing ambient sound levels, and potential future sound levels associated with the Project's operations.

The assessment demonstrates that the proposed Project will comply with City of Boston noise regulations. Based on preliminary design, the Project's operations will have no adverse noise impacts at nearby sensitive receptor locations.

6.6.1 Fundamentals of Noise

Noise is defined as unwanted or excessive sound. Sound becomes unwanted when it interferes with normal activities such as sleep, communication, work, or recreation. How people perceive sound depends on several measurable physical characteristics, which include the following:

- **Intensity** - Sound intensity is often equated to loudness.
- **Frequency** - Sounds are comprised of acoustic energy distributed over a variety of frequencies. Acoustic frequencies, commonly referred to as tone or pitch, are typically measured in Hertz. Pure tones have all their energy concentrated in a narrow frequency range.

Sound levels are most often measured on a logarithmic scale of decibels (dB). The decibel scale compresses the audible acoustic pressure levels which can vary from the threshold of hearing (zero dB) to the threshold of pain (120 dB). Because sound levels are measured in dB, the addition of two sound levels is not linear. Adding two equal sound levels creates a three dB increase in the overall level. Research indicates the following general relationships between sound level and human perception:

- A 3-dB increase is a doubling of acoustic energy and is the threshold of perceptibility to the average person.

› A 10-dB increase is a tenfold increase in acoustic energy but is perceived as a doubling in loudness to the average person.

The human ear does not perceive sound levels from each frequency as equally loud. To compensate for this phenomenon in perception, a frequency filter known as A weighted [dB(A)] is used to evaluate environmental noise levels. Table 6-7 presents a list of common outdoor and indoor sound levels.

Table 6-7 Common Outdoor and Indoor Sound Levels

Outdoor Sound Levels	Sound Pressure (μPa)*		Sound Level dB(A)**	Indoor Sound Levels
	6,324,555	-	110	Rock Band at 5 m
Jet Over Flight at 300 m		-	105	
	2,000,000	-	100	Inside New York Subway Train
Gas Lawn Mower at 1 m		-	95	
	632,456	-	90	Food Blender at 1 m
Diesel Truck at 15 m		-	85	
Noisy Urban Area—Daytime	200,000	-	80	Garbage Disposal at 1 m
		-	75	Shouting at 1 m
Gas Lawn Mower at 30 m	63,246	-	70	Vacuum Cleaner at 3 m
Suburban Commercial Area		-	65	Normal Speech at 1 m
	20,000	-	60	
Quiet Urban Area—Daytime		-	55	Quiet Conversation at 1 m
	6,325	-	50	Dishwasher Next Room
Quiet Urban Area—Nighttime		-	45	
	2,000	-	40	Empty Theater or Library
Quiet Suburb—Nighttime		-	35	
	632	-	30	Quiet Bedroom at Night
Quiet Rural Area—Nighttime		-	25	Empty Concert Hall
Rustling Leaves	200	-	20	
		-	15	Broadcast and Recording Studios
	63	-	10	
		-	5	
Reference Pressure Level	20	-	0	Threshold of Hearing

Source: Highway Noise Fundamentals. Federal Highway Administration, September 1980.

* μPA – MicroPascals, which describe pressure. The pressure level is what sound level monitors measure.

** dB(A) – A-weighted decibels, which describe pressure logarithmically with respect to 20 μPa (the reference pressure level).

A variety of sound level indicators can be used for environmental noise analysis. These indicators describe the variations in intensity and temporal pattern of the sound levels. The following is a list of common sound level descriptors used for environmental noise analyses:

› L90 is the sound level which is exceeded for 90 percent of the time during the time period. L90 is generally considered to be the ambient or background sound level.

› Leq is the A-weighted sound level, which averages the background sound levels with short-term transient sound levels. The Leq sound level accounts for varying fluctuations of sound energy during an interval and provides a uniform method for comparing sound levels that vary over time.

6.6.2 Methodology

The noise study evaluated the potential noise impacts associated with the proposed Project's operations, which include mechanical equipment and loading/service activities. The assessment included measurements of existing ambient background sound levels and a qualitative evaluation of potential noise impacts associated with the proposed mechanical equipment (such as HVAC systems) and loading/service activities. The study area was evaluated and sensitive receptor locations near the proposed Project Site were identified and examined. The proposed site layout and building design, as they relate to the loading areas and management of deliveries at the Project site were also considered. The analysis considered sound level reductions due to distance, proposed building design, and obstructions from surrounding structures.

Receptor Locations

The noise study included an evaluation of the study area to identify nearby sensitive receptor locations, which typically include areas of sleep and areas of outdoor activities. This assessment identified nine residential areas near the Project site that would have the most potential for exposure to the proposed Project's activities. As shown on Figure 6.4, the receptor locations include the following:

› These receptor locations, R1 – Washington Square Condominiums on Commonwealth Ave;
› R2 – B'nai Birth Housing on Washington Street;
› R3 – Covenant House on Washington Street;
› R4 – Patricia White Apartments on Washington Street;
› R5 – Baldwin Early Learning Center on Washington Street;
› R6 – Brighton House Rehabilitation and Nursing Center on Allston Street;
› R7 – Monarch Condominiums on Allston Street;
› R8 - Residential neighborhood on Allston Street/Melvin Avenue to the north; and
› R9 – Residential neighborhood on Bartlett Crescent to the east.

These receptor locations, selected based on land use considerations, represent the most sensitive locations near the Project Site.

6.6.3 City of Boston Noise Impact Criteria

The City of Boston has developed noise standards that establish noise thresholds deemed to result in adverse impacts. The noise analysis for the Project used these

standards to evaluate whether it is expected to generate sound levels that result in potential adverse impacts.

Under Chapter 40 Section 21 of the General Laws of the Commonwealth of Massachusetts and Title 7 Section 50 of the City of Boston Code, the Air Pollution Control Commission of the City of Boston has adopted Regulations for the Control of Noise in the City of Boston. These regulations establish maximum allowable sound levels based upon the land use affected by the proposed development. Table 6-8 summarizes the allowable sound levels that should not be exceeded.

For a residential zoning district, the maximum noise level affecting residential uses shall not exceed the Residential Noise Standard. The residential land use noise standard is 60 dB(A) for daytime periods (7:00 AM to 6:00 PM) and 50 dB(A) for nighttime conditions (6:00 PM to 7:00 AM).

Table 6-8 City of Boston Noise Standards by Zoning District, dB(A)

Land Use Zone District	Daytime (7:00 AM – 6:00 PM)	All Other Times (6:00 PM – 7:00 AM)
Residential	60	50
Residential/Industrial	65	55
Business	65	65
Industrial	70	70

Source: Regulations for the Control of Noise in the City of Boston, Air Pollution Control Commission.

6.6.4 Existing Noise Conditions

Noise measurements were conducted along the property line of the Project Site to establish existing ambient sound levels representative of the nearby sensitive receptor locations. The existing sound levels were measured using Type 1 sound analyzers (Larson Davis 831 and SoundExpert LxT). Measurements were conducted between December 6, 2017 and December 7, 2017. Measurements were conducted at two locations, shown in Figure 6.4, for approximately a 24-hr period to capture sound levels representative of typical weekday. The existing measured sound level data are summarized in Table 6-9.

Table 6-9 Existing Ambient Sound Levels, dB(A)

	City of Boston Residential District Noise Standard		Measured Leq Sound Levels	
Monitoring Location	Daytime	Nighttime	Daytime	Nighttime
M1 – Washington Street	60	50	**60**-**67**	**51**-**62**
M2 – Allston Street	60	50	54-**69**	47-**58**

Source: VHB

Note: Refer to Figure 6.4 for noise monitoring locations.
Measured sound levels represent hourly Leq levels.

The measured Leq sound levels range from approximately 54 dB(A) to approximately 69 dB(A) during the daytime period in the surrounding neighborhoods. During the

nighttime period, the neighborhoods experience sound levels ranging from approximately 47 dB(A) to approximately 62 dB(A). The result of the noise monitoring program indicates that the daytime sound levels in the surrounding neighborhoods adjacent to the Project Site are currently exceeding the City of Boston's standards for a Residential District. During the daytime period, the measured sound levels data were predominantly vehicles traveling on the surrounding roadways, such as Washington Street and Allston Street. The measured sound levels during the nighttime also exceeds the City of Boston's nighttime standards. The nighttime period sound levels were generally associated with similar sources.

6.6.5 Future Noise Conditions

The noise analysis assessed the potential noise impacts associated with the Project's mechanical equipment and loading activities. The analysis evaluated the potential sound level impacts at the nearby areas.

Mechanical Equipment

Since the proposed Project is in the early stages of the design process, the specific details related to the final selection of mechanical equipment are not confirmed at the time of this noise assessment. Based on preliminary design plans, the anticipated mechanical equipment associated with the proposed Project may include the following:

- Energy recovery air handling units;
- Heating, ventilation and air conditioning (HVAC) units; and
- Emergency generators.

The Project will incorporate noise attenuation measures as necessary to comply with City of Boston's noise criteria at the sensitive receptor locations. During the design and selection process, the mechanical equipment will be strategically located to minimize potential noise impacts, such as setting on the building's rooftop. The appropriate low-noise mechanical equipment will be selected, including potential noise mitigation measures, such as acoustical enclosures and/or acoustical silencers.

The rooftop mechanical equipment would be strategically located on the rooftop to minimize the impacts to the surrounding sensitive receptor locations. Noise attenuation can be achieved by utilizing the building structure. The proposed residential building heights range from approximately 82 feet tall on the western side and approximately 74 feet on the eastern side. These proposed heights would be equal to or greater than the heights of the surrounding sensitive receptors. The proposed building rooftops could serve as a barrier by breaking the direct line of exposure between the potential rooftop noise sources and nearby receptor locations. Additionally, acoustical screening walls or penthouse surrounding the mechanical equipment would be considered during the design process to minimize the potential noise impacts at nearby sensitive areas. As such, the sound levels

associated with the Project's mechanical equipment are expected to be insignificant at the surrounding sensitive receptor locations.

Emergency generators are generally considered for life safety purposes, such as emergency exit lighting. The proposed Project will be required to adhere to MassDEP's regulations that require such equipment to be certified and registered when installed. As part of the air permitting process, proposed generators will be required to comply with additional noise requirements described in MassDEP regulations under the Codes of Massachusetts Regulations (310 CMR 7.00). At the proper time during the construction phase, the Proponent will submit the appropriate permit application or certification to MassDEP, which would include noise mitigation measures, such as acoustic enclosures and exhaust silencers as necessary to meet MassDEP's noise criteria.

Service and Loading Activities

Loading activities are expected to occur in designated loading areas at the ground/lower level of the Project (Figure 1.5). The loading area is expected to be located internally, below the proposed parking structure and buffered by the proposed residential buildings. The loading activities will be managed so that service and loading operations do not impact traffic on the adjacent roadways. Since loading activities will be enclosed and will be managed, potential noise impacts to nearby sensitive receptor locations are expected to be negligible.

6.6.6 Conclusion of Noise Impact Assessment

The noise analysis determined that the sensitive receptor locations near the Project Site currently experience sound levels above the City of Boston's noise standards during both the daytime and nighttime periods. Based on preliminary design, the proposed Project's operations will have no adverse noise impacts at nearby sensitive receptor locations. During the design of the proposed buildings, low noise equipment, and a mechanical penthouse and/or acoustical screening wall along the rooftop would be considered to minimize sound levels at nearby sensitive receptor locations.

6.7 Water Quality

The Project will not introduce additional peak flows, pollutants, or sediments that would potentially impact the receiving waters of the local BWSC stormwater drainage system. Through the implementation of improved stormwater management practices, the Proposed Project will comply with the 2008 MassDEP Stormwater Management Policy and Boston Water and Sewer Commission (BWSC) standards. The Project will improve the quality and quantity of site stormwater runoff compared to existing conditions by collecting and infiltrating one (1) inch of rainfall over all impervious areas, including proposed streets and sidewalks.

The Proponent will assist in educating the public and further improving the water quality of local water bodies installing permanent plaques that bear the warning "Don't Dump - Drains to Charles River" adjacent to all existing, modified, and new catch basins.

6.8 Flood Hazard

As discussed in Section 4.5 of Chapter 4, *Sustainability/Green Building and Climate Change Resiliency*, the Project Site is located outside of the 100-year flood zone and is approximately 4,100 feet from the closest open body of water. Therefore, extreme flooding and sea level rise are not anticipated to impact the Project.

6.9 Geotechnical/Groundwater

6.9.1 Subsurface Conditions

The subsurface conditions described herein are based on the recent explorations by Sanborn Head the above-referenced historic explorations. At the exploration locations, the surface materials generally consisted of about one (1) to six (6) inches of asphalt, underlain by approximately two (2) to eight (8) feet of urban fill or blast rock fill. The urban fill typically consists of fine to coarse sand with varying amounts of gravel, silt, brick and ash. The top of weathered bedrock was encountered at depths ranging between approximately 2.5 to 12.5 feet below ground surface (bgs) and generally slopes from west to east (between approximately elevation 142 and 122.5 feet, from west to east, respectively) based on drilling observations and drilling rig refusals (including direct-push rigs, which may not be indicative of competent rock).

Intact bedrock, where cored, was classified as argillite, sandstone and conglomerate. Rock Quality Designations from the recent explorations ranged from 0 to 13 percent. Bedrock quality was typically moderately to severely weathered and with close to very closely spaced near horizontal to near-vertical joints/fractures. The thickness of the weathered zone was typically at least several feet and should be expected to vary across the Project Site; thicker weathered zones should be anticipated in localized areas.

Where encountered, groundwater was observed at depths ranging between approximately three (3) to greater than eight (8) feet below the ground surface, corresponding to approximately El. 128 to 141, from east to west across the Project Site, respectively. It is anticipated that the groundwater elevation will typically be present at or near the weathered rock interface.

It should be noted that groundwater levels will vary depending on seasonal variations in temperature and precipitation, and may also be influenced by nearby utilities and structures, and other factors that differ from conditions at the time the measurements were made.

6.9.2 Foundations

We anticipate foundations will consist of shallow spread footings and wall footings to transmit foundation loads into the underlying soil and/or bedrock. The lowest level is anticipated to be a slab-on-grade overlying an underdrain system to relieve hydrostatic pressures.

6.9.3 Excavation and Support

The excavation will require removal of soil and rock to be excavated and disposed of off-site. Temporary excavation support may be required in areas where the depth to bedrock is greater or where existing structures, such as sidewalks and retaining walls need to be supported.

Groundwater dewatering is anticipated to be required during construction to maintain a dry and stable excavation.

6.10 Solid Waste and Hazardous Materials

In order to evaluate potential hazardous materials impacts for the Project, a desktop review of MassDEP records pertaining to oil and/or hazardous materials ("OHM") was conducted via the Online Searchable Sites Database. In addition, the MassDEP database of permitted active and closed solid waste landfills was searched in order to determine whether solid waste may have been historically disposed on-site. The results of this desktop review as well as findings related to the proposed construction are presented in the following sections.

6.10.1 DEP Online Database Review Results

Based on a review of the MassDEP database, two documented releases of OHM were identified within the project area:

› In 1989, MassDEP approved the excavation of oil-contaminated soil discovered during the removal of a former 8,000-gallon fuel oil underground storage tank (UST), previously installed in 1951, which was located near the center of the Project Site and along the front side of the supermarket building. The release was assigned Release Tracking Number (RTN) 3-2000 in April 1989. Following the removal of soil and rock from the tank grave and based on the results of subsequent subsurface investigations, the regulatory status for this release was listed as "Not a Disposal Site" in 1996. However, it should be noted that excavations conducted at the center of the Project Site to facilitate this investigation indicated the presence of ash, cinder, brick, and other debris indicative of urban fill. Reportedly, asbestos material and petroleum constituents associated with the ash and cinder fill were identified during these historical assessments. Groundwater did not exhibit petroleum impacts in excess of the regulatory standards in effect at the time.

- A second release at the Project Site was assigned RTN 3-30172 in 2012. According to the Class A-2 Response Action Outcome (RAO) Statement prepared by Terracon in 2013, lead, arsenic and polycyclic aromatic hydrocarbons (PAHs) in soil were discovered at the Project Site during test pit activities conducted to pre-characterize soils prior to installation of a subsurface infiltration basin at the center of the Project Site. During subsurface investigations, lead was detected in concentrations up to 2,660 mg/kg; the current regulatory standard is 200 mg/kg. Soil analyses also revealed the presence of ash and asphalt within the urban fill, which are likely a source of the elevated PAHs. Approximately 1,500 tons of soil was excavated during construction and exported for off-site disposal. Groundwater from two monitoring wells was sampled and tested for extractable petroleum hydrocarbons (EPH) with target PAHs, lead and arsenic. All groundwater results were below the standards in effect at the time with the exception of lead. The lead was attributed to turbidity in the sample, and the consultant did not investigate the exceedance further. Regulatory closure was achieved for the RTN 3-30172 when a Class A-2 RAO Statement was filed in 2013, which indicates that a Condition of No Significant Risk was achieved but residual contamination remains.

During the desktop review, six off-site documented releases of OHM were identified in proximity to the Project area. Three releases are associated with the former gasoline filling station located at 3-5 Washington Street (RTNs 3-4576, 3-15965, and 3-30762). Although these releases have achieved regulatory closure, based on the history of industrial use and close proximity, environmental condition on this adjacent property have the potential to impact environmental conditions within the Project area. The remaining three releases on off-site properties include a release of pipe cable oil in Washington Street (RTN 3-15483), No. 6 fuel oil from a former UST at 170 Corey Road (RTN 3-23657) and a fuel oil release at 30 Washington Street (RTN 3-3918). These releases have achieved regulatory closure and may have the potential to impact environmental conditions within the Project area.

Based on a review of the MassDEP solid waste data layers, there have been no active or closed permitted solid waste facilities located within the project area.

6.10.2 Construction Impacts

Residual contamination and/or impacted urban fill at the Project Site has the potential to impact the proposed redevelopment activities. Should a new release of OHM be identified that requires notification to the MassDEP, then any excavation activities that occur within the new release area (i.e. disposal site) boundaries would need to be conducted under a preliminary Response Action such as a Release Abatement Measure (RAM) and/or Immediate Response Action (IRA) in accordance with the Massachusetts Contingency Plan (MCP, 310 CMR 40.0000). The RAM/IRA process entails the submittal of a plan, status reports, and completion report to MassDEP, as well as public notices. Additional subsurface investigations would likely be required in order to properly characterize risk at the disposal site prior to, during, and/or following construction. All disposal sites must eventually achieve regulatory

closure (i.e. Permanent Solution); therefore, a new reportable release, if identified, would need to be managed under this MCP regulatory process.

Any soil or groundwater that requires disposal during construction must be properly characterized and managed in accordance with the applicable regulations and with the appropriate documentation such as Material Shipping Records, Bills of Lading, manifests, etc.

6.11 Construction Period

Impacts associated with the Project construction activities are temporary in nature and are typically related to truck traffic, air (dust), noise, stormwater runoff, solid waste, and vibration. The Proponent will develop a detailed Construction Management Plan (CMP) for approval by BTD prior to construction. The CMP will be developed to reflect the input of the regulatory authorities having jurisdiction over such plans, including the Boston Fire Department and BTD. The CMP will include detailed information on construction activities and timing, specific construction mitigation measures, and vehicle routing and staging to minimize impact on the surrounding neighborhood. The CMP would also include details on the following:

- Stormwater Runoff/Erosion Control
- Air Quality
- Noise
- Traffic
- Public Safety
- Rodent Control

Construction methodologies that ensure public safety and protect nearby residents will be employed. Techniques such as barricades, walkways, and signage will be used. Construction management and scheduling will minimize impacts on the surrounding environment and will include plans for construction worker commuting and parking, routing plans for trucking and deliveries, and control of noise and dust.

6.12 Rodent Control Post-Construction

During building operations, trash and solid waste removal will be handled by building management. A service contract with a professional pest control firm will be maintained to address rodent/pest control during the operational phase of the Project, as needed. In addition, no open top dumpsters will be allowed as an additional precaution to deter infestation.

Page Intentionally Left Blank

LEGEND

- PROPOSED BUILDING
- PROPOSED SHADOW
- EXISTING BUILDING
- EXISTING SHADOW
- SENSITIVE/HISTORIC SITE

0 100 200 400 Feet

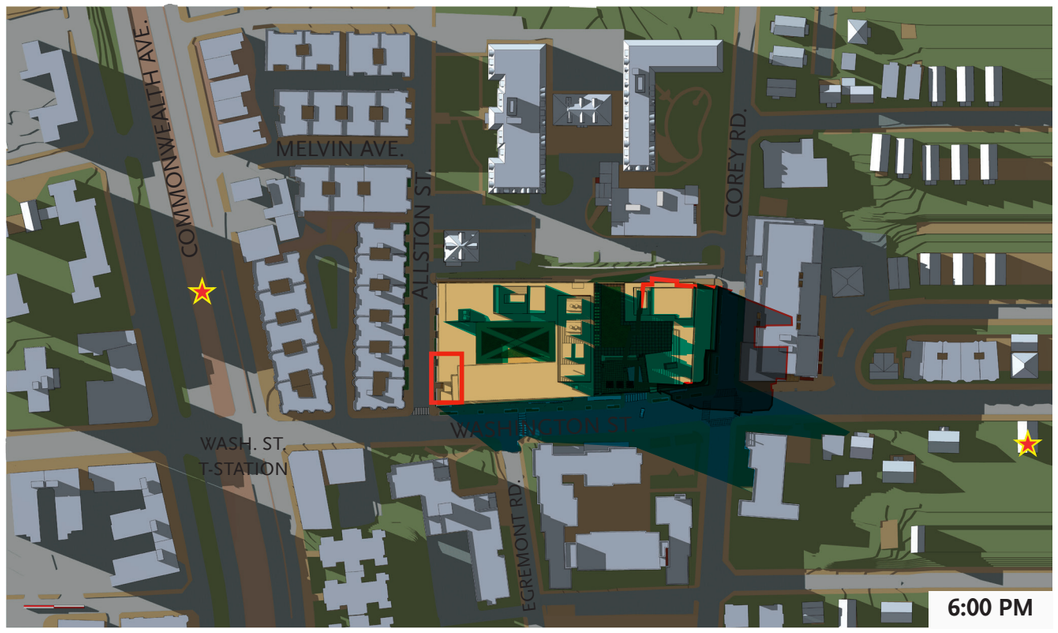
ELKUS MANFREDI ARCHITECTS

Figure 6.1a
Shadow Impact Study
March 21 - Vernal Equinox

15 Washington Street
Brighton, Massachusetts

LEGEND

- PROPOSED BUILDING
- PROPOSED SHADOW
- EXISTING BUILDING
- EXISTING SHADOW
- SENSITIVE/HISTORIC SITE



0 100 200 400 Feet

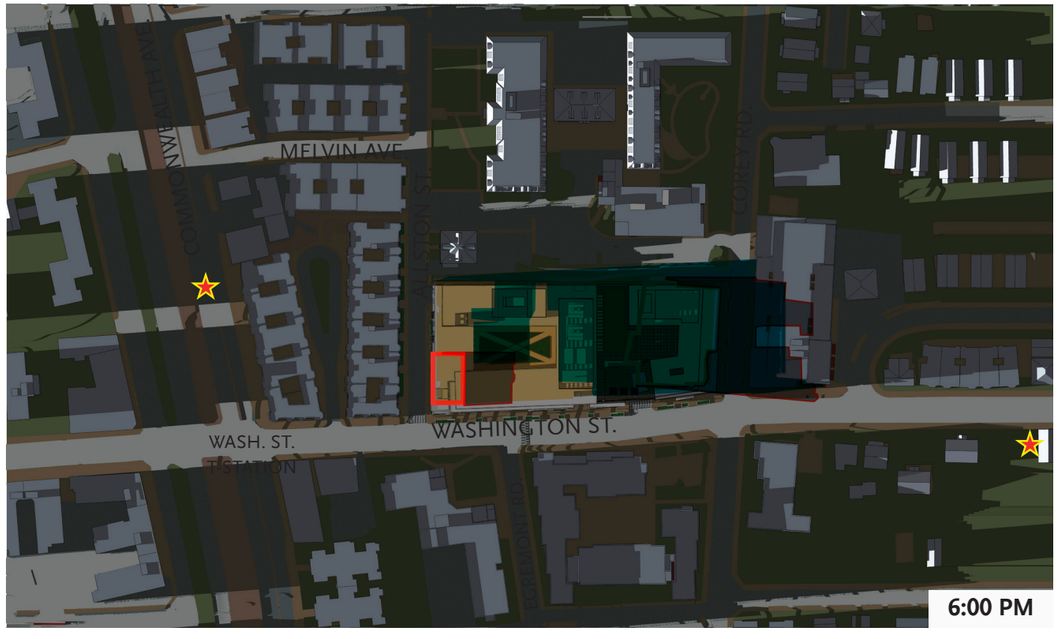
ELKUS MANFREDI ARCHITECTS

Figure 6.1b
Shadow Impact Study
June 21 - Summer Solstice

15 Washington Street
Brighton, Massachusetts

LEGEND

- PROPOSED BUILDING
- PROPOSED SHADOW
- EXISTING BUILDING
- EXISTING SHADOW
- SENSITIVE/HISTORIC SITE

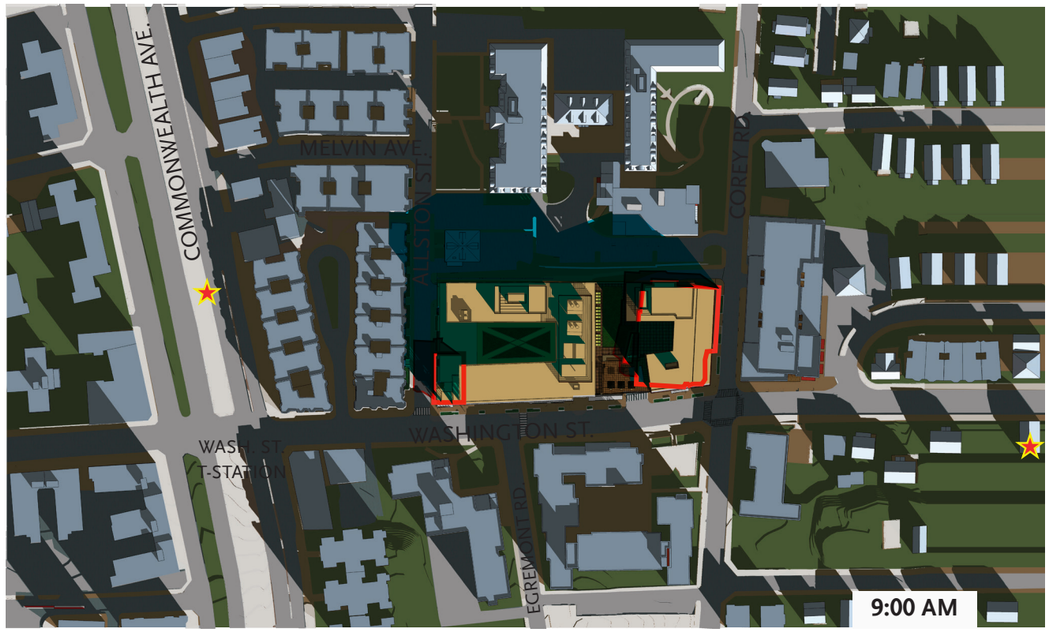


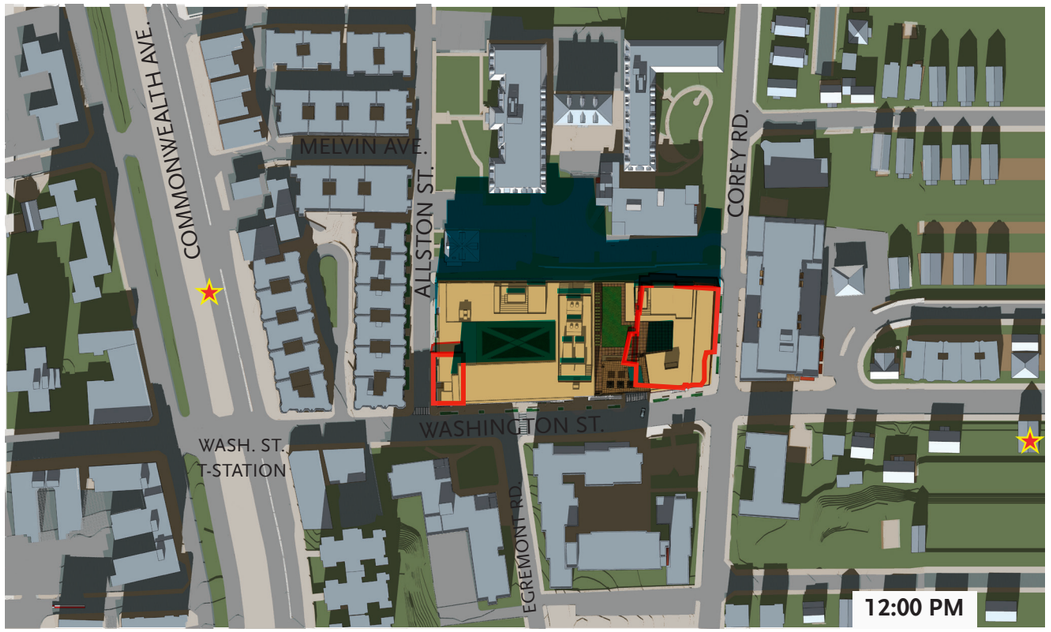
0 100 200 400 Feet

ELKUS MANFREDI ARCHITECTS

Figure 6.1c
Shadow Impact Study
September 21 - Autumnal Equinox

15 Washington Street
Brighton, Massachusetts





LEGEND

- PROPOSED BUILDING
- PROPOSED SHADOW
- EXISTING BUILDING
- EXISTING SHADOW
- SENSITIVE/HISTORIC SITE

0 100 200 400 Feet

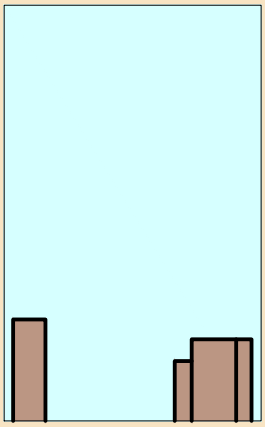
ELKUS MANFREDI ARCHITECTS

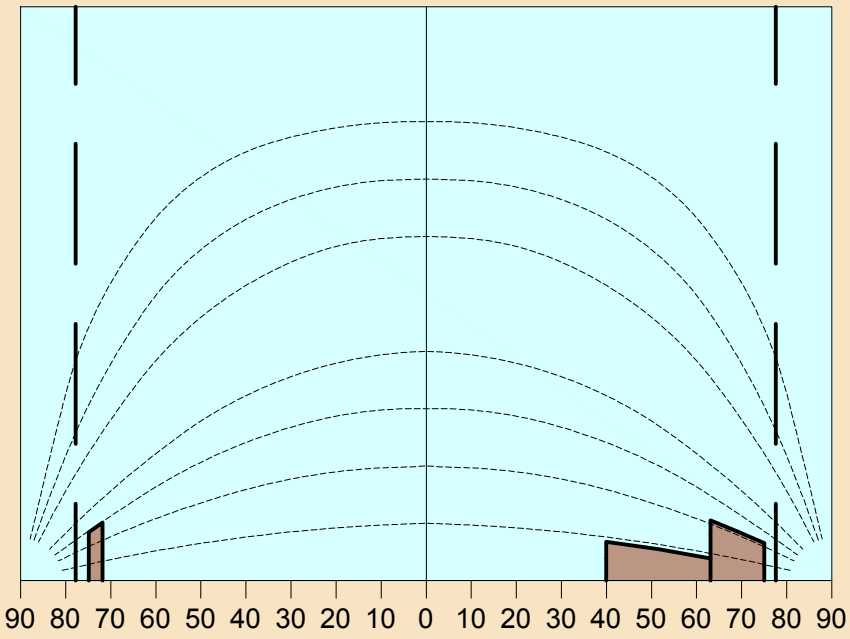
Figure 6.1d
Shadow Impact Study
December 21 - Winter Solstice

15 Washington Street
Brighton, Massachusetts

Existing

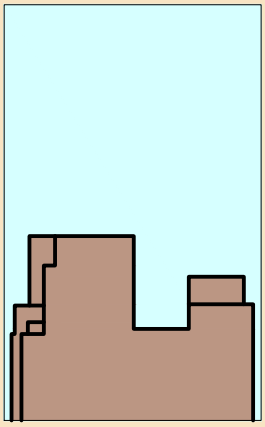
Obstruction of
Skyplane = 4.5%





Proposed

Obstruction of
Skyplane = 59.7%



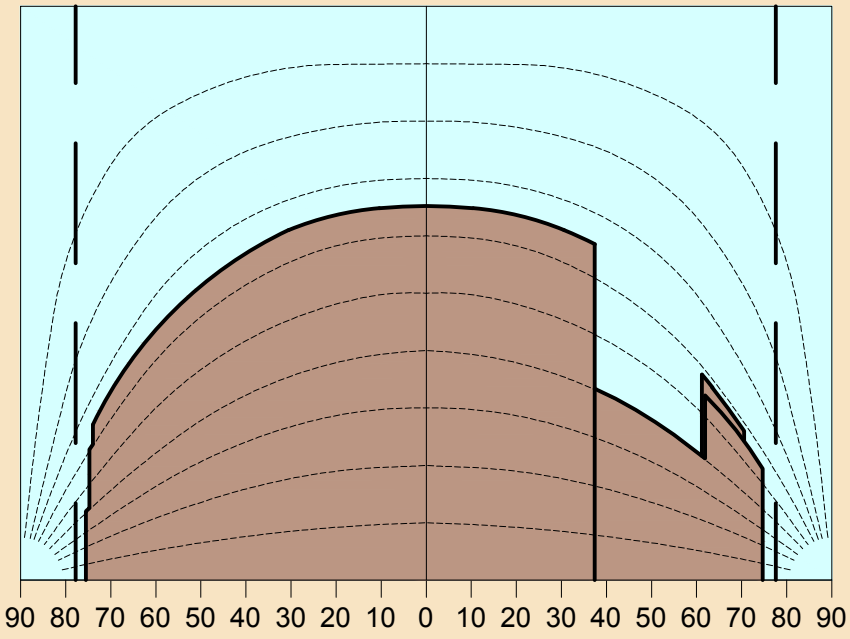


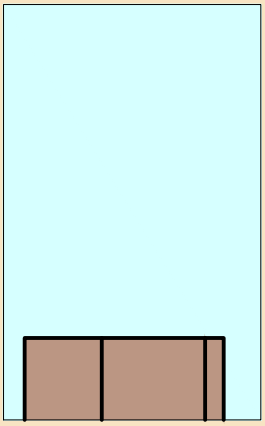
Figure 6.2a

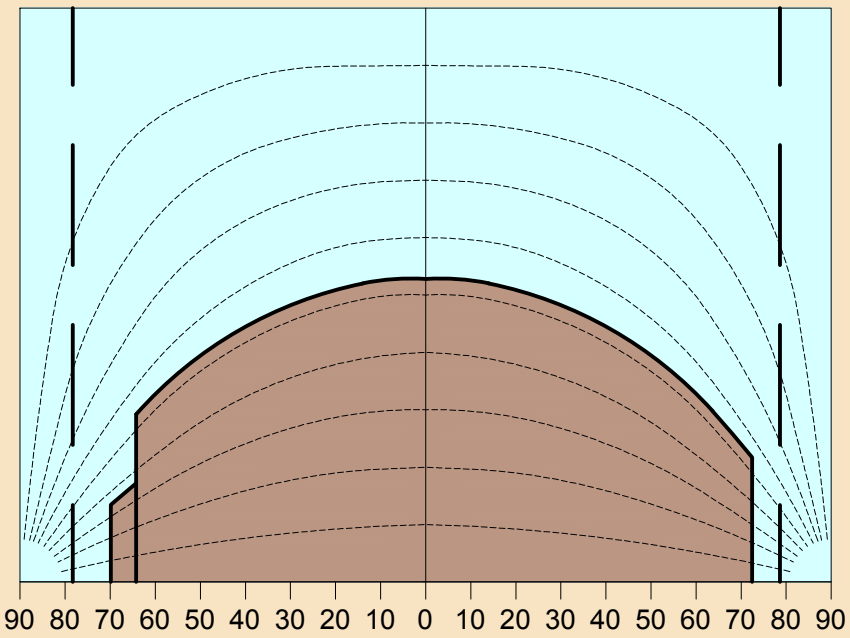
Daylighting Analysis
Center of Washington Street

15 Washington Street
Brighton, Massachusetts

Existing

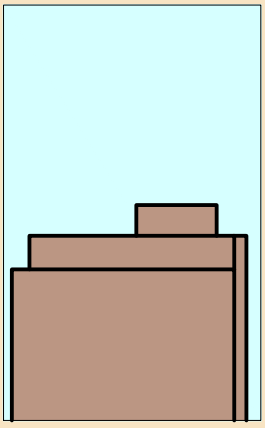
Obstruction of
Skyplane = 47.7%





Proposed

Obstruction of
Skyplane = 68.3%



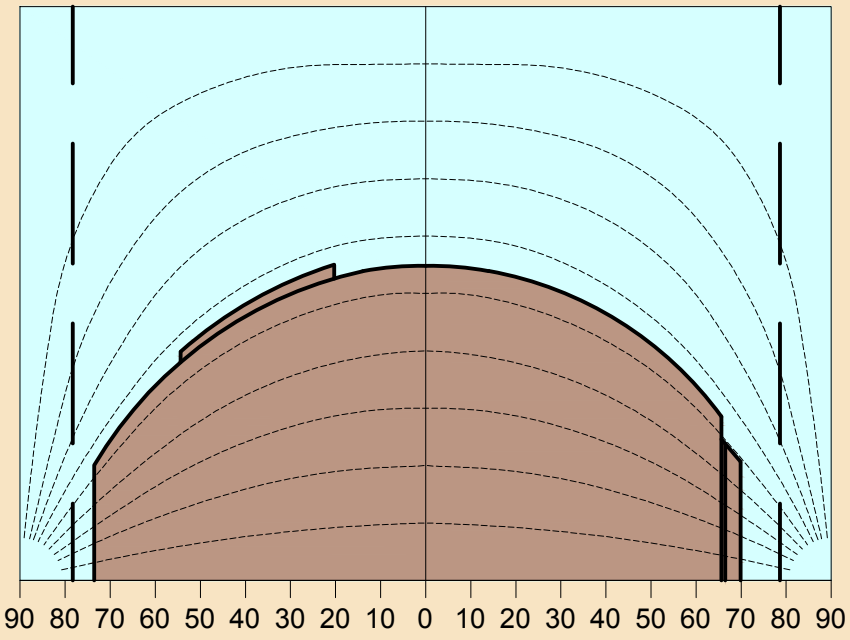


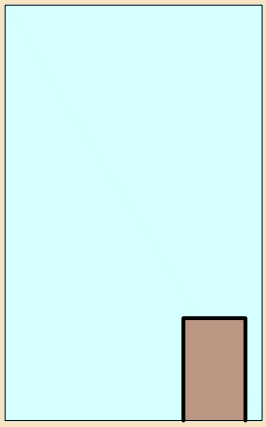
Figure 6.2b

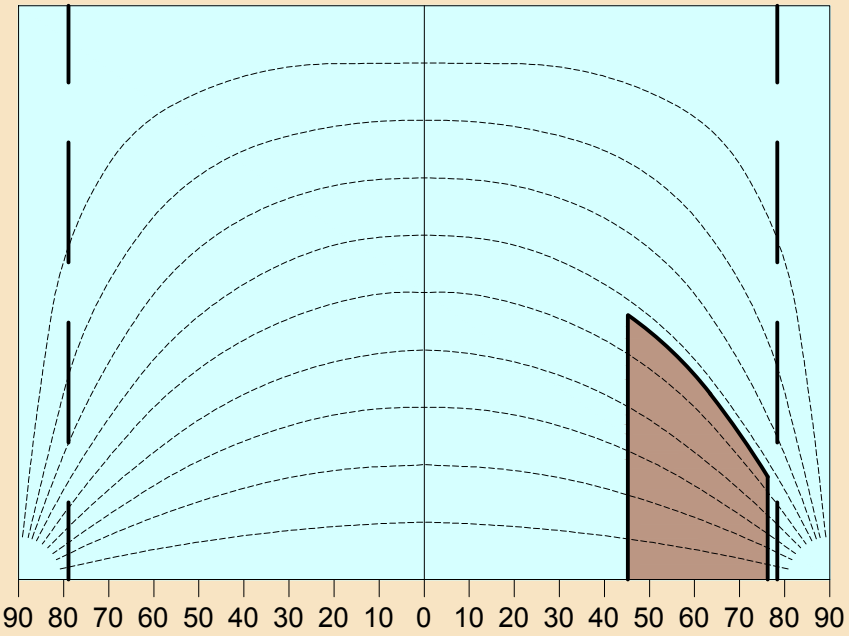
Daylighting Analysis
Center of Corey Road

15 Washington Street
Brighton, Massachusetts

Existing

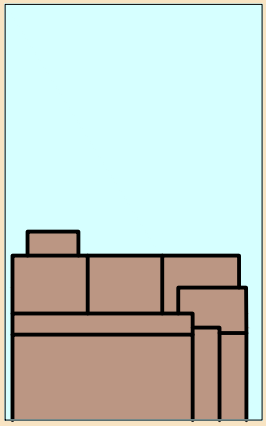
Obstruction of
Skyplane = 11.2%





Proposed

Obstruction of
Skyplane = 63.8%



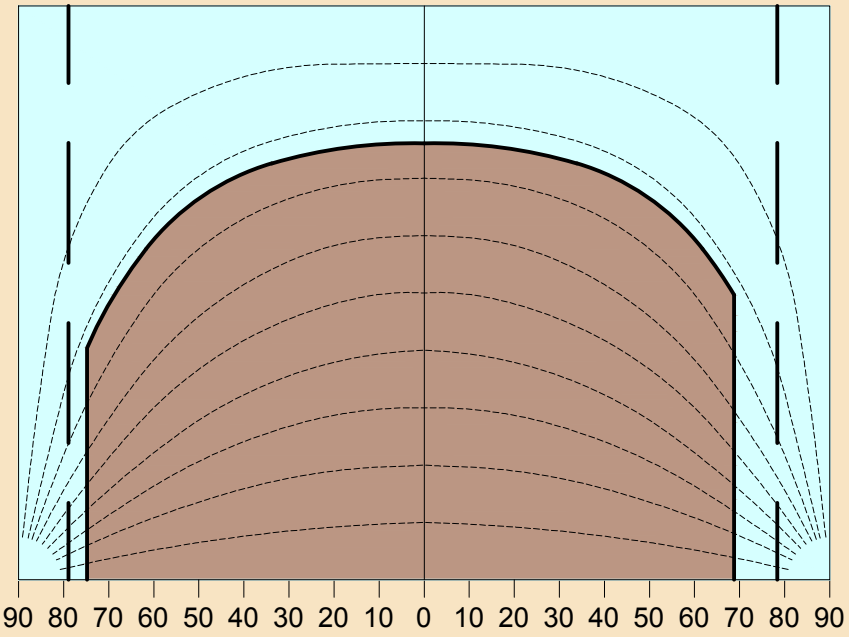
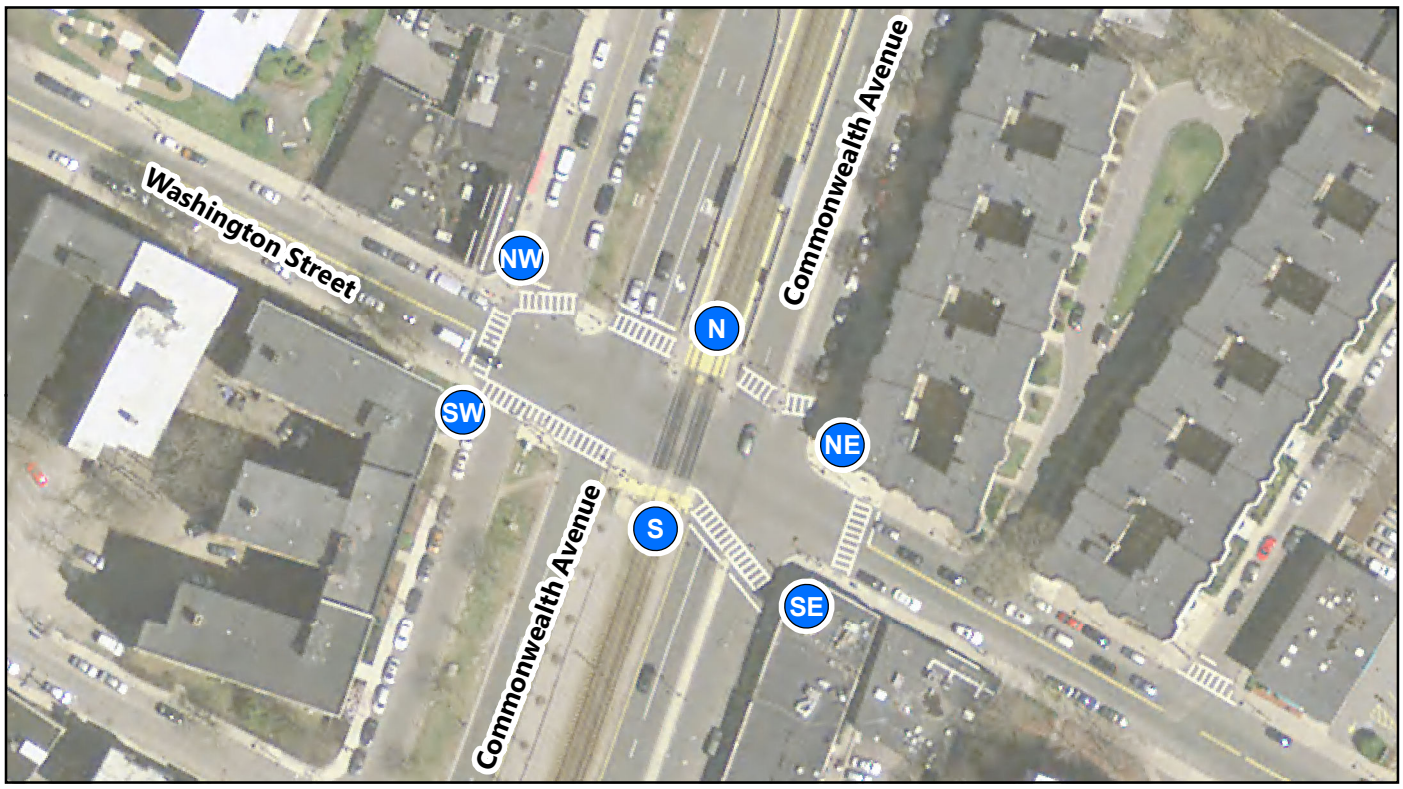


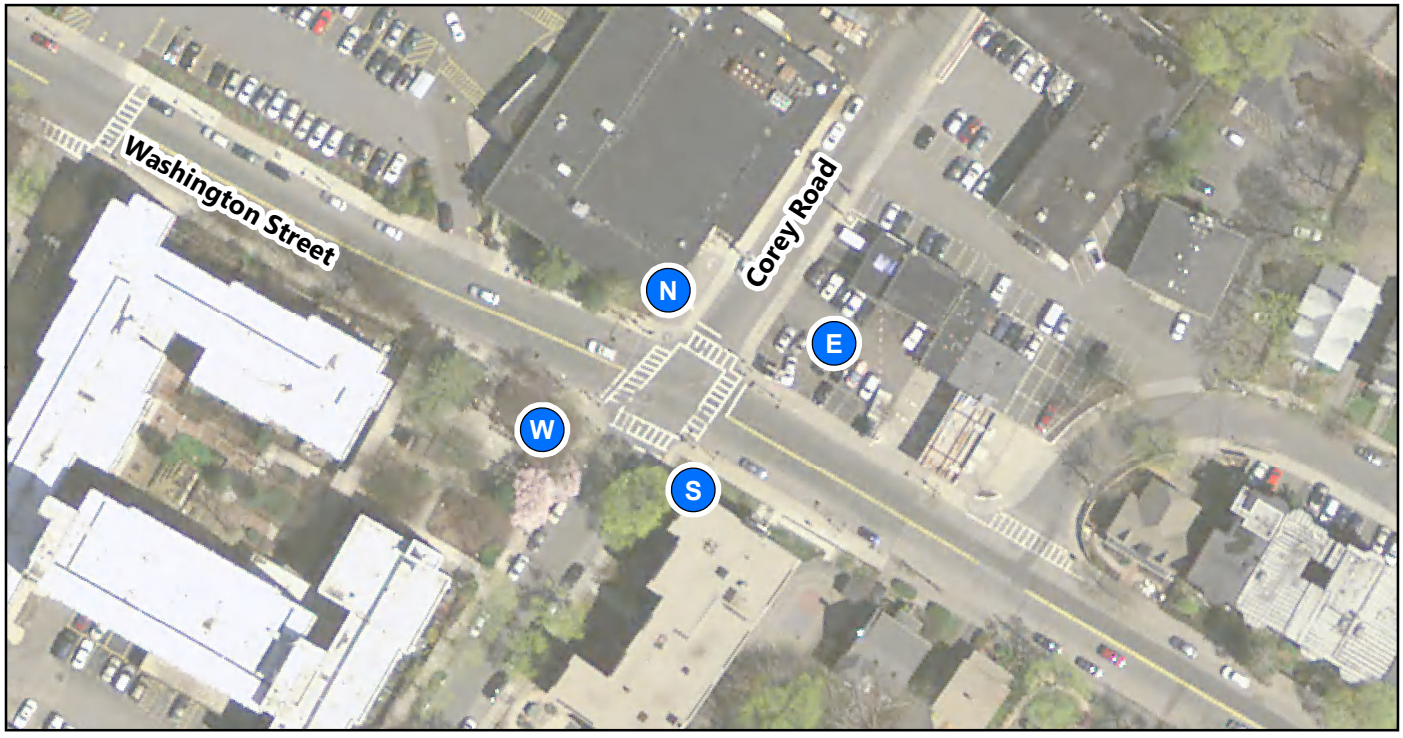
Figure 6.2c

Daylighting Analysis
Center of Allston Street

15 Washington Street
Brighton, Massachusetts



Washington Street at Commonwealth Avenue



Washington Street at Corey Road

0 35 70 140 Feet

Receptor Quadrants

Figure 6.3

Microscale Air Quality Intersection Receptor Quadrants

15 Washington Street
Brighton, Massachusetts

\\vhb\gbl\proj\Boston\13399.00 15 Washington St\tech\Noise\GIS\Washington Street.mxd

0 45 90 180 Feet

Prepared by: VHB

R# Receptor Locations

M# Measurement Locations

Project Area

Figure 6.4

Noise Receptor and Measurement Locations

15 Washington Street
Brighton, Massachusetts

7

Infrastructure

This chapter describes the infrastructure systems that will support the Project. The following utilities are evaluated: wastewater, water, stormwater management, natural gas, electricity, and telecommunications. The Project is located in an urban context with a comprehensive utility service network available at the Project Site boundaries.

The Project will connect to proposed utility systems within Washington Street, Allston Street, and Corey Road. These proposed systems ultimately connect to existing city and utility company systems in the adjacent public streets. Based on initial investigations and consultations with the appropriate agencies and utility companies, it is anticipated that the existing infrastructure systems will support the incremental increase in demand associated with the development and operation of the Project. As design progresses, all required engineering analyses will be conducted, and the final design will adhere to all applicable protocols and design standards ensuring that the Project is properly supported by and uses city infrastructure. Detailed design of the Project's utility systems will proceed in conjunction with the design of the buildings and interior mechanical systems.

The infrastructure systems discussed herein include those owned or managed by the Boston Water and Sewer Commission ("BWSC"), private utility companies, and on-site infrastructure systems. There will be close coordination among these entities and with the project design team during the construction process for the Project.

7.1 Summary of Key Findings and Benefits

The findings related to infrastructure systems include:

- Utility infrastructure systems are available at the Project Site boundaries. It is anticipated these utilities will support the demand associated with the Project.
- On-site drainage generally flows to the Charles River via BWSC-owned infrastructure on the east side of the Project Site towards Corey Road.
- The Project Site is currently serviced by BWSC for domestic and fire protection water, and sanitary sewage service.
- Based upon sewage generation rates outlined in the DEP Sewer Connection and Extension Regulations, 310 CMR 15.203.f, the Project is estimated to generate approximately 43,448 gallons per day of sanitary sewage (41,164 gallons per day of net new sanitary sewage) and will require approximately 47,793 gallons of water per day (45,280 net new).

The key Project-related mitigation and beneficial measures associated with the infrastructure systems include:

- The Project will not introduce additional peak flows, pollutants, or sediments that would potentially impact the receiving waters of the local BWSC stormwater drainage system.
- The Project will improve the quality and quantity of site stormwater runoff compared to existing conditions by collecting and infiltrating one and one fourth (1.25) inches of rainfall over all impervious areas within the site,.
- The proposed stormwater management systems will comply with the 2008 DEP Stormwater Management Policy and Standards.
- Consistent with the sustainable design goals and Article 37 of the Code, the Project is expected to exceed a 20 percent annual potable water use reduction for interior water use and sewage conveyance through the use of low-flow/high-efficiency plumbing fixtures.

7.2 Regulatory Control

All connections will be designed and constructed in accordance with applicable city, state, and federal standards. The final design process for the Project will include required engineering analyses and will adhere to applicable protocols and design standards, ensuring that the Project is properly supported by, and in turn properly uses the utility infrastructure of the City and private utilities. Detailed design of the Project-related utility systems will proceed in conjunction with the final design of the buildings and its interior mechanical systems.

All improvements and connections to BWSC infrastructure will be reviewed by BWSC as part of the Site Plan Review process. This process includes a comprehensive design review of the proposed service connections, assessment of system demands and capacity and establishment of service accounts.

- BWSC has reviewing authority of the proposed site plan design, including stormwater management infrastructure, and water and sanitary sewer system connections/design.
- The Boston Fire Department (BFD) will review the Project with respect to fire protection measures such as access, hydrants, Siamese connections, and standpipes.
- Design of the Project Site access, hydrant locations, and energy systems (gas and electric) will also be coordinated with the respective system owners.
- Where new utility connections are needed and existing connections are to be capped, the excavation will be authorized by the Boston Public Works Department (“BPWD”) through the street opening permit process, as required.
- Additional information on the regulatory framework for each utility system is included in subsequent sections of this chapter.

7.3 Stormwater Management

Since most of the Project Site is already impervious, the Project will not result in significant changes in the pattern of stormwater runoff. Stormwater management controls will be established in compliance with the BWSC standards. The Project is expected to improve stormwater runoff quality and reduce peak flows by increasing landscaping and pervious areas, and through the use of treatment and infiltration facilities.

7.3.1 Existing Drainage Conditions

Figure 7.1 shows the existing drainage facilities serving the Project Site. Record information shows on-site drainage generally flows towards the Charles River. Corey Road, Allston Street and Washington Street contains BWSC owned drainage infrastructure adjacent to the Project Site. Site run-off is collected through a series of catch basins throughout the existing parking lot and is sent to an existing underground detention system, with overflow being directed to Washington Street.

7.3.2 Proposed Drainage Approach

Figure 7.2 illustrates the proposed drainage system. The Project will incorporate stormwater management and treatment systems that will improve water quality, reduce runoff volume and control peak rates of runoff in comparison to existing conditions. The Project will provide infiltration that retains site runoff while providing treatment and peak flow mitigation, in accordance with stormwater standards and Boston Water and Sewer Commission (BWSC) requirements. Additionally, to better ensure improved water quality from the Project, a "Don't Dump, Drains to Charles River" casting will be installed at all new catch basins, area drains, and trench drains.

Stormwater runoff calculations will be done for existing and proposed conditions during the BWSC permitting process for the 2-, 10-, 25- and 100-year storm events. During construction, measures will be implemented to minimize water quality impacts and avoid impacts to abutters.

7.4 Sanitary Sewage

7.4.1 Existing Sewer System

BWSC owns and maintains the sanitary sewer lines near the Project Site (Figure 7.1). These include the 12-inch sewer which runs in Washington Street and a 10-inch sewer in Corey Road. The existing site currently generates approximately 2,284 gallons per day of wastewater based on DEP 310 CMR 15.203 flow factors for the existing supermarket/retail uses of the Project Site.

7.4.2 Proposed Sewage Flow and Connection

Generation rates from the Massachusetts State Environmental Code (Title 5) were used to estimate the Project's sewage generation rates. Table 7-1 below presents the estimated sanitary sewage flow for the Project.

Table 7-1 Estimated Sanitary Sewage Flow (Full-Build)

Use	Sewage Generation Rate[1]	Proposed Size/Quantity	Estimated Sewage Generation (GPD)
Residential	110 GPD/Bedroom	353 Beds	38,830
Retail	50 GPD/1000 SF	3,593 SF	180
Grocery	97 GPD/1000 SF	45,753 SF	4,438
	Total Proposed		43,448
	Total Existing		2,284
	Net New Total		**41,164**

GPD = Gallons per day
SF = Square Feet
1 Based on DEP 310 CMR 15.203 flow calculation factors.

The Project will generate an estimated 43,448 gallons per day of sewage (41,164 net new gallons per day). The Project proposes to connect to the 12-inch sewer within Washington Street with 8-inch services (Figure 7.2). All connections will be coordinated with BWSC.

Proposed Sanitary Sewage Mitigation

BWSC requires that new developments generating greater than 15,000 gallons per day of net new wastewater flow compensate the Commission for the associated generation of I/I at a ratio of 4:1 relative to the net new wastewater generated. Infiltration/Inflow is the component of flows in sanitary sewer systems that do not come from wastewater generated by a building, such as groundwater infiltration from leaking/broken sewer infrastructure, as well as stormwater connections from roof leaders and drainage infrastructure.

As the currently proposed, the development is projected to generate approximately 41,164 gallons per day of net new sewage based on the following program:

- 270 residential units consisting of 353 beds;
- 45,753 square feet of grocery; and
- 3,593 square feet of retail.

As design is advanced and approval is sought, BWSC will review and confirm the appropriate mitigation volume and value of compensation to be paid to the I/I mitigation fund, or provided through alternative mitigation mechanisms, such as individual improvement projects.

7.5 Domestic Water and Fire Protection

7.5.1 Existing Water Supply System

BWSC owns and maintains the water mains near the Project Site (Figure 7.1). BWSC record drawings show the streets surrounding the Project Site are serviced by southern high service mains. The existing two buildings on-site are separately serviced from Allston Street and Corey Road. The existing mains are 12-inches in Allston Street, Washington Street, and Corey Road. The installation dates of these pipes vary, from ductile iron ("DI") pipe installed in 2004 to DI pipe installed 1980. The existing water infrastructure provides a high level of service and diversity to the Brighton neighborhood. Additionally, currently two public fire hydrants are near the Project Site.

7.5.2 Proposed Water Demand and Connection

Domestic water demand is based on estimated sewage generation with an added factor of 10 percent for consumption, system losses, and other use. Based upon sewage generation rates outlined in the DEP Sewer Connection and Extension Regulations, 310 CMR 15.203.f, the Project will require approximately 47,793 gallons of water per day (45,280 net new gallons per day). However, appropriate low-flow and low-consumption plumbing fixtures will be installed in all residential units to achieve a reduction in water usage at a minimum of 20 percent over the baseline to comply with Article 37 of the Boston Zoning Code, as discussed in Chapter 4, *Sustainability/Green Building and Climate Change Resiliency*. The Project is expected to exceed a 20 percent annual potable water use reduction for interior water use and sewage conveyance through the use of low-flow/high-efficiency plumbing fixtures. Such achievement will be determined once plumbing fixtures are selected by the plumbing engineer.

The Project will connect to the 12-inch water main in Washington Street with redundant fire protection and domestic services (Figure 7.2). New water connections will be designed in accordance with BWSC design standards and requirements. Water services to new buildings will be metered in accordance with BWSC's Site Plan Requirements and Site Review Process. The review includes, but is not limited to, sizing of domestic water and fire protection services, calculation of meter sizing, sizing and location of booster pumps (if required, by MEP Engineer), backflow prevention design, and location of hydrants and Siamese connections conform to BWSC and BFD requirements. The Proponent will provide for the meter connection to the BWSC's automatic meter reading system. Fire protection connections on the Project Site will also need approval of the BFD.

7.6 Other Utilities

7.6.1 Natural Gas Service

National Grid Energy owns and operates the natural gas mains and services near the Project Site. The site survey indicates a 12-inch gas main in Corey Road, 8-inch gas main in Washington Street, and a 6-inch main in Allston Street.

The Project's estimated natural gas load for the development is 8,500 MBH. The Proponent will work with National Grid to confirm adequate system capacity as the design for the building is advanced.

7.6.2 Electrical Service

Eversource owns and operates the electric facilities near the Project Site. The survey, provided by VHB, indicates underground power facilities in Washington Street and Corey Road along the frontage of the Project Site. As the design of the Project progresses, the Proponent's electrical engineer and civil engineer will coordinate with Eversource on future configurations of the power system and connections.

The estimated electrical demand load for the development is one 480/277V, 3000 Amp service (residential) and one 480/277V, 3000Amp service (house). Energy conservation measures will be an integral part of the Project-related infrastructure design. As described in Chapter 4, *Sustainability/Green Building and Climate Change Resiliency*, all buildings will be designed to include energy-efficient and water-conservation features for mechanical, electrical, architectural, and structural systems, assemblies, and materials, where feasible and reasonable.

7.6.3 Telephone and Telecommunications

Verizon owns and operates the telephone facilities and services near the Project Site. The survey, provided by VHB, indicates that there is an active conduit and manhole located in Washington Street where the existing building is currently being serviced. In addition, there is an active conduit in Allston Street. Given the existing infrastructure, telephone for the Project Site could be provided from Washington Street or Allston Street as the Project plans to extend telephone systems to service the proposed buildings. The configuration of the proposed service will be developed with Verizon as the design progresses.

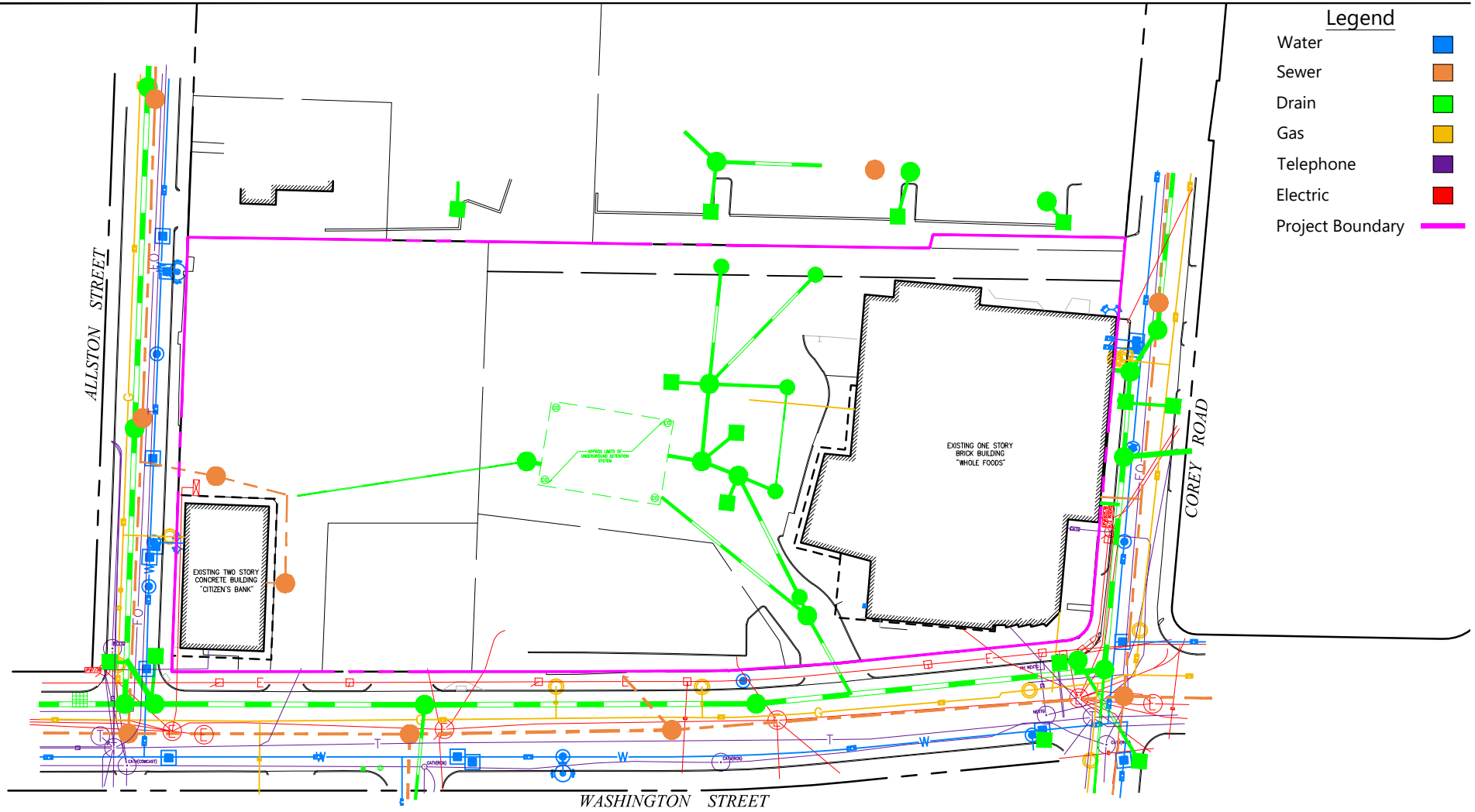
Comcast and RCN own and operate the telecommunications facilities and services near the Project Site. The survey, provided by VHB, indicates that there is active conduit and manholes in Washington Street and extend into both Corey and Allston Street. Telecommunications for the Project Site could be provided from Washington, Corey or Allston Street as the Project plans to extend the telecommunications line to service the proposed buildings. The configuration of the proposed service will be developed with Comcast and RCN as the design progresses.

7.6.4 Protection of Utilities During Construction

During construction, infrastructure will be protected using sheeting and shoring, temporary relocations, and/or construction staging as required. The contractor will be required to coordinate all protection measures, temporary supports, and temporary shutdowns of all utilities with the appropriate utility owners and/or agencies. The contractor will also be required to provide adequate notification to the utility owner prior to any work commencing on their utility.

Page Intentionally Left Blank

\\vhb\gbl\proj\Boston\13399.00 15 Washington St\cad\ld\Planmisc\EPNF\7.1 Existing Conditions.dwg



0 75 150 Feet

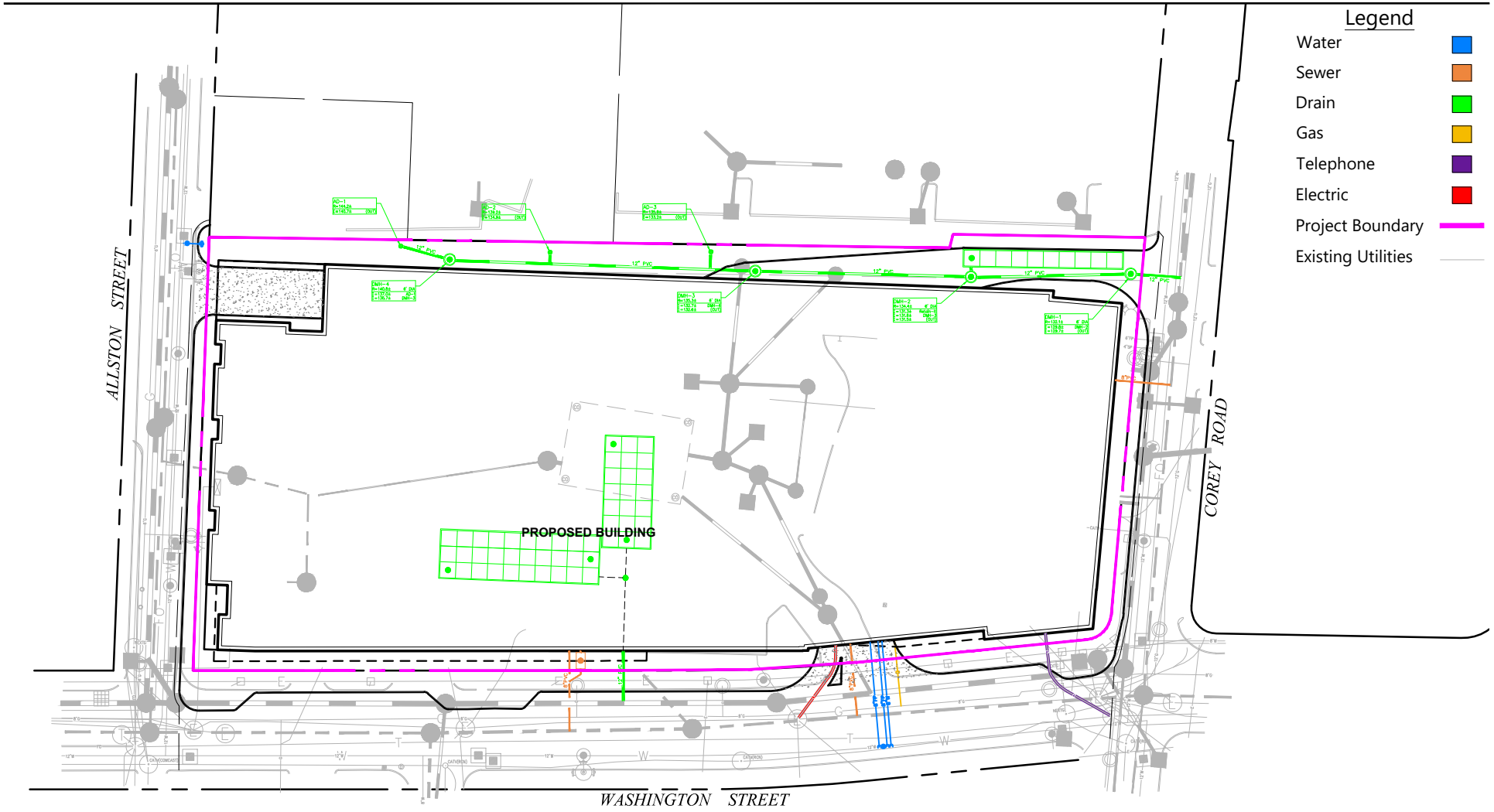
Prepared By: VHB

Figure 7.1

Existing Utilities

15 Washington Street
Brighton, Massachusetts

\\vhb\gbl\proj\Boston\13399.00 15 Washington St\cad\ld\Planmisc\EPNF\7.2 Proposed Conditions.dwg



0 75 150 Feet

Prepared By: VHB

Figure 7.2

Proposed Utilities

15 Washington Street
Brighton, Massachusetts

8

Historic Resources

This chapter identifies properties located within and in the vicinity of the Project Site that are listed in the National and State Registers of Historic Places and/or are included in the Inventory of Historic and Archaeological Assets of the Commonwealth (Inventory), and evaluates potential Project effects on those properties.

8.1 Summary of Key Findings and Benefits

The key findings and benefits of the Project related to historic resources are listed below.

- There are no historic resources within the Project Site;
- Within a one-quarter-mile radius of the Project Site are multiple properties and districts listed in the State and National Registers of Historic Places or included in the Inventory;
- The likelihood of encountering intact, significant archaeological features or deposits in the Project is low; and
- Demolition of the Whole Foods grocery store building, constructed in 1951 and Citizens Bank building, constructed in 1969, will not have any direct impacts on historic resources.

8.2 Historic Resources

A survey was undertaken to identify historic resources within and in the vicinity of the Project Site. There are no historic resources within the Project Site. Immediately adjacent to the southeast of the Project Site is one district included in the State Register of Historic Places – the Aberdeen Architectural Conservation District, and one district to the north of the Project Site included in the Inventory – the Summit Road – Kelton Road Area. Within a one-quarter-mile radius of the Project Site are two properties individually listed in the National Register of Historic Places and multiple properties and districts included in the Inventory. The properties are listed in Table 8-1 and depicted in Figure 8.1. A description of the historic resources follows.

Table 8-1 Historic Resources in the Vicinity of the Project Site

No.	Resource Name	Location	MHC Inventory No.	Designation
1	Timothy Corey House #1	808 Washington Street	BKL.1740	NRIND
2	Timothy Corey House #2	786-788 Washington Street	BKL.1732	NRIND
3	Aberdeen Architectural Conservation District	N/A	BOS.AEC	SR/LHD
4	Commonwealth Avenue – Brighton	Commonwealth Avenue	BOS.YY	INV
5	Commonwealth Avenue – Ransom Road Area	N/A	BOS.KC	INV
6	Mount Hood – Corey Roads Area	N/A	BOS.KF	INV
6	Summit Avenue – Kelton Road Area	N/A	BOS.KJ	INV
7	Corey Hill	N/A	BKL.J	INV
9	Aberdeen Neighborhood	N/A	Multiple	INV

NRIND National Register of Historic Places, Individual Listing
SR State Register of Historic Places
LHD Local Historic District
INV Inventory of Historic and Archaeological Assets of the Commonwealth; no designation

8.2.1 Historic Resources within One-Quarter-Mile Radius of Project Site

See Figure 8.1 for a location map of historic resources within a one-quarter mile radius of the Project Site.

Timothy Corey House #1 and #2, 808 and 786-788 Washington Street, Brookline

The Timothy Corey Houses #1 and 2 were built by Deacon Timothy Corey, a member of one of Brookline's most prominent families during the late 18th and 19th centuries. House #1, constructed in 1806, is an end-gabled, Federal style house. House #2, constructed in 1843 is a stone Greek Revival style homestead. Located to the southeast of the Project Site and separated visually by intervening development, the houses were each individually listed in the National Register in 1985.

Aberdeen Architectural Conservation District, Boston

The Aberdeen section of Brighton (annexed by Boston in 1873) was developed after 1887. The trolley line along Beacon Street helped Aberdeen develop as a "Romantic Suburb" of free-standing residential buildings. The large, ornate houses built along winding roads that follow the land's natural contours, were intended for Boston commuters on the newly electrified trolley system. Aberdeen's architectural styles

include the Colonial Revival, Georgian Revival, Queen Anne, and Shingle styles.[1] Located to the southwest of the Project Site, the district was designated in 2001 by the Boston Landmarks Commission.

Commonwealth Avenue – Brighton, Boston

Commonwealth Avenue between Brighton Avenue and Chestnut Hill Avenue at the Chestnut Hill Reservoir was the last part of the Grand Boulevard to be constructed during the late 1880s and early 1890s. The Brighton portion of Commonwealth Avenue continued the route that had begun in the 1860s when the first segment between the Public Garden and Massachusetts Avenue was laid out as part of Arthur Gilman's plan for Back Bay. Located to the west of the Project Site and separated visually by intervening development, Commonwealth Avenue is included in the Inventory and recommended as eligible for listing in the National Register by the MHC.

Commonwealth Avenue – Ransom Roads Area, Boston

The Commonwealth Avenue – Ransom Roads Area is marked by major c. 1900 to 1930 apartment houses. The area flourished following the introduction of the electric street railway along Commonwealth Avenue in 1909 and intensive post-World War housing development. Located to the west of the Project Site and separated visually by intervening development, the area is included in the Inventory.

Mount Hood – Corey Roads Area, Boston

The Mount Hood – Corey Roads Area is historically significant as a c. 1890-1930 residential quarter that provides physical evidence of the major demographic changes in the area that occurred between 1910 and 1930. The area is noted for groups of 20th-century apartment buildings, constructed with Classical and Georgian Revival details. Located to the southwest of the Project Site and separated visually by intervening development, the area is included in the Inventory.

Summit Avenue – Kelton Road Area, Boston

Like the areas surrounding it, the Summit Avenue – Kelton Road Area developed following the laying out of Commonwealth Avenue in the late 19th century and introduction of the electric streetcar railway in 1909. The area is noted for dense development of apartment buildings, as well as single and two-family houses, constructed c. 1910 to1930. Located to the north of the Project Site, the area is included in the Inventory.

[1] Aberdeen Architectural Conservation District https://www.boston.gov/historic-district/aberdeen-architectural-conservation-district

Corey Hill, Brookline

The Corey Hill neighborhood in Brookline, originally Corey Family agricultural property and developed in the late 19th and early 20th century, is dominated by single and multi-family residences. Developers and residents were attracted to the area by its views. The Corey Hill Improvement Association protected the panorama, preserving the open space at the summit. Located to the east of the Project Site and separated visually by intervening development, the area, and multiple individual properties within the area are included in the Inventory.

Aberdeen Neighborhood, Brookline

Similar to the Aberdeen section of Brighton, Brookline's Aberdeen neighborhood was developed in the late 19th century. The trolley line along Commonwealth Avenue and Beacon Street helped Aberdeen develop, marked by apartment houses and single and two-family residential buildings. Located to the south of the Project Site and separated visually by intervening development, the neighborhood has multiple individual properties that are included in the Inventory.

8.3 Archaeological Resources

Review of the Massachusetts Cultural Resource Information System (MACRIS) site file indicates there are no previously inventoried or State or National Register listed archaeological sites or districts within the Project Site or in immediate adjacent areas.

8.4 Potential Impacts to Historic Resources

Potential impacts related to demolition, urban design, and visual aspects of the project are described in the following sections.

8.4.1 Demolition

The Project involves the demolition of the existing Whole Foods building, constructed in 1951 and the Citizens Bank Building, constructed in 1969. Demolition of the two buildings will not have any direct impacts on historic resources as neither property is listed in the National or State Register of Historic Places or included in the Inventory. And, neither building appears to meet the criteria of eligibility for listing in the National Register.

The Whole Foods building on the Project Site is over 50 years old and subject to Article 85 of the Boston Zoning Code (Demolition Delay). An Article 85 application will be submitted to the BLC.

8.4.2 Urban Design/Visual Impacts

As described in Chapter 1, *Project Description*, Section 1.2, the Project Site encompasses a Whole Foods grocery store and Citizen's Bank building with surface parking, and is surrounded by mature urban residential and related development. The Project has been designed to redevelop the site consistent with its urban context, while providing a mix of uses that activate the pedestrian realm, accompanied by streetscape improvements.

As described in Chapter 3, *Urban Design*, the Project Site is surrounded by existing buildings with a varied mix of architectural styles, heights, and uses, including a two-story residence, three-story school, and four, five and nine-story multi-family residences. The proposed architectural approach for the Project is to separate the massing on the Project Site into four distinct components each identified by its own material, color, fenestration pattern, and height, but all related to each other using a contemporary architectural vocabulary. The varied components reflect the rich and diverse urban fabric surrounding the Project Site. The new development has been designed to complement the neighborhood and will not introduce any visual elements that are out of character with historic resources in the vicinity of the Project Site.

8.4.3 Shadow Impacts

As presented in Section 6.2 of Chapter 6*, Environmental Protection*, a shadow impact analysis was conducted at regular time intervals to investigate the effect that the Project will have throughout the year. New shadows on historic resources will be minimal and the Project will result in no net new shadow on most of the historic resources in the area. The majority of shadow anticipated to be cast on historic resources are limited to the winter solstice on December 21st, which is the shortest day of the year and when cast shadows are at their longest and are least noticeable due to the low sun angle.

At 9:00 and 12 noon on the vernal and autumnal equinox (March and September 21st, respectively), the Project is predicted to cast shadow to the northeast on the southern elevation of 310 Allston Street, a former residence that is located within the Summit-Avenue-Kelton Road Area, which is included in the Inventory.

At 9:00 AM on the winter solstice, the Project casts shadow to the north, extending across Allston Street and the front elevation of adjacent multi-family residential properties on the west side of Allston Street, which are located in the Summit Avenue-Kelton Road Area, which is included in the Inventory.

Page Intentionally Left Blank

Properties included in the National and State Register of Historic Places

1. Timothy Corey House #1
2. Timothy Corey House #2

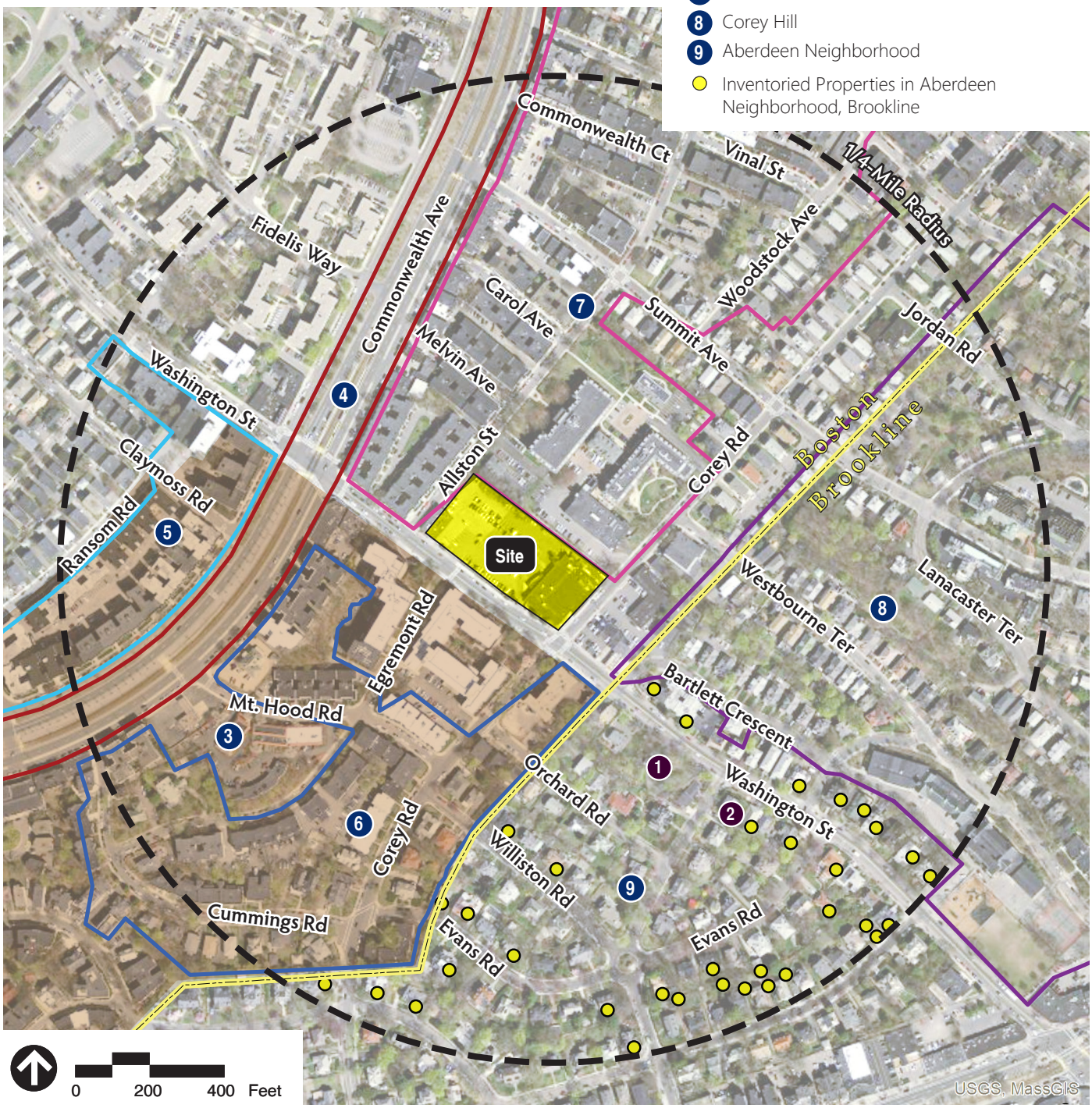
Properties included in the State Register of Historic Places

3. Aberdeen Architectural Conservation District

Properties Included in the Inventory of Historic and Archaeological Assets of the Commonwealth

4. Commonwealth Avenue – Brighton
5. Commonwealth Avenue-Ransom Road Area
6. Mount Hood-Corey Roads Area
7. Summit Avenue-Kelton Road Area
8. Corey Hill
9. Aberdeen Neighborhood

Inventoried Properties in Aberdeen Neighborhood, Brookline



Source: MassGIS 2013-2014 USGS Aerial

Figure 8.1

Historic Resources

15 Washington Street
Brighton, Massachusetts

Appendix A: Letter of Intent

goulston&storrs
counsellors at law

David Linhart
dlinhart@goulstonstorrs.com
(617) 574-4049(tel)

July 13, 2018

Mr. Brian P. Golden, Director
Boston Planning and Development Agency
One City Hall Square, Ninth Floor
Boston, MA 02201
ATTN: Casey Ann Hines, Project Manager

Re: Letter of Intent to File a Project Notification Form
15-35 Washington Street, Allston/Brighton

Dear Director Golden:

On behalf of New Creek LLC and WSP 1725 Holding, LLC, affiliates of Kimco Realty Corporation, in accordance with the Executive Order Relative to the Provision of Mitigation by Development Projects in Boston issued on October 10, 2000, as amended on April 3, 2001, this letter is sent to notify you of our intent to submit a Project Notification Form under Article 80B of the Boston Zoning Code for a proposed mixed-use redevelopment project (the "Project") located at 15-35 Washington Street in the Allston/Brighton neighborhood of Boston, as further described below.

The approximately 2.3-acre site is bounded by Corey Road, Washington Street, Allston Street and residential properties, and is currently operated as a Whole Foods and Citizens Bank with surface parking. The proposed redevelopment program involves the relocation of the Whole Foods and Citizens Bank on site (comprising approximately 49,346 square feet of commercial space), and the addition of approximately 270 multifamily dwelling units, with structured accessory parking. The Project will comply with Inclusionary Development Policy requirements in support of affordable housing for Boston.

We anticipate submitting a Project Notification Form within the next 30-60 days, and we look forward to working with your staff, elected officials, community members, and the Impact Advisory Group that will review the Project.

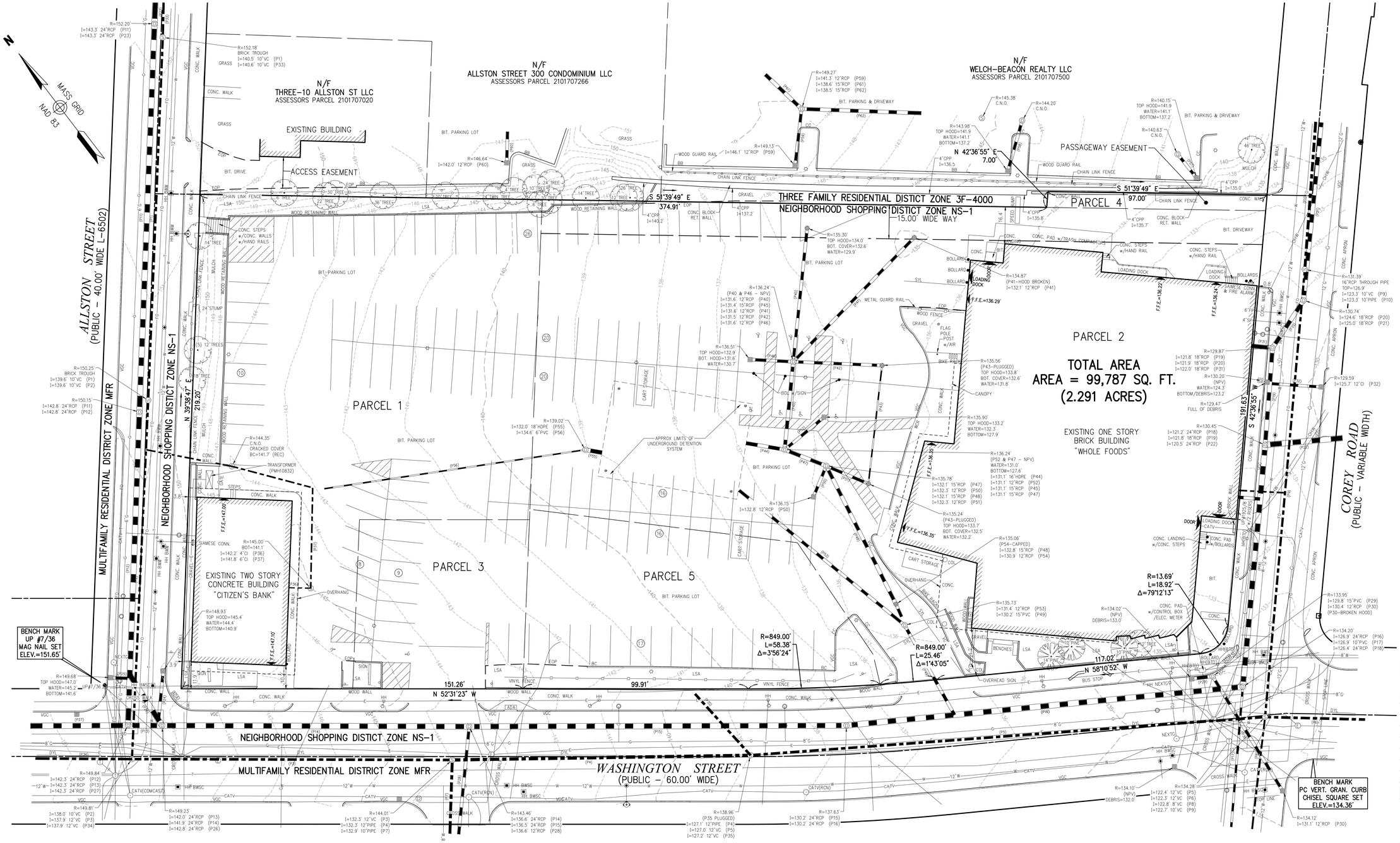
Sincerely,
New Creek LLC and WSP 1725 Holding, LLC,
affiliates of Kimco Realty Corporation
By its Attorneys
Goulston & Storrs PC

By: _____
David Linhart

cc by email: Nicholas Brown, Vice President of Development | Northeast Region, Kimco Realty

Appendix B: Metes and Bounds

Materials are provided on the enclosed CD-ROM.



vhb.com

vhb

101 Walnut Street
PO Box 9151
Watertown, MA 02471
617.924.1770

Legend

- DRAIN MANHOLE
- CATCH BASIN
- SEWER MANHOLE
- ELECTRIC MANHOLE
- TELEPHONE MANHOLE
- MANHOLE
- HAND HOLE
- WATER GATE
- FIRE HYDRANT
- GAS GATE
- BOLLARD w/LIGHT
- STREET SIGN
- LIGHT POLE
- UTILITY POLE
- GUY POLE
- GUY WIRE
- MONITORING WELL
- FLOOD LIGHT
- WELL
- MARSH
- F.F.E.=45.27' FINISHED FLOOR ELEVATION
- CNO COULD NOT OPEN
- NPV NO PIPES VISIBLE
- DYL DOUBLE YELLOW LINE
- DWL DASHED WHITE LINE
- SYL SINGLE WHITE LINE
- LSA LANDSCAPED AREA
- EOP EDGE OF PAVEMENT
- CC CONCRETE CURB
- VGC VERTICAL GRANITE CURB
- SGE SLOPED GRANITE EDGE
- BB BITUMINOUS BERM
- BC BITUMINOUS CURB
- GUARD RAIL
- CHAIN LINK FENCE
- DRAINAGE LINE
- SEWER LINE
- OHW OVERHEAD WIRE
- E UNDERGROUND ELECTRIC
- T TELEPHONE LINE
- G GAS LINE
- W WATER LINE
- STONE WALL
- TREE LINE
- 100'BZ 100-FT BUFFER ZONE
- 100'RA 100-FT RIVER FRONT AREA
- 200'RA 200-FT RIVER FRONT AREA
- ATF=100' LIMIT MEAN ANNUAL HIGH WATER
- BF1=100 LIMIT OF BANK
- WF1=100 VEGETATED WETLAND BOUNDARY

KIMCO
15 Washington Street
Brighton, Massachusetts

No.	Revision	Date	Appvd.

Designed by | Checked by

Issued for | Date

July 28, 2017

Drawing Title
Existing Conditions Plan of Land

Drawing Number
Sv-1

Sheet 1 of 1

Project Number
13399.00

General Notes

1) THE PROPERTY LINES SHOWN ON THIS PLAN ARE BASED UPON AN ACTUAL FIELD SURVEY CONDUCTED BY VHB, INC. IN JULY, 2017 AND FROM DEEDS AND PLANS OF RECORD.
2) THE EXISTING CONDITIONS SHOWN ON THIS PLAN ARE BASED UPON AN ACTUAL ON-THE-GROUND INSTRUMENT SURVEY PERFORMED BY VHB, INC. IN JULY,2017.
3) THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE BASED ON FIELD OBSERVATIONS AND INFORMATION OF RECORD. THEY ARE NOT WARRANTED TO BE EXACTLY LOCATED NOR IS IT WARRANTED THAT ALL UNDERGROUND UTILITIES OR OTHER STRUCTURES ARE SHOWN ON THIS PLAN.
4) HORIZONTAL DATUM IS BASED ON MASS. GRID SYSTEM, NAD 1983. ELEVATIONS SHOWN ON THIS PLAN REFER TO BOSTON CITY BASE.
5) THE LOT LIES ENTIRELY WITHIN ZONE X (UNSHADED) (AREAS TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) AS SHOWN ON THE FLOOD INSURANCE RATE MAP FOR SUFFOLK COUNTY, MASSACHUSETTS, MAP NUMBER 25025C0059G, EFFECTIVE DATE SEPTEMBER 25, 2009.
6) THE TREE SYMBOL OUTLINE SHOWN ON THIS PLAN DOES NOT REPRESENT THE ACTUAL TREE CANOPY.
7) THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A CURRENT TITLE REPORT AND MAY BE SUBJECT TO ADDITIONAL INFORMATION DISCLOSED IN SUCH.

Zoning

THE LOT LIES ENTIRELY WITHIN THE NEIGHBORHOOD SHOPPING DISTRICT (NS-1), AS SHOWN ON THE CITY OF BOSTON ZONING MAP 7A/7B/7C/7D (ALLSTON/BRIGHTON NEIGHBORHOOD DISTRICT), EFFECTIVE DECEMBER 9, 2015. DIMENSIONAL REQUIREMENTS FOR (NS-1) AT THE TIME OF THIS SURVEY ARE:

	REQUIRED
MINIMUM LOT SIZE	N/A
MINIMUM FRONTAGE	N/A
MINIMUM LOT WIDTH	N/A
MINIMUM FRONT YARD SETBACK(4)	N/A(3)
MINIMUM SIDE YARD SETBACK(5)	N/A
MINIMUM REAR YARD SETBACK(6)	20 FEET
MAXIMUM BUILDING HEIGHT	35 FEET
MINIMUM LOT AREA PER DWELLING UNIT (D.U.)(2)	N/A
MINIMUM USEABLE OPEN SPACE	50 S.F. PER D.U.

(2) IN A NEIGHBORHOOD BUSINESS SUBDISTRICT, ALL OR A PORTION OF REQUIRED USABLE OPEN SPACE MAY BE MET BY SUITABLY DESIGNED AND ACCESSIBLE SPACE ON BALCONIES OF MAIN BUILDINGS OR ON ROOFS OF WINGS OF MAIN BUILDINGS, OR ON THE ROOFS OF ACCESSORY BUILDINGS.

(3) SEE SECTION 51-52.1, STREET WALL CONTINUITY. IN THE WESTERN AVENUE/SOLDIERS FIELD ROAD COMMUNITY COMMERCIAL SUBDISTRICT (CC-1), THE MINIMUM REQUIRED FRONT YARD SHALL BE SEVEN (7) FEET. (TEXT AMD. NO. 407 , § 3, 7-23-14)

(4) IN A REQUIRED FRONT YARD IN A NEIGHBORHOOD BUSINESS SUBDISTRICT, NO PLAZA, TERRACE OR PUBLIC ACCESS TO A BASEMENT (OTHER THAN REQUIRED BY THE STATE BUILDING CODE) SHALL BE BELOW THE GRADE OF THE NEAREST SIDEWALK UNLESS, AFTER PUBLIC NOTICE AND HEARING AND SUBJECT TO THE PROVISIONS OF ARTICLE 6, THE BOARD OF APPEAL GRANTS A PERMIT THEREFOR. IN A NEIGHBORHOOD BUSINESS SUBDISTRICT, EVERY FRONT YARD REQUIRED BY THIS CODE SHALL BE AT GRADE LEVEL ALONG EVERY LOT LINE ON WHICH SUCH YARD ABUTS.

(5) IN A NEIGHBORHOOD BUSINESS SUBDISTRICT, NO SIDE YARD IS REQUIRED EXCEPT IN THE CASE OF A LOT WITH A SIDE LOT LINE ABUTTING A RESIDENTIAL SUBDISTRICT, WHICH SHALL HAVE SIDE YARDS AS IF IT WERE IN SUCH ABUTTING DISTRICT. EVERY SIDE YARD SO REQUIRED THAT DOES NOT ABUT A STREET LINE SHALL, ALONG EVERY LOT LINE ON WHICH SUCH YARD ABUTS, BE AT A LEVEL NO HIGHER THAN THAT OF THE LOWEST WINDOW SILL OF THE LOWEST ROOM DESIGNED FOR HUMAN OCCUPANCY OR SO OCCUPIED, AND RELYING UPON NATURAL LIGHT OR NATURAL VENTILATION FROM WINDOWS OPENING ON SUCH YARD.

(6) IN A NEIGHBORHOOD BUSINESS SUBDISTRICT, EVERY REAR YARD REQUIRED BY THIS CODE THAT DOES NOT ABUT A STREET LINE SHALL, ALONG EVERY LOT LINE ON WHICH SUCH YARD ABUTS, BE AT A LEVEL NO HIGHER THAN THE LEVEL OF THE LOWEST WINDOW SILL IN THE LOWEST ROOM DESIGNED FOR HUMAN OCCUPANCY OR SO OCCUPIED, AND RELYING UPON NATURAL LIGHT OR NATURAL VENTILATION FROM WINDOWS OPENING ON SUCH YARD.

Plan References

1) L.C.C. 7555D
2) L.C.C. 22198A
3) L.C.C. 22199A
4) L.C.C. 13462A-F
5) PLAN 85 OF 2005
6) PLAN 226 OF 2005
7) PLAN 626 OF 2007
8) PLAN BK. 1797 PG. 465
9) PLAN BK. 9490 PG 159

Record Owner

PARCEL 1
NEW CREEK LLC
35 WASHINGTON STREET
BRIGHTON, MASS.
ASSESSORS PARCEL 2101710000
CERT#128811

PARCEL 2 & 4
NEW CREEK LLC
15 WASHINGTON STREET
BRIGHTON, MASS.
ASSESSORS PARCEL 2101707001
CERT#128811
BK.48940 PG.256

PARCEL 3
NEW CREEK LLC
WASHINGTON STREET
BRIGHTON, MASS.
ASSESSORS PARCEL 2101709000
BK.48940 PG.256

PARCEL 5
WSP 1725 HOLDING LLC
17-21 WASHINGTON STREET
BRIGHTON, MASS.
ASSESSORS PARCEL 2101708000
BK.55585 PG.265 & 267

Appendix C: BPDA Checklists

Accessibility Checklist

Climate Change Preparedness and Resiliency Checklist

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.

1. Project Information:

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

Project Name:	15 Washington Street
Primary Project Address:	15 Washington Street, Brighton, MA 02135
Total Number of Phases/Buildings:	Two phases and buildings. The west half of the Project will be constructed and occupied first to allow the existing Whole Foods grocery store to remain open. Construction of the east half of the Project Site is planned immediately following the relocation of Whole Foods and demolition of the existing store.
Primary Contact (Name / Title / Company / Email / Phone):	Nick Brown / NBrown@kimcorealty.com / 516-869-7266
Owner / Developer:	New Creek LLC and WSP 1725 Holding, LLC
Architect:	Elkus Manfredi Architects
Civil Engineer:	VHB
Landscape Architect:	CRJA
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.	

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:	99,787 SF	Building Area:	282,991 GSF
Building Height:	85 FT. *max above*	Number of Stories:	2 to 7 Flrs.

	avg grade plane			
First Floor Elevation:	**El. +134' & +148'**	Is there below grade space:		**Yes** / *No* - **1 Partial Story**
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:	**Retail, residential lobbies, residential amenity & residential**			

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 site is located a block off of Commonwealth Avenue on Washington Street in Brighton and is surrounded by mostly residential uses and an elementary school. The site slopes down from Allston Street at elev. +148' to Corey Road at elev. +134'.**
List the surrounding accessible MBTA transit lines and their proximity to development site: commuter rail / subway stations, bus stops:	**The green line is one block away on Commonwealth Avenue. Bus service is along Washington Street.**
List the surrounding institutions: hospitals, public housing, elderly and disabled housing developments, educational facilities, others:	**Harriett Baldwin Elementary School** **BHA Patricia White Apartments** **B'nai B'rith Senior Center Covenant House** **180 Corey Road Assisted Living** **170 Corey Road Brighton House Rehab and Nursing Center**
List the surrounding government buildings: libraries, community centers, recreational facilities, and other related facilities:	**None in the immediate surrounding blocks**

4. Surrounding Site Conditions – Existing:

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:	**Yes.** **7' wide sidewalk on Allston Street** **10' wide sidewalk on Washington Street** **7' wide sidewalk on Corey Road** **All three (3) sidewalks at the site will be replaced with new.**
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.**
5. Surrounding Site Conditions – Proposed *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.** **Neighborhood Connector**
What are the total dimensions and slopes of the proposed sidewalks? List the widths of the proposed zones: Frontage, Pedestrian and Furnishing Zone:	**<u>Washington Street</u>** **-overall dimension: (21' at widest point, 15' at narrowest)** **-furnishing zone: 6'-0"** **<u>Allston Street</u>** **-overall dimension 11'-6"** **-frontage: 4'-0" (planting area adjacent to building)** **-combined furnishing & pedestrian sidewalk: 7'-0"** **<u>Corey Road</u>** **-overall dimension 14'-6"** **-pedestrian: 8'-0"** **-furnishing zone: 6'-0"**
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?	**<u>Washington Street</u>** **-furnishing zone: concrete sidewalk, city standard lights, smart meters, trees in tree wells (minimum 9'x6'), seating elements, bike racks, trash/recycle receptacles.** **-pedestrian right-of-way: concrete sidewalk** **<u>Allston Street</u>** **-combined furnishing and pedestrian right-of-way: city standard light fixtures**

	and concrete walks <u>Corey Road</u> -furnishing zone: concrete sidewalk, city standard lights, smart meters, trees in tree wells (minimum 9'x6') -pedestrian right-of-way: concrete sidewalk
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?	Seating elements will be contained within the furnishings zone and will not encroach on the sidewall right-of-way.
If the pedestrian right-of-way is on private property, will the proponent seek a pedestrian easement with the Public Improvement Commission (PIC)?	Yes.
Will any portion of the Project be going through the PIC? ***If yes,*** identify PIC actions and provide details.	Yes; the actions are Specific Repair and Pedestrian Easement.
6. Accessible Parking: *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?	323 garage spaces
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?	Accessible and van accessible spaces will be provided per MAAB and ADA 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?	No.

Where is the accessible visitor parking located?	**In the garage.**
Has a drop-off area been identified? ***If yes,*** will it be accessible?	**No.**
7. Circulation and Accessible Routes: *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:	**Flush condition, typically.**
Are the accessible entrances and standard entrance integrated? ***If yes,*** *describe.* ***If no,*** what is the reason?	**Yes.**
If project is subject to Large Project Review/Institutional Master Plan, describe the accessible routes way-finding / signage package.	**Refer to Figure C.2.**
8. Accessible Units (Group 2) and Guestrooms: (If applicable) *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?	**270 DU's**
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?	**All are rental.** **IDP percentage as required by the City.**
If a residential development, how many accessible Group 2 units are being proposed?	**As required by code.**
If a residential development, how many accessible Group 2 units will also be	**As required by code.**

IDP units? ***If none***, describe reason.	
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.	N/A
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.	No.
Are there interior elevators, ramps or lifts located in the development for access around architectural barriers and/or to separate floors? ***If yes,*** describe:	Yes, elevators for upper floor access.
9. Community Impact: *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?	Undetermined at this time.
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?	Bench seating along Washington Streetscape. Common residential amenity spaces will be provided and will comply with all ADA requirements.
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.	No, public restrooms are not required by code since no amenity spaces are being provided by the project that are open to the general public.

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?	**No, the Project has not been reviewed with either of these agencies yet.**
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?	**No, the Project has not been presented to the DAB yet.**

10. Attachments

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.

Provide a diagram of the accessible route connections through the site, including distances.

Provide a diagram the accessible route to any roof decks or outdoor courtyard space. (if applicable)

Provide a plan and diagram of the accessible Group 2 units, including locations and route from accessible entry.

Provide any additional drawings, diagrams, photos, or any other material that describes the inclusive and accessible elements of this project.

- **Figure C.1 – Accessible Parking Diagram**
- **Figure C.2 – Ground Level Accessibility Diagram**

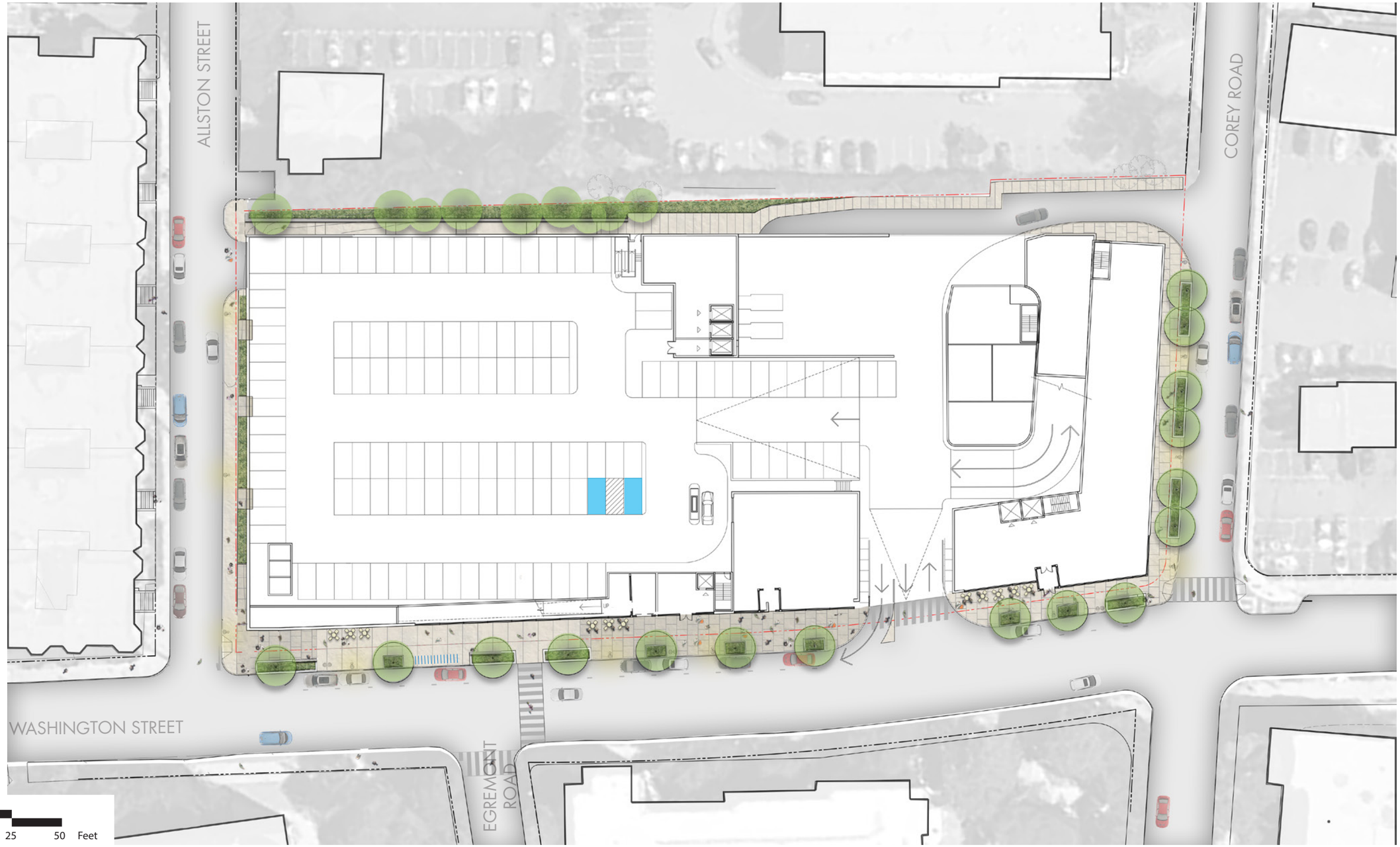
This completes the Article 80 Accessibility Checklist required for your project. Prior to and during the review process, Commission staff are able to provide technical assistance and design review, in order to help achieve ideal accessibility and to ensure that all buildings, sidewalks, parks, and open 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



Key

Ground Level Accessible Parking

CRJA landscape architects

Figure C.1

Accessible Parking Diagram

15 Washington Street
Brighton, Massachusetts

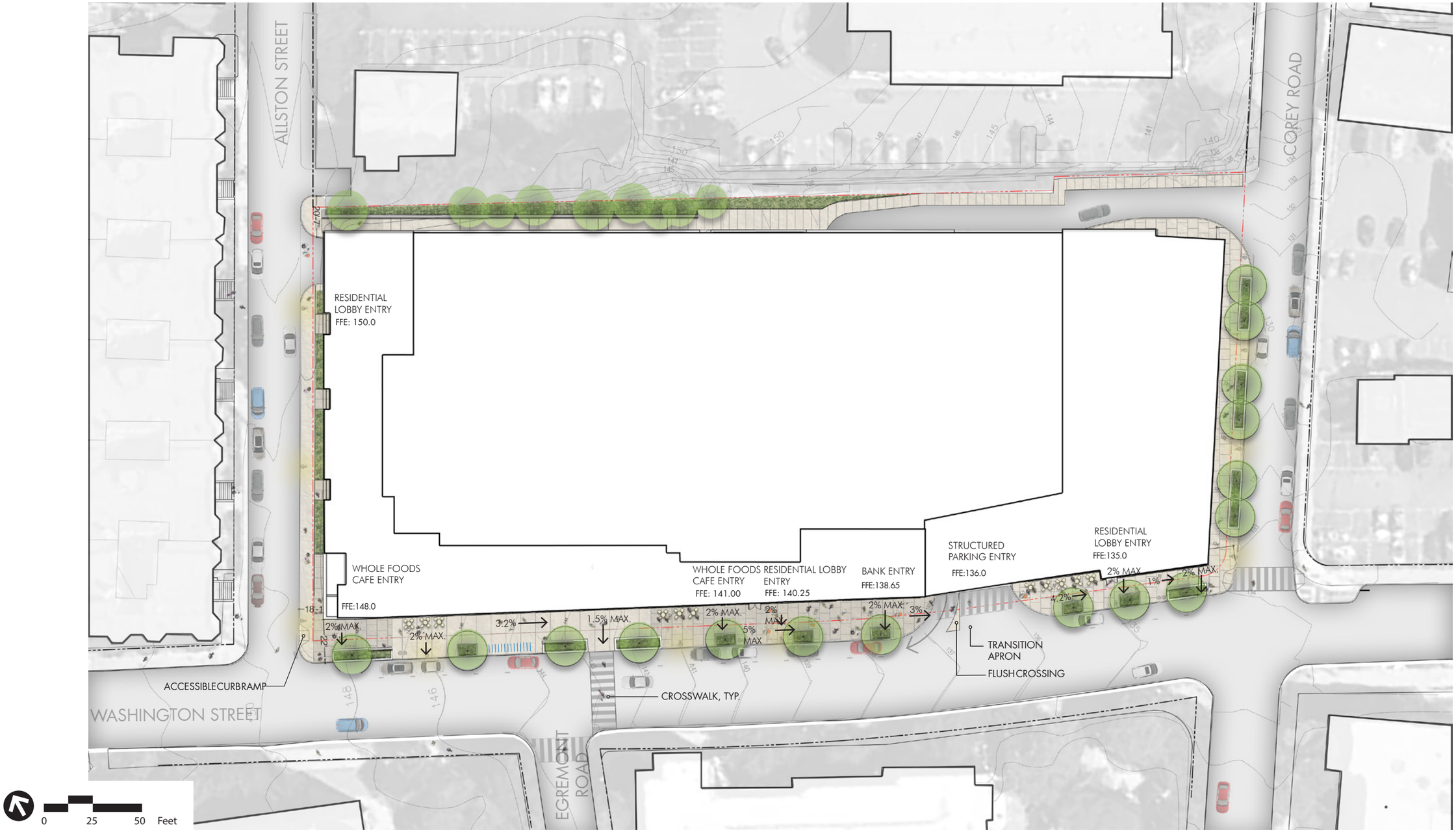


Figure C.2

Ground Level Accessibility Diagram

15 Washington Street
Brighton, Massachusetts

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:	15 Washington Street			
Project Address:	15 Washington Street, Brighton, MA 02135			
Project Address Additional:				
Filing Type (*select*)	*Initial (PNF, **EPNF**, NPC or other substantial filing)* *Design / Building Permit (prior to final design approval), or* *Construction / Certificate of Occupancy (post construction completion)*			
Filing Contact	Nick Brown		NBrown@kimcorealty.com	(516) 869-7266
Is MEPA approval required	*Yes/*No		*Date* N/A	

A.3 - Project Team

Owner / Developer:	New Creek LLC and WSP 1725 Holding, LLC
Architect:	Elkus Manfredi Architects
Engineer:	WSP USA
Sustainability / LEED:	The Green Engineer, Inc.
Permitting:	VHB
Construction Management:	To be determined

A.3 - Project Description and Design Conditions

List the principal Building Uses:	Residential and Retail
List the First Floor Uses:	Retail residential lobbies, residential amenity & residential
List any Critical Site Infrastructure and or Building Uses:	Residential and Retail building. Switchgear (pad-mounted), backup diesel generator and storage.

Site and Building:

Site Area:	99,740 SF	Building Area:	287,112 SF
Building Height:	81 Ft	Building Height:	7 Stories
Existing Site Elevation – Low:	130 Ft BCB	Existing Site Elevation – High:	152 Ft BCB
Proposed Site Elevation – Low:	130 Ft BCB	Proposed Site Elevation – High:	152 Ft BCB
Proposed First Floor Elevation:	Varies	Below grade levels:	1 Partial Story

Article 37 Green Building:

LEED Version - Rating System:	LEED-NCv4	LEED Certification:	*Yes /* No

Proposed LEED rating:	**Certified***/Silver/ Gold/Platinum*	Proposed LEED point score:	**43 Pts.**

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-30 (R)*	Exposed Floor:	*R-30 (R)*
Foundation Wall:	*C-0.119 (R)*	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:	*0%*	Wall & Spandrel Assembly Value:	*(U)*
Area of Framed & Insulated / Standard Wall:	*60%*	Wall Value	*R-18 Assembly (R)*
Area of Vision Window:	*40%*	Window Glazing Assembly Value:	*U-0.38 (U)*
		Window Glazing SHGC:	*0.4 (SHGC)*
Area of Doors:	*<1%*	Door Assembly Value:	*0.50 (U)*

Energy Loads and Performance

For this filing – describe how energy loads & performance were determined	**Energy modeling has been performed using eQUEST v3.65 energy simulation software. eQUEST uses the latest DOE 2.2 building energy analysis software as its calculation engine.**		
Annual Electric:	*3.2 M (kWh)*	Peak Electric:	*1980.1 (kW)*
Annual Heating:	*2,183 MMBTU*	Peak Heating:	*1.3 (MMbtu/hr)*
Annual Cooling:	*604k (Tons/hr)*	Peak Cooling:	*289 (Tons)*
Energy Use - Below ASHRAE 90.1 - 2013:	*22%*	Have the local utilities reviewed the building energy performance?	*Yes / no*
Energy Use - Below Mass. Code:	*19%*	Energy Use Intensity:	*45 (kBtu/SF)*

Back-up / Emergency Power System

Electrical Generation Output:	**700 (kW)**	Number of Power Units:	**2**
System Type:	**Combustion Engine**	Fuel Source:	**Diesel**

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

Electric:	**200 (kW)**	Heating:	**0 (MMbtu/hr)**
		Cooling:	**0 (Tons/hr)**

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: **964 (Tons)**

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

A full building energy model is being developed within eQuest and used to inform design decision related to building envelope and MEP equipment within each building. It is intended that these buildings will be designed with the infrastructure in place for a CHP, PV System and other energy reduction strategies. An economic analysis will be conducted during the design phase of the buildings. With involvement and input from the utility.

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

Reduction in vertical glazing u-factors
Reduction in vertical glazing SHGC
Increase in roof R-values

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

100% OA Energy Recovery Unit with water source heat pumps. Low flow fixtures and high efficiency lighting to reduce lighting power density

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

Combined Heat and Power, Solar Photovoltaic, Solar Thermal are being reviewed for project design and implementation. Architectural and geothermal have been reviewed and found not viable.

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

Regarding the integration of Smart Utility Technology into new developments, the proposed case has several elements of a microgrid: options for renewables (varying opportunities), electric vehicle charging station potential, efficient buildings/HVAC systems, options for demand response, and options for co- or tri-gen to reduce carbon, save energy, and promote resiliency. The design team will follow Smart Utility Standards to integrate smart technology with existing infrastructure for future connections to anticipated smart grids for all utilities.

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

Utility incentive programs. The input from the utility, including the utility's approval to connect back into the grid, such a system can be further evaluated.

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 building/systems may evolve to further reduce GHG over time through inclusion of metering, tenant guidelines, energy conservation measures, opportunities for renewables, and exploring energy storage options as they emerge and as systems get upgraded. The project team will continue to evaluate energy conservation strategies during the design phase of the project. Several additional strategies have been identified for further investigation:
- Reduce overall glass percentage
- Optimize wall and roof U-value
- Optimize glass SHGC
- Reduce lighting power density by 30%, or more
- Combined Heat and Power (CHP)
- Photovoltaic array (PV)

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:	22-36 Deg.	Temperature Range - High:	66-82 Deg.
Annual Heating Degree Days:	296	Annual Cooling Degree Days	1783

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

Days - Above 90°:	10 days	Days – Above 100°:	1 day
Number of Heatwaves / Year:	1	Average Duration of Heatwave (Days):	1 day

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

It is important to note that full build-out of the Project is a few years out. Given this timeframe, it is anticipated that energy conservation technologies will advance providing additional, potentially more viable options than a CHP or PV system. Therefore, the Proponent is committed to continuing to evaluate the feasibility and benefits of each system as well as other technologies for comparative purposes.

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:

As part of the energy modeling process, climate files that reflect the predicted increase in temperature can be used to better understand how the buildings and their systems would perform under different climate conditions. This understanding can then be considered when designing major plant and overall HVAC systems.

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:

During power outages, building emergency and life safety systems (i.e., fire-pump pressurizing sprinkler and standpipe systems, egress lighting, smoke evacuation systems, heat and smoke detection and alarm systems, emergency

communications and first-responder's elevator systems) will all be powered by diesel emergency generators in each building.

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: **4.9 in.**

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

The stormwater management system for the Project will capture and infiltrate a volume equivalent to 1-inch over the entire Project Site, which will reduce site run-off compared to existing conditions.

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 stormwater management system for the Project will capture and infiltrate a volume equivalent to 1-inch over the entire Project Site. The system will include an overflow design that bypasses the system to ensure water is directed away from the building in extreme events.

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: *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**

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

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:	*Ft BCB*		
Sea Level Rise - Design Flood Elevation:	*Ft BCB*	First Floor Elevation:	*Ft BCB*
Site Elevations at Building:	*Ft BCB*	Accessible Route Elevation:	*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.:

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.:

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:

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

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.:

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

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

Appendix D: Transportation Supporting Documentation

Materials are provided on the enclosed CD-ROM.

- Count Data
    - Turning Movement Counts (TMCs)
    - Automatic Traffic Recorder (ATR)
- Crash Analysis Worksheets
- Synchro Reports
    - 2017 Existing Condition – Morning Peak Hour
    - 2017 Existing Condition – Evening Peak Hour
    - 2022 No-Build Condition – Morning Peak Hour
    - 2022 No-Build Condition – Evening Peak Hour
    - 2022 Build Condition – Morning Peak Hour
    - 2022 Build Condition – Evening Peak Hour

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

PDI File #: **175958 A**
Location: **N: Commonwealth Avenue (Route 30) S: Commonwealth Avenue (Route 30) NE: Carriage Road NW: Carriage Road**
Location: **E: Washington Street W: Washington Street SE: Carriage Road SW: Carriage Road**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 08, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

Cars and Heavy Vehicles (Combined)

	Commonwealth Avenue (Route 30) from North									Carriage Road from Northeast								
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
7:00 AM	0	0	1	57	0	26	2	1	87	0	0	0	0	0	0	0	0	0
7:15 AM	0	1	0	52	0	29	0	3	85	0	0	0	0	0	0	0	0	0
7:30 AM	1	0	1	85	0	34	0	9	130	0	0	0	0	0	0	0	0	0
7:45 AM	0	1	0	88	0	20	0	7	116	0	0	0	0	0	0	0	0	0
Total	1	2	2	282	0	109	2	20	418	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	98	0	27	1	6	132	0	0	0	0	0	0	0	0	0
8:15 AM	0	1	0	78	0	21	0	4	104	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	1	79	0	27	2	5	114	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	1	63	0	24	3	5	96	0	0	0	0	0	0	0	0	0
Total	0	1	2	318	0	99	6	20	446	0	0	0	0	0	0	0	0	0
Grand Total	1	3	4	600	0	208	8	40	864	0	0	0	0	0	0	0	0	0
Approach %	0.1	0.3	0.5	69.4	0.0	24.1	0.9	4.6		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total %	0.0	0.1	0.1	13.7	0.0	4.7	0.2	0.9	19.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total									1739									61
Cars	1	3	4	584	0	193	7	37	829	0	0	0	0	0	0	0	0	0
% Cars	100.0	100.0	100.0	97.3	0.0	92.8	87.5	92.5	95.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total									1703									58
Heavy Vehicles	0	0	0	16	0	15	1	3	35	0	0	0	0	0	0	0	0	0
% Heavy Vehicles	0.0	0.0	0.0	2.7	0.0	7.2	12.5	7.5	4.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total									36									3

	Washington Street from East									Carriage Road from Southeast								
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
7:00 AM	4	13	1	58	0	8	0	0	84	18	3	0	0	0	0	0	0	21
7:15 AM	5	33	1	57	0	8	0	0	104	31	1	0	0	0	0	0	0	32
7:30 AM	1	16	3	49	4	5	0	0	78	32	7	0	0	0	0	0	0	39
7:45 AM	1	15	2	74	1	14	0	0	107	39	5	0	0	0	0	0	0	44
Total	11	77	7	238	5	35	0	0	373	120	16	0	0	0	0	0	0	136
8:00 AM	0	22	3	64	0	18	0	0	107	30	3	0	0	0	0	0	0	33
8:15 AM	0	13	4	79	3	11	0	0	110	24	4	0	0	0	0	0	0	28
8:30 AM	1	16	1	72	1	7	0	0	98	21	7	0	0	0	0	0	0	28
8:45 AM	0	16	4	56	2	14	0	0	92	23	1	0	0	0	0	1	0	25
Total	1	67	12	271	6	50	0	0	407	98	15	0	0	0	0	1	0	114
Grand Total	12	144	19	509	11	85	0	0	780	218	31	0	0	0	0	1	0	250
Approach %	1.5	18.5	2.4	65.3	1.4	10.9	0.0	0.0		87.2	12.4	0.0	0.0	0.0	0.0	0.4	0.0	
Total %	0.3	3.3	0.4	11.6	0.3	1.9	0.0	0.0	17.8	5.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	5.7
Exiting Leg Total									1185									3
Cars	11	135	18	483	10	84	0	0	741	214	31	0	0	0	0	0	0	245
% Cars	91.7	93.8	94.7	94.9	90.9	98.8	0.0	0.0	95.0	98.2	100.0	0.0	0.0	0.0	0.0	0.0	0.0	98.0
Exiting Leg Total									1131									0
Heavy Vehicles	1	9	1	26	1	1	0	0	39	4	0	0	0	0	0	1	0	5
% Heavy Vehicles	8.3	6.3	5.3	5.1	9.1	1.2	0.0	0.0	5.0	1.8	0.0	0.0	0.0	0.0	0.0	100.0	0.0	2.0
Exiting Leg Total									54									3

	Commonwealth Avenue (Route 30) from South									Carriage Road from Southwest								
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
7:00 AM	0	10	0	130	0	1	0	0	141	0	0	0	0	0	0	0	0	0
7:15 AM	0	13	0	163	0	0	0	0	176	0	0	0	0	0	0	0	0	0
7:30 AM	1	10	0	187	0	0	0	0	198	0	0	0	0	0	0	0	0	0
7:45 AM	0	12	0	202	0	0	0	0	214	0	0	0	0	0	0	0	0	0
Total	1	45	0	682	0	1	0	0	729	0	0	0	0	0	0	0	0	0
8:00 AM	0	5	1	218	0	0	0	0	224	0	0	0	0	0	0	0	0	0
8:15 AM	1	16	0	190	0	0	0	0	207	0	0	0	0	0	0	0	0	0
8:30 AM	1	17	0	201	0	0	0	0	219	0	0	0	0	0	0	0	0	0
8:45 AM	0	18	0	168	0	0	0	0	186	0	0	0	0	0	0	0	0	0
Total	2	56	1	777	0	0	0	0	836	0	0	0	0	0	0	0	0	0
Grand Total	3	101	1	1459	0	1	0	0	1565	0	0	0	0	0	0	0	0	0
Approach %	0.2	6.5	0.1	93.2	0.0	0.1	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total %	0.1	2.3	0.0	33.2	0.0	0.0	0.0	0.0	35.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total									729									74
Cars	0	101	1	1437	0	1	0	0	1540	0	0	0	0	0	0	0	0	0
% Cars	0.0	100.0	100.0	98.5	0.0	100.0	0.0	0.0	98.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total									709									71
Heavy Vehicles	3	0	0	22	0	0	0	0	25	0	0	0	0	0	0	0	0	0
% Heavy Vehicles	100.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total									20									34

	Washington Street from West									Carriage Road from Northwest									
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Total
7:00 AM	1	3	0	87	1	6	0	0	98	8	9	0	0	0	0	0	0	17	448
7:15 AM	2	6	0	93	2	10	0	0	113	3	6	0	0	0	0	0	0	9	519
7:30 AM	1	7	0	91	0	10	1	0	110	5	4	0	0	0	0	0	0	9	564
7:45 AM	3	7	0	84	0	17	0	0	111	2	8	0	0	0	0	0	0	10	602
Total	7	23	0	355	3	43	1	0	432	18	27	0	0	0	0	0	0	45	2133
8:00 AM	2	5	0	70	0	11	1	0	89	12	6	0	0	0	0	0	0	18	603
8:15 AM	2	3	0	61	2	15	0	0	83	13	1	0	0	0	0	0	0	14	546
8:30 AM	0	4	0	83	2	13	1	0	103	11	6	1	0	0	0	0	0	18	580
8:45 AM	0	7	0	89	2	14	0	0	112	9	8	0	0	0	0	0	0	17	528
Total	4	19	0	303	6	53	2	0	387	45	21	1	0	0	0	0	0	67	2257
Grand Total	11	42	0	658	9	96	3	0	819	63	48	1	0	0	0	0	0	112	4390
Approach %	1.3	5.1	0.0	80.3	1.1	11.7	0.4	0.0		56.3	42.9	0.9	0.0	0.0	0.0	0.0	0.0		
Total %	0.3	1.0	0.0	15.0	0.2	2.2	0.1	0.0	18.7	1.4	1.1	0.0	0.0	0.0	0.0	0.0	0.0	2.6	
Exiting Leg Total									576									23	4390
Cars	11	41	0	623	8	94	2	0	779	60	46	0	0	0	0	0	0	106	4240
% Cars	100.0	97.6	0.0	94.7	88.9	97.9	66.7	0.0	95.1	95.2	95.8	0.0	0.0	0.0	0.0	0.0	0.0	94.6	96.6
Exiting Leg Total									547									21	4240
Heavy Vehicles	0	1	0	35	1	2	1	0	40	45	33	1	0	0	0	0	0	79	223
% Heavy Vehicles	0.0	2.4	0.0	5.3	11.1	2.1	33.3	0.0	4.9	71.4	68.8	100.0	0.0	0.0	0.0	0.0	0.0	70.5	5.1
Exiting Leg Total									71									2	223

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

7:45 AM	Commonwealth Avenue (Route 30) from North									Carriage Road from Northeast								
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
7:45 AM	0	1	0	88	0	20	0	7	116	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	98	0	27	1	6	132	0	0	0	0	0	0	0	0	0
8:15 AM	0	1	0	78	0	21	0	4	104	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	1	79	0	27	2	5	114	0	0	0	0	0	0	0	0	0
Total Volume	0	2	1	343	0	95	3	22	466	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.4	0.2	73.6	0.0	20.4	0.6	4.7		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
PHF	0.000	0.500	0.250	0.875	0.000	0.880	0.375	0.786	0.883	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Cars	0	2	1	336	0	88	2	21	450	0	0	0	0	0	0	0	0	0
Cars %	0.0	100.0	100.0	98.0	0.0	92.6	66.7	95.5	96.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heavy Vehicles	0	0	0	7	0	7	1	1	16	0	0	0	0	0	0	0	0	0
Heavy Vehicles %	0.0	0.0	0.0	2.0	0.0	7.4	33.3	4.5	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cars Enter Leg	0	2	1	336	0	88	2	21	450	0	0	0	0	0	0	0	0	0
Heavy Enter Leg	0	0	0	7	0	7	1	1	16	0	0	0	0	0	0	0	0	0
Total Entering Leg	0	2	1	343	0	95	3	22	466	0	0	0	0	0	0	0	0	0
Cars Exiting Leg									941									27
Heavy Exiting Leg									14									2
Total Exiting Leg									955									29

	Washington Street from East									Carriage Road from Southeast								
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
7:45 AM	1	15	2	74	1	14	0	0	107	39	5	0	0	0	0	0	0	44
8:00 AM	0	22	3	64	0	18	0	0	107	30	3	0	0	0	0	0	0	33
8:15 AM	0	13	4	79	3	11	0	0	110	24	4	0	0	0	0	0	0	28
8:30 AM	1	16	1	72	1	7	0	0	98	21	7	0	0	0	0	0	0	28
Total Volume	2	66	10	289	5	50	0	0	422	114	19	0	0	0	0	0	0	133
% Approach Total	0.5	15.6	2.4	68.5	1.2	11.8	0.0	0.0		85.7	14.3	0.0	0.0	0.0	0.0	0.0	0.0	
PHF	0.500	0.750	0.625	0.915	0.417	0.694	0.000	0.000	0.959	0.731	0.679	0.000	0.000	0.000	0.000	0.000	0.000	0.756
Cars	1	64	9	277	4	49	0	0	404	111	19	0	0	0	0	0	0	130
Cars %	50.0	97.0	90.0	95.8	80.0	98.0	0.0	0.0	95.7	97.4	100.0	0.0	0.0	0.0	0.0	0.0	0.0	97.7
Heavy Vehicles	1	2	1	12	1	1	0	0	18	3	0	0	0	0	0	0	0	3
Heavy Vehicles %	50.0	3.0	10.0	4.2	20.0	2.0	0.0	0.0	4.3	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3
Cars Enter Leg	1	64	9	277	4	49	0	0	404	111	19	0	0	0	0	0	0	130
Heavy Enter Leg	1	2	1	12	1	1	0	0	18	3	0	0	0	0	0	0	0	3
Total Entering Leg	2	66	10	289	5	50	0	0	422	114	19	0	0	0	0	0	0	133
Cars Exiting Leg									530									0
Heavy Exiting Leg									27									2
Total Exiting Leg									557									2

	Commonwealth Avenue (Route 30) from South									Carriage Road from Southwest								
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
7:45 AM	0	12	0	202	0	0	0	0	214	0	0	0	0	0	0	0	0	0
8:00 AM	0	5	1	218	0	0	0	0	224	0	0	0	0	0	0	0	0	0
8:15 AM	1	16	0	190	0	0	0	0	207	0	0	0	0	0	0	0	0	0
8:30 AM	1	17	0	201	0	0	0	0	219	0	0	0	0	0	0	0	0	0
Total Volume	2	50	1	811	0	0	0	0	864	0	0	0	0	0	0	0	0	0
% Approach Total	0.2	5.8	0.1	93.9	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
PHF	0.500	0.735	0.250	0.930	0.000	0.000	0.000	0.000	0.964	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Cars	0	50	1	802	0	0	0	0	853	0	0	0	0	0	0	0	0	0
Cars %	0.0	100.0	100.0	98.9	0.0	0.0	0.0	0.0	98.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heavy Vehicles	2	0	0	9	0	0	0	0	11	0	0	0	0	0	0	0	0	0
Heavy Vehicles %	100.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cars Enter Leg	0	50	1	802	0	0	0	0	853	0	0	0	0	0	0	0	0	0
Heavy Enter Leg	2	0	0	9	0	0	0	0	11	0	0	0	0	0	0	0	0	0
Total Entering Leg	2	50	1	811	0	0	0	0	864	0	0	0	0	0	0	0	0	0
Cars Exiting Leg									404									33
Heavy Exiting Leg									9									16
Total Exiting Leg									413									49

	Washington Street from West									Carriage Road from Northwest									
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Total
7:45 AM	3	7	0	84	0	17	0	0	111	2	8	0	0	0	0	0	0	10	602
8:00 AM	2	5	0	70	0	11	1	0	89	12	6	0	0	0	0	0	0	18	603
8:15 AM	2	3	0	61	2	15	0	0	83	13	1	0	0	0	0	0	0	14	546
8:30 AM	0	4	0	83	2	13	1	0	103	11	6	1	0	0	0	0	0	18	580
Total Volume	7	19	0	298	4	56	2	0	386	38	21	1	0	0	0	0	0	60	2331
% Approach Total	1.8	4.9	0.0	77.2	1.0	14.5	0.5	0.0		63.3	35.0	1.7	0.0	0.0	0.0	0.0	0.0		
PHF	0.583	0.679	0.000	0.887	0.500	0.824	0.500	0.000	0.869	0.731	0.656	0.250	0.000	0.000	0.000	0.000	0.000	0.833	0.966
Cars	7	19	0	281	4	54	1	0	366	36	21	0	0	0	0	0	0	57	2260
Cars %	100.0	100.0	0.0	94.3	100.0	96.4	50.0	0.0	94.8	94.7	100.0	0.0	0.0	0.0	0.0	0.0	0.0	95.0	97.0
Heavy Vehicles	0	0	0	17	0	2	1	0	20	28	15	1	0	0	0	0	0	44	112
Heavy Vehicles %	0.0	0.0	0.0	5.7	0.0	3.6	50.0	0.0	5.2	73.7	71.4	100.0	0.0	0.0	0.0	0.0	0.0	73.3	4.8
Cars Enter Leg	7	19	0	281	4	54	1	0	366	36	21	0	0	0	0	0	0	57	2260
Heavy Enter Leg	0	0	0	17	0	2	1	0	20	28	15	1	0	0	0	0	0	44	112
Total Entering Leg	7	19	0	298	4	56	2	0	386	64	36	1	0	0	0	0	0	101	2372
Cars Exiting Leg									315									10	2260
Heavy Exiting Leg									40									2	112
Total Exiting Leg									355									12	2372

PRECISION DATA INDUSTRIES, LLC

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

PDI File #: **175958 A**
Location: **N: Commonwealth Avenue (Route 30) S: Commonwealth Avenue (Route 30) NE: Carriage Road NW: Carriage Road**
Location: **E: Washington Street W: Washington Street SE: Carriage Road SW: Carriage Road**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 08, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

Cars

	Commonwealth Avenue (Route 30) from North									Carriage Road from Northeast								
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
7:00 AM	0	0	1	55	0	25	2	1	84	0	0	0	0	0	0	0	0	0
7:15 AM	0	1	0	50	0	27	0	3	81	0	0	0	0	0	0	0	0	0
7:30 AM	1	0	1	82	0	31	0	9	124	0	0	0	0	0	0	0	0	0
7:45 AM	0	1	0	88	0	18	0	7	114	0	0	0	0	0	0	0	0	0
Total	1	2	2	275	0	101	2	20	403	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	96	0	25	1	5	127	0	0	0	0	0	0	0	0	0
8:15 AM	0	1	0	77	0	20	0	4	102	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	1	75	0	25	1	5	107	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	1	61	0	22	3	3	90	0	0	0	0	0	0	0	0	0
Total	0	1	2	309	0	92	5	17	426	0	0	0	0	0	0	0	0	0
Grand Total	1	3	4	584	0	193	7	37	829	0	0	0	0	0	0	0	0	0
Approach %	0.1	0.4	0.5	70.4	0.0	23.3	0.8	4.5		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total %	0.0	0.1	0.1	13.8	0.0	4.6	0.2	0.9	19.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total									1703									58

	Washington Street from East									Carriage Road from Southeast								
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
7:00 AM	4	10	1	53	0	8	0	0	76	18	3	0	0	0	0	0	0	21
7:15 AM	5	30	1	54	0	8	0	0	98	31	1	0	0	0	0	0	0	32
7:30 AM	1	15	3	46	4	5	0	0	74	32	7	0	0	0	0	0	0	39
7:45 AM	1	15	2	71	1	14	0	0	104	37	5	0	0	0	0	0	0	42
Total	11	70	7	224	5	35	0	0	352	118	16	0	0	0	0	0	0	134
8:00 AM	0	22	3	60	0	18	0	0	103	29	3	0	0	0	0	0	0	32
8:15 AM	0	12	3	74	2	11	0	0	102	24	4	0	0	0	0	0	0	28
8:30 AM	0	15	1	72	1	6	0	0	95	21	7	0	0	0	0	0	0	28
8:45 AM	0	16	4	53	2	14	0	0	89	22	1	0	0	0	0	0	0	23
Total	0	65	11	259	5	49	0	0	389	96	15	0	0	0	0	0	0	111
Grand Total	11	135	18	483	10	84	0	0	741	214	31	0	0	0	0	0	0	245
Approach %	1.5	18.2	2.4	65.2	1.3	11.3	0.0	0.0		87.3	12.7	0.0	0.0	0.0	0.0	0.0	0.0	
Total %	0.3	3.2	0.4	11.4	0.2	2.0	0.0	0.0	17.5	5.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	5.8
Exiting Leg Total									1131									0

	Commonwealth Avenue (Route 30) from South									Carriage Road from Southwest								
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
7:00 AM	0	10	0	128	0	1	0	0	139	0	0	0	0	0	0	0	0	0
7:15 AM	0	13	0	160	0	0	0	0	173	0	0	0	0	0	0	0	0	0
7:30 AM	0	10	0	185	0	0	0	0	195	0	0	0	0	0	0	0	0	0
7:45 AM	0	12	0	198	0	0	0	0	210	0	0	0	0	0	0	0	0	0
Total	0	45	0	671	0	1	0	0	717	0	0	0	0	0	0	0	0	0
8:00 AM	0	5	1	217	0	0	0	0	223	0	0	0	0	0	0	0	0	0
8:15 AM	0	16	0	188	0	0	0	0	204	0	0	0	0	0	0	0	0	0
8:30 AM	0	17	0	199	0	0	0	0	216	0	0	0	0	0	0	0	0	0
8:45 AM	0	18	0	162	0	0	0	0	180	0	0	0	0	0	0	0	0	0
Total	0	56	1	766	0	0	0	0	823	0	0	0	0	0	0	0	0	0
Grand Total	0	101	1	1437	0	1	0	0	1540	0	0	0	0	0	0	0	0	0
Approach %	0.0	6.6	0.1	93.3	0.0	0.1	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total %	0.0	2.4	0.0	33.9	0.0	0.0	0.0	0.0	36.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total									709									71

	Washington Street from West									Carriage Road from Northwest									
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Total
7:00 AM	1	3	0	83	1	6	0	0	94	8	9	0	0	0	0	0	0	17	431
7:15 AM	2	6	0	89	2	10	0	0	109	3	5	0	0	0	0	0	0	8	501
7:30 AM	1	7	0	87	0	10	1	0	106	4	3	0	0	0	0	0	0	7	545
7:45 AM	3	7	0	78	0	17	0	0	105	2	8	0	0	0	0	0	0	10	585
Total	7	23	0	337	3	43	1	0	414	17	25	0	0	0	0	0	0	42	2062
8:00 AM	2	5	0	68	0	10	1	0	86	10	6	0	0	0	0	0	0	16	587
8:15 AM	2	3	0	56	2	15	0	0	78	13	1	0	0	0	0	0	0	14	528
8:30 AM	0	4	0	79	2	12	0	0	97	11	6	0	0	0	0	0	0	17	560
8:45 AM	0	6	0	83	1	14	0	0	104	9	8	0	0	0	0	0	0	17	503
Total	4	18	0	286	5	51	1	0	365	43	21	0	0	0	0	0	0	64	2178
Grand Total	11	41	0	623	8	94	2	0	779	60	46	0	0	0	0	0	0	106	4240
Approach %	1.4	5.3	0.0	80.0	1.0	12.1	0.3	0.0		56.6	43.4	0.0	0.0	0.0	0.0	0.0	0.0		
Total %	0.3	1.0	0.0	14.7	0.2	2.2	0.0	0.0	18.4	1.4	1.1	0.0	0.0	0.0	0.0	0.0	0.0	2.5	
Exiting Leg Total									547									21	4240

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

7:45 AM	Commonwealth Avenue (Route 30) from North									Carriage Road from Northeast								
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
7:45 AM	0	1	0	88	0	18	0	7	114	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	96	0	25	1	5	127	0	0	0	0	0	0	0	0	0
8:15 AM	0	1	0	77	0	20	0	4	102	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	1	75	0	25	1	5	107	0	0	0	0	0	0	0	0	0
Total Volume	0	2	1	336	0	88	2	21	450	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.4	0.2	74.7	0.0	19.6	0.4	4.7		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
PHF	0.000	0.500	0.250	0.875	0.000	0.880	0.500	0.750	0.886	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	2	1	336	0	88	2	21	450	0	0	0	0	0	0	0	0	0
Exiting Leg									941									27
Total									1391									27

	Washington Street from East									Carriage Road from Southeast								
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
7:45 AM	1	15	2	71	1	14	0	0	104	37	5	0	0	0	0	0	0	42
8:00 AM	0	22	3	60	0	18	0	0	103	29	3	0	0	0	0	0	0	32
8:15 AM	0	12	3	74	2	11	0	0	102	24	4	0	0	0	0	0	0	28
8:30 AM	0	15	1	72	1	6	0	0	95	21	7	0	0	0	0	0	0	28
Total Volume	1	64	9	277	4	49	0	0	404	111	19	0	0	0	0	0	0	130
% Approach Total	0.2	15.8	2.2	68.6	1.0	12.1	0.0	0.0		85.4	14.6	0.0	0.0	0.0	0.0	0.0	0.0	
PHF	0.250	0.727	0.750	0.936	0.500	0.681	0.000	0.000	0.971	0.750	0.679	0.000	0.000	0.000	0.000	0.000	0.000	0.774
Entering Leg	1	64	9	277	4	49	0	0	404	111	19	0	0	0	0	0	0	130
Exiting Leg									530									0
Total									934									130

	Commonwealth Avenue (Route 30) from South									Carriage Road from Southwest								
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
7:45 AM	0	12	0	198	0	0	0	0	210	0	0	0	0	0	0	0	0	0
8:00 AM	0	5	1	217	0	0	0	0	223	0	0	0	0	0	0	0	0	0
8:15 AM	0	16	0	188	0	0	0	0	204	0	0	0	0	0	0	0	0	0
8:30 AM	0	17	0	199	0	0	0	0	216	0	0	0	0	0	0	0	0	0
Total Volume	0	50	1	802	0	0	0	0	853	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	5.9	0.1	94.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
PHF	0.000	0.735	0.250	0.924	0.000	0.000	0.000	0.000	0.956	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	50	1	802	0	0	0	0	853	0	0	0	0	0	0	0	0	0
Exiting Leg									404									33
Total									1257									33

	Washington Street from West									Carriage Road from Northwest									
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Total
7:45 AM	3	7	0	78	0	17	0	0	105	2	8	0	0	0	0	0	0	10	585
8:00 AM	2	5	0	68	0	10	1	0	86	10	6	0	0	0	0	0	0	16	587
8:15 AM	2	3	0	56	2	15	0	0	78	13	1	0	0	0	0	0	0	14	528
8:30 AM	0	4	0	79	2	12	0	0	97	11	6	0	0	0	0	0	0	17	560
Total Volume	7	19	0	281	4	54	1	0	366	36	21	0	0	0	0	0	0	57	2260
% Approach Total	1.9	5.2	0.0	76.8	1.1	14.8	0.3	0.0		63.2	36.8	0.0	0.0	0.0	0.0	0.0	0.0		
PHF	0.583	0.679	0.000	0.889	0.500	0.794	0.250	0.000	0.871	0.692	0.656	0.000	0.000	0.000	0.000	0.000	0.000	0.838	0.963
Entering Leg	7	19	0	281	4	54	1	0	366	36	21	0	0	0	0	0	0	57	2260
Exiting Leg									315									10	2260
Total									681									67	4520

PRECISION DATA INDUSTRIES, LLC

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

PDI File #: **175958 A**
Location: **N: Commonwealth Avenue (Route 30) S: Commonwealth Avenue (Route 30) NE: Carriage Road NW: Carriage Road**
Location: **E: Washington Street W: Washington Street SE: Carriage Road SW: Carriage Road**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 08, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

Heavy Vehicles (Combined-Large Trucks and Buses)

	Commonwealth Avenue (Route 30) from North									Carriage Road from Northeast								
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
7:00 AM	0	0	0	2	0	1	0	0	3	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	2	0	2	0	0	4	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	3	0	3	0	0	6	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0
Total	0	0	0	7	0	8	0	0	15	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	2	0	2	0	1	5	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	1	0	1	0	0	2	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	4	0	2	1	0	7	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	2	0	2	0	2	6	0	0	0	0	0	0	0	0	0
Total	0	0	0	9	0	7	1	3	20	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	16	0	15	1	3	35	0	0	0	0	0	0	0	0	0
Approach %	0.0	0.0	0.0	45.7	0.0	42.9	2.9	8.6		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total %	0.0	0.0	0.0	7.2	0.0	6.7	0.4	1.3	15.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total									36									3
Large Trucks	0	0	0	13	0	3	1	1	18	0	0	0	0	0	0	0	0	0
% Large Trucks	0.0	0.0	0.0	81.3	0.0	20.0	100.0	33.3	51.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total									22									1
Buses	0	0	0	3	0	12	0	2	17	0	0	0	0	0	0	0	0	0
% Buses	0.0	0.0	0.0	18.8	0.0	80.0	0.0	66.7	48.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total									14									2

	Washington Street from East									Carriage Road from Southeast								
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
7:00 AM	0	3	0	5	0	0	0	0	8	0	0	0	0	0	0	0	0	0
7:15 AM	0	3	0	3	0	0	0	0	6	0	0	0	0	0	0	0	0	0
7:30 AM	0	1	0	3	0	0	0	0	4	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	3	0	0	0	0	3	2	0	0	0	0	0	0	0	2
Total	0	7	0	14	0	0	0	0	21	2	0	0	0	0	0	0	0	2
8:00 AM	0	0	0	4	0	0	0	0	4	1	0	0	0	0	0	0	0	1
8:15 AM	0	1	1	5	1	0	0	0	8	0	0	0	0	0	0	0	0	0
8:30 AM	1	1	0	0	0	1	0	0	3	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	3	0	0	0	0	3	1	0	0	0	0	0	1	0	2
Total	1	2	1	12	1	1	0	0	18	2	0	0	0	0	0	1	0	3
Grand Total	1	9	1	26	1	1	0	0	39	4	0	0	0	0	0	1	0	5
Approach %	2.6	23.1	2.6	66.7	2.6	2.6	0.0	0.0		80.0	0.0	0.0	0.0	0.0	0.0	20.0	0.0	
Total %	0.4	4.0	0.4	11.7	0.4	0.4	0.0	0.0	17.5	1.8	0.0	0.0	0.0	0.0	0.0	0.4	0.0	2.2
Exiting Leg Total									54									3
Large Trucks	0	4	0	8	0	0	0	0	12	0	0	0	0	0	0	1	0	1
% Large Trucks	0.0	44.4	0.0	30.8	0.0	0.0	0.0	0.0	30.8	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	20.0
Exiting Leg Total									18									3
Buses	1	5	1	18	1	1	0	0	27	4	0	0	0	0	0	0	0	4
% Buses	100.0	55.6	100.0	69.2	100.0	100.0	0.0	0.0	69.2	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	80.0
Exiting Leg Total									36									0

	Commonwealth Avenue (Route 30) from South									Carriage Road from Southwest								
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
7:00 AM	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0
7:30 AM	1	0	0	2	0	0	0	0	3	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0	0
Total	1	0	0	11	0	0	0	0	12	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0
8:15 AM	1	0	0	2	0	0	0	0	3	0	0	0	0	0	0	0	0	0
8:30 AM	1	0	0	2	0	0	0	0	3	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	6	0	0	0	0	6	0	0	0	0	0	0	0	0	0
Total	2	0	0	11	0	0	0	0	13	0	0	0	0	0	0	0	0	0
Grand Total	3	0	0	22	0	0	0	0	25	0	0	0	0	0	0	0	0	0
Approach %	12.0	0.0	0.0	88.0	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 %	1.3	0.0	0.0	9.9	0.0	0.0	0.0	0.0	11.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total									20									34
Large Trucks	3	0	0	16	0	0	0	0	19	0	0	0	0	0	0	0	0	0
% Large Trucks	100.0	0.0	0.0	72.7	0.0	0.0	0.0	0.0	76.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total									16									1
Buses	0	0	0	6	0	0	0	0	6	0	0	0	0	0	0	0	0	0
% Buses	0.0	0.0	0.0	27.3	0.0	0.0	0.0	0.0	24.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total									4									2

	Washington Street from West									Carriage Road from Northwest									
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Total
7:00 AM	0	0	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0	0	17
7:15 AM	0	0	0	4	0	0	0	0	4	3	6	0	0	0	0	0	0	9	26
7:30 AM	0	0	0	4	0	0	0	0	4	5	4	0	0	0	0	0	0	9	26
7:45 AM	0	0	0	6	0	0	0	0	6	2	8	0	0	0	0	0	0	10	27
Total	0	0	0	18	0	0	0	0	18	10	18	0	0	0	0	0	0	28	96
8:00 AM	0	0	0	2	0	1	0	0	3	2	0	0	0	0	0	0	0	2	16
8:15 AM	0	0	0	5	0	0	0	0	5	13	1	0	0	0	0	0	0	14	32
8:30 AM	0	0	0	4	0	1	1	0	6	11	6	1	0	0	0	0	0	18	37
8:45 AM	0	1	0	6	1	0	0	0	8	9	8	0	0	0	0	0	0	17	42
Total	0	1	0	17	1	2	1	0	22	35	15	1	0	0	0	0	0	51	127
Grand Total	0	1	0	35	1	2	1	0	40	45	33	1	0	0	0	0	0	79	223
Approach %	0.0	2.5	0.0	87.5	2.5	5.0	2.5	0.0		57.0	41.8	1.3	0.0	0.0	0.0	0.0	0.0		
Total %	0.0	0.4	0.0	15.7	0.4	0.9	0.4	0.0	17.9	20.2	14.8	0.4	0.0	0.0	0.0	0.0	0.0	35.4	
Exiting Leg Total									71									2	223
Large Trucks	0	1	0	15	0	1	1	0	18	0	1	1	0	0	0	0	0	2	70
% Large Trucks	0.0	100.0	0.0	42.9	0.0	50.0	100.0	0.0	45.0	0.0	3.0	100.0	0.0	0.0	0.0	0.0	0.0	2.5	31.4
Exiting Leg Total									8									1	70
Buses	0	0	0	20	1	1	0	0	22	3	1	0	0	0	0	0	0	4	80
% Buses	0.0	0.0	0.0	57.1	100.0	50.0	0.0	0.0	55.0	6.7	3.0	0.0	0.0	0.0	0.0	0.0	0.0	5.1	35.9
Exiting Leg Total									21									1	80

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:
8:00 AM

	Commonwealth Avenue (Route 30) from North									Carriage Road from Northeast								
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
8:00 AM	0	0	0	2	0	2	0	1	5	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	1	0	1	0	0	2	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	4	0	2	1	0	7	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	2	0	2	0	2	6	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	9	0	7	1	3	20	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0	45.0	0.0	35.0	5.0	15.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
PHF	0.000	0.000	0.000	0.563	0.000	0.875	0.250	0.375	0.714	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Large Trucks	0	0	0	8	0	2	1	1	12	0	0	0	0	0	0	0	0	0
Large Trucks %	0.0	0.0	0.0	88.9	0.0	28.6	100.0	33.3	60.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Buses	0	0	0	1	0	5	0	2	8	0	0	0	0	0	0	0	0	0
Buses %	0.0	0.0	0.0	11.1	0.0	71.4	0.0	66.7	40.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Trucks Enter Leg	0	0	0	8	0	2	1	1	12	0	0	0	0	0	0	0	0	0
Bus Enter Leg	0	0	0	1	0	5	0	2	8	0	0	0	0	0	0	0	0	0
Total Entering Leg	0	0	0	9	0	7	1	3	20	0	0	0	0	0	0	0	0	0
Trucks Exiting Leg									10									1
Buses Exiting Leg									8									2
Total Exiting Leg									18									3

	Washington Street from East									Carriage Road from Southeast								
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
8:00 AM	0	0	0	4	0	0	0	0	4	1	0	0	0	0	0	0	0	1
8:15 AM	0	1	1	5	1	0	0	0	8	0	0	0	0	0	0	0	0	0
8:30 AM	1	1	0	0	0	1	0	0	3	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	3	0	0	0	0	3	1	0	0	0	0	0	1	0	2
Total Volume	1	2	1	12	1	1	0	0	18	2	0	0	0	0	0	1	0	3
% Approach Total	5.6	11.1	5.6	66.7	5.6	5.6	0.0	0.0		66.7	0.0	0.0	0.0	0.0	0.0	33.3	0.0	
PHF	0.250	0.500	0.250	0.600	0.250	0.250	0.000	0.000	0.563	0.500	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.375
Large Trucks	0	1	0	5	0	0	0	0	6	0	0	0	0	0	0	1	0	1
Large Trucks %	0.0	50.0	0.0	41.7	0.0	0.0	0.0	0.0	33.3	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	33.3
Buses	1	1	1	7	1	1	0	0	12	2	0	0	0	0	0	0	0	2
Buses %	100.0	50.0	100.0	58.3	100.0	100.0	0.0	0.0	66.7	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	66.7
Trucks Enter Leg	0	1	0	5	0	0	0	0	6	0	0	0	0	0	0	1	0	1
Bus Enter Leg	1	1	1	7	1	1	0	0	12	2	0	0	0	0	0	0	0	2
Total Entering Leg	1	2	1	12	1	1	0	0	18	2	0	0	0	0	0	1	0	3
Trucks Exiting Leg									11									2
Buses Exiting Leg									15									0
Total Exiting Leg									26									2

	Commonwealth Avenue (Route 30) from South									Carriage Road from Southwest								
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
8:00 AM	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0
8:15 AM	1	0	0	2	0	0	0	0	3	0	0	0	0	0	0	0	0	0
8:30 AM	1	0	0	2	0	0	0	0	3	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	6	0	0	0	0	6	0	0	0	0	0	0	0	0	0
Total Volume	2	0	0	11	0	0	0	0	13	0	0	0	0	0	0	0	0	0
% Approach Total	15.4	0.0	0.0	84.6	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
PHF	0.500	0.000	0.000	0.458	0.000	0.000	0.000	0.000	0.542	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Large Trucks	2	0	0	7	0	0	0	0	9	0	0	0	0	0	0	0	0	0
Large Trucks %	100.0	0.0	0.0	63.6	0.0	0.0	0.0	0.0	69.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Buses	0	0	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0	0
Buses %	0.0	0.0	0.0	36.4	0.0	0.0	0.0	0.0	30.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Trucks Enter Leg	2	0	0	7	0	0	0	0	9	0	0	0	0	0	0	0	0	0
Bus Enter Leg	0	0	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0	0
Total Entering Leg	2	0	0	11	0	0	0	0	13	0	0	0	0	0	0	0	0	0
Trucks Exiting Leg									11									0
Buses Exiting Leg									2									1
Total Exiting Leg									13									1

	Washington Street from West									Carriage Road from Northwest									
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Total
8:00 AM	0	0	0	2	0	1	0	0	3	2	0	0	0	0	0	0	0	2	16
8:15 AM	0	0	0	5	0	0	0	0	5	13	1	0	0	0	0	0	0	14	32
8:30 AM	0	0	0	4	0	1	1	0	6	11	6	1	0	0	0	0	0	18	37
8:45 AM	0	1	0	6	1	0	0	0	8	9	8	0	0	0	0	0	0	17	42
Total Volume	0	1	0	17	1	2	1	0	22	35	15	1	0	0	0	0	0	51	127
% Approach Total	0.0	4.5	0.0	77.3	4.5	9.1	4.5	0.0		68.6	29.4	2.0	0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.250	0.000	0.708	0.250	0.500	0.250	0.000	0.688	0.673	0.469	0.250	0.000	0.000	0.000	0.000	0.000	0.708	0.756
Large Trucks	0	1	0	9	0	1	1	0	12	0	0	1	0	0	0	0	0	1	41
Large Trucks %	0.0	100.0	0.0	52.9	0.0	50.0	100.0	0.0	54.5	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	2.0	32.3
Buses	0	0	0	8	1	1	0	0	10	2	0	0	0	0	0	0	0	2	38
Buses %	0.0	0.0	0.0	47.1	100.0	50.0	0.0	0.0	45.5	5.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.9	29.9
Trucks Enter Leg	0	1	0	9	0	1	1	0	12	0	0	1	0	0	0	0	0	1	41
Bus Enter Leg	0	0	0	8	1	1	0	0	10	2	0	0	0	0	0	0	0	2	38
Total Entering Leg	0	1	0	17	1	2	1	0	22	2	0	1	0	0	0	0	0	3	79
Trucks Exiting Leg									5									1	41
Buses Exiting Leg									9									1	38
Total Exiting Leg									14									2	79

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

PDI File #: **175958 A**
Location: **N: Commonwealth Avenue (Route 30) S: Commonwealth Avenue (Route 30) NE: Carriage Road NW: Carriage Road**
Location: **E: Washington Street W: Washington Street SE: Carriage Road SW: Carriage Road**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 08, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

Large Trucks

	Commonwealth Avenue (Route 30) from North									Carriage Road from Northeast									Washington Street from East									Carriage Road from Southeast								
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
7:00 AM	0	0	0	2	0	0	0	0	2	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	0
7:15 AM	0	0	0	1	0	0	0	0	1	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	0
7:30 AM	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0	3	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	1	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	0	0	0
Total	0	0	0	5	0	1	0	0	6	0	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	6	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	2	0	1	0	0	3	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	0	0
8:15 AM	0	0	0	1	0	1	0	0	2	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	0	0
8:30 AM	0	0	0	3	0	0	1	0	4	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	0
8:45 AM	0	0	0	2	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	0	0	0	0	0	0	1	0	1
Total	0	0	0	8	0	2	1	1	12	0	0	0	0	0	0	0	0	0	0	1	0	5	0	0	0	0	6	0	0	0	0	0	0	1	0	1
Grand Total	0	0	0	13	0	3	1	1	18	0	0	0	0	0	0	0	0	0	0	4	0	8	0	0	0	0	12	0	0	0	0	0	0	1	0	1
Approach %	0.0	0.0	0.0	72.2	0.0	16.7	5.6	5.6		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	33.3	0.0	66.7	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	
Total %	0.0	0.0	0.0	18.6	0.0	4.3	1.4	1.4	25.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.7	0.0	11.4	0.0	0.0	0.0	0.0	17.1	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	1.4
Exiting Leg Total									22									1									18									3

	Commonwealth Avenue (Route 30) from South									Carriage Road from Southwest									Washington Street from West									Carriage Road from Northwest									
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Total
7:00 AM	0	0	0	1	0	0	0	0	1	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	0	0	6
7:15 AM	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	0	0	0	0	0	0	1	6
7:30 AM	1	0	0	2	0	0	0	0	3	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	0	0	10
7:45 AM	0	0	0	4	0	0	0	0	4	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	0	0	7
Total	1	0	0	9	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	6	0	1	0	0	0	0	0	0	1	29
8:00 AM	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	3	0	0	0	0	0	0	0	0	0	8
8:15 AM	1	0	0	0	0	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	0	0	0	5
8:30 AM	1	0	0	2	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	2	0	0	1	0	0	0	0	0	1	11
8:45 AM	0	0	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	1	0	5	0	0	0	0	6	0	0	0	0	0	0	0	0	0	17
Total	2	0	0	7	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	1	0	9	0	1	1	0	12	0	0	1	0	0	0	0	0	1	41
Grand Total	3	0	0	16	0	0	0	0	19	0	0	0	0	0	0	0	0	0	0	1	0	15	0	1	1	0	18	0	1	1	0	0	0	0	0	2	70
Approach %	15.8	0.0	0.0	84.2	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	5.6	0.0	83.3	0.0	5.6	5.6	0.0		0.0	50.0	50.0	0.0	0.0	0.0	0.0	0.0		
Total %	4.3	0.0	0.0	22.9	0.0	0.0	0.0	0.0	27.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	21.4	0.0	1.4	1.4	0.0	25.7	0.0	1.4	1.4	0.0	0.0	0.0	0.0	0.0	2.9	
Exiting Leg Total									16									1									8									1	70

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

8:00 AM	Commonwealth Avenue (Route 30) from North									Carriage Road from Northeast									Washington Street from East									Carriage Road from Southeast								
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
8:00 AM	0	0	0	2	0	1	0	0	3	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	0	0
8:15 AM	0	0	0	1	0	1	0	0	2	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	0	0
8:30 AM	0	0	0	3	0	0	1	0	4	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	0
8:45 AM	0	0	0	2	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	0	0	0	0	0	0	1	0	1
Total Volume	0	0	0	8	0	2	1	1	12	0	0	0	0	0	0	0	0	0	0	1	0	5	0	0	0	0	6	0	0	0	0	0	0	1	0	1
% Approach Total	0.0	0.0	0.0	66.7	0.0	16.7	8.3	8.3		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	16.7	0.0	83.3	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	
PHF	0.000	0.000	0.000	0.667	0.000	0.500	0.250	0.250	0.750	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.417	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.250
Entering Leg	0	0	0	8	0	2	1	1	12	0	0	0	0	0	0	0	0	0	0	1	0	5	0	0	0	0	6	0	0	0	0	0	0	1	0	1
Exiting Leg									10									1									11									2
Total									22									1									17									3

8:00 AM	Commonwealth Avenue (Route 30) from South									Carriage Road from Southwest									Washington Street from West									Carriage Road from Northwest									
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Total
8:00 AM	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	3	0	0	0	0	0	0	0	0	0	8
8:15 AM	1	0	0	0	0	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	0	0	0	5
8:30 AM	1	0	0	2	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	2	0	0	1	0	0	0	0	0	1	11
8:45 AM	0	0	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	1	0	5	0	0	0	0	6	0	0	0	0	0	0	0	0	0	17
Total Volume	2	0	0	7	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	1	0	9	0	1	1	0	12	0	0	1	0	0	0	0	0	1	41
% Approach Total	22.2	0.0	0.0	77.8	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	8.3	0.0	75.0	0.0	8.3	8.3	0.0		0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0		
PHF	0.500	0.000	0.000	0.438	0.000	0.000	0.000	0.000	0.563	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.450	0.000	0.250	0.250	0.000	0.500	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.250	0.603
Entering Leg	2	0	0	7	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	1	0	9	0	1	1	0	12	0	0	1	0	0	0	0	0	1	41
Exiting Leg									11									0									5									1	41
Total									20									0									17									2	82

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

PDI File #: **175958 A**
Location: **N: Commonwealth Avenue (Route 30) S: Commonwealth Avenue (Route 30) NE: Carriage Road NW: Carriage Road**
Location: **E: Washington Street W: Washington Street SE: Carriage Road SW: Carriage Road**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 08, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

Buses

	Commonwealth Avenue (Route 30) from North									Carriage Road from Northeast								
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
7:00 AM	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	1	0	2	0	0	3	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	1	0	3	0	0	4	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0
Total	0	0	0	2	0	7	0	0	9	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	1	0	1	2	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	0	0	0
8:30 AM	0	0	0	1	0	2	0	0	3	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	2	0	1	3	0	0	0	0	0	0	0	0	0
Total	0	0	0	1	0	5	0	2	8	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	3	0	12	0	2	17	0	0	0	0	0	0	0	0	0
Approach %	0.0	0.0	0.0	17.6	0.0	70.6	0.0	11.8		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total %	0.0	0.0	0.0	3.8	0.0	15.0	0.0	2.5	21.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total									14									2

	Washington Street from East									Carriage Road from Southeast								
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
7:00 AM	0	2	0	5	0	0	0	0	7	0	0	0	0	0	0	0	0	0
7:15 AM	0	2	0	3	0	0	0	0	5	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0	2
Total	0	4	0	11	0	0	0	0	15	2	0	0	0	0	0	0	0	2
8:00 AM	0	0	0	3	0	0	0	0	3	1	0	0	0	0	0	0	0	1
8:15 AM	0	1	1	4	1	0	0	0	7	0	0	0	0	0	0	0	0	0
8:30 AM	1	0	0	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Total	1	1	1	7	1	1	0	0	12	2	0	0	0	0	0	0	0	2
Grand Total	1	5	1	18	1	1	0	0	27	4	0	0	0	0	0	0	0	4
Approach %	3.7	18.5	3.7	66.7	3.7	3.7	0.0	0.0		100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total %	1.3	6.3	1.3	22.5	1.3	1.3	0.0	0.0	33.8	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0
Exiting Leg Total									36									0

	Commonwealth Avenue (Route 30) from South									Carriage Road from Southwest								
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
7:00 AM	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	1	0	0	0	0	1	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	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
Total	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	2	0	0	0	0	2	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
8:45 AM	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0
Total	0	0	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	6	0	0	0	0	6	0	0	0	0	0	0	0	0	0
Approach %	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	
Total %	0.0	0.0	0.0	7.5	0.0	0.0	0.0	0.0	7.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total									4									2

	Washington Street from West									Carriage Road from Northwest									
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Total
7:00 AM	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	11
7:15 AM	0	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	12
7:30 AM	0	0	0	2	0	0	0	0	2	1	1	0	0	0	0	0	0	2	9
7:45 AM	0	0	0	5	0	0	0	0	5	0	0	0	0	0	0	0	0	0	10
Total	0	0	0	12	0	0	0	0	12	1	1	0	0	0	0	0	0	2	42
8:00 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	8
8:15 AM	0	0	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0	0	13
8:30 AM	0	0	0	3	0	1	0	0	4	0	0	0	0	0	0	0	0	0	9
8:45 AM	0	0	0	1	1	0	0	0	2	0	0	0	0	0	0	0	0	0	8
Total	0	0	0	8	1	1	0	0	10	2	0	0	0	0	0	0	0	2	38
Grand Total	0	0	0	20	1	1	0	0	22	3	1	0	0	0	0	0	0	4	80
Approach %	0.0	0.0	0.0	90.9	4.5	4.5	0.0	0.0		75.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	25.0	1.3	1.3	0.0	0.0	27.5	3.8	1.3	0.0	0.0	0.0	0.0	0.0	0.0	5.0	
Exiting Leg Total									21									1	80

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

7:00 AM

	Commonwealth Avenue (Route 30) from North									Carriage Road from Northeast								
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
7:00 AM	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	1	0	2	0	0	3	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	1	0	3	0	0	4	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	2	0	7	0	0	9	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0	22.2	0.0	77.8	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	0.500	0.000	0.583	0.000	0.000	0.563	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	2	0	7	0	0	9	0	0	0	0	0	0	0	0	0
Exiting Leg									6									0
Total									15									0

	Washington Street from East									Carriage Road from Southeast								
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
7:00 AM	0	2	0	5	0	0	0	0	7	0	0	0	0	0	0	0	0	0
7:15 AM	0	2	0	3	0	0	0	0	5	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0	2
Total Volume	0	4	0	11	0	0	0	0	15	2	0	0	0	0	0	0	0	2
% Approach Total	0.0	26.7	0.0	73.3	0.0	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	0.500	0.000	0.550	0.000	0.000	0.000	0.000	0.536	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250
Entering Leg	0	4	0	11	0	0	0	0	15	2	0	0	0	0	0	0	0	2
Exiting Leg									21									0
Total									36									2

	Commonwealth Avenue (Route 30) from South									Carriage Road from Southwest								
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
7:00 AM	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	1	0	0	0	0	1	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	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
Total Volume	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0
% Approach Total	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	
PHF	0.000	0.000	0.000	0.500	0.000	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
Entering Leg	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0
Exiting Leg									2									1
Total									4									1

	Washington Street from West									Carriage Road from Northwest									
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Total
7:00 AM	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	11
7:15 AM	0	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	12
7:30 AM	0	0	0	2	0	0	0	0	2	1	1	0	0	0	0	0	0	2	9
7:45 AM	0	0	0	5	0	0	0	0	5	0	0	0	0	0	0	0	0	0	10
Total Volume	0	0	0	12	0	0	0	0	12	1	1	0	0	0	0	0	0	2	42
% Approach Total	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0		50.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.600	0.000	0.000	0.000	0.000	0.600	0.250	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.875
Entering Leg	0	0	0	12	0	0	0	0	12	1	1	0	0	0	0	0	0	2	42
Exiting Leg									12									0	42
Total									24									2	84

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

PDI File #: **175958 A**
Location: **N: Commonwealth Avenue (Route 30) S: Commonwealth Avenue (Route 30) NE: Carriage Road NW: Carriage Road**
Location: **E: Washington Street W: Washington Street SE: Carriage Road SW: Carriage Road**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 08, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

Bicycles (on Roadway and Crosswalks)

Commonwealth Avenue (Route 30) from North

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-EB	CW-WB	Total
7:00 AM	0	0	0	0	0	0	0	0	0	1	1
7:15 AM	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
7:45 AM	0	0	0	0	0	0	0	0	1	0	1
Total	0	0	0	0	0	0	0	0	1	1	2
8:00 AM	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
8:30 AM	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	1	1	2
Approach %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	50.0	
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1	2.1	4.2
Exiting Leg Total											2

Carriage Road from Northeast

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-SEB	CW-NWB	Total
7:00 AM	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
7:30 AM	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
Total	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	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
8:30 AM	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0
Approach %	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	0.0	0.0	0.0	0.0
Exiting Leg Total											13

Washington Street from East

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-SB	CW-NB	Total
7:00 AM	0	0	0	2	0	0	0	0	0	0	2
7:15 AM	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	4	0	0	0	0	0	1	5
7:45 AM	0	0	0	4	0	0	0	0	0	0	4
Total	0	0	0	10	0	0	0	0	0	1	11
8:00 AM	0	0	0	2	0	0	0	0	0	0	2
8:15 AM	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
8:45 AM	0	0	0	2	0	0	0	0	0	0	2
Total	0	0	0	4	0	0	0	0	0	0	4
Grand Total	0	0	0	14	0	0	0	0	0	1	15
Approach %	0.0	0.0	0.0	93.3	0.0	0.0	0.0	0.0	0.0	6.7	
Total %	0.0	0.0	0.0	29.2	0.0	0.0	0.0	0.0	0.0	2.1	31.3
Exiting Leg Total											18

Carriage Road from Southeast

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-SWB	CW-NEB	Total
7:00 AM	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	2	0	0	0	0	0	0	0	0	2
7:30 AM	2	0	0	0	0	0	0	0	0	0	2
7:45 AM	0	0	0	0	0	0	0	0	0	0	0
Total	2	2	0	0	0	0	0	0	0	0	4
8:00 AM	0	2	0	0	0	0	0	0	0	0	2
8:15 AM	0	2	0	0	0	0	0	0	0	0	2
8:30 AM	0	3	0	0	0	0	0	0	0	0	3
8:45 AM	0	3	0	0	0	0	0	0	0	0	3
Total	0	10	0	0	0	0	0	0	0	0	10
Grand Total	2	12	0	0	0	0	0	0	0	0	14
Approach %	14.3	85.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total %	4.2	25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	29.2
Exiting Leg Total											0

Commonwealth Avenue (Route 30) from South

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-WB	CW-EB	Total
7:00 AM	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
7:30 AM	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
Total	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	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
8:30 AM	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0
Approach %	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	0.0	0.0	0.0	0.0
Exiting Leg Total											0

Carriage Road from Southwest

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-NWB	CW-SEB	Total
7:00 AM	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
7:30 AM	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
Total	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	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
8:30 AM	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0
Approach %	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	0.0	0.0	0.0	0.0
Exiting Leg Total											0

Washington Street from West

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-NB	CW-SB	Total
7:00 AM	0	0	0	1	0	0	0	0	0	0	1
7:15 AM	0	0	0	2	0	0	0	0	0	0	2
7:30 AM	0	0	0	2	1	0	0	0	0	0	3
7:45 AM	0	0	0	1	0	0	0	0	0	0	1
Total	0	0	0	6	1	0	0	0	0	0	7
8:00 AM	0	0	0	1	0	0	0	0	0	0	1
8:15 AM	0	0	0	3	0	0	0	0	0	0	3
8:30 AM	0	0	0	2	0	0	0	0	0	0	2
8:45 AM	0	0	0	3	0	0	0	0	0	0	3
Total	0	0	0	9	0	0	0	0	0	0	9
Grand Total	0	0	0	15	1	0	0	0	0	0	16
Approach %	0.0	0.0	0.0	93.8	6.3	0.0	0.0	0.0	0.0	0.0	
Total %	0.0	0.0	0.0	31.3	2.1	0.0	0.0	0.0	0.0	0.0	33.3
Exiting Leg Total											14

Carriage Road from Northwest

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-NEB	CW-SWB	Total
7:00 AM	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
7:30 AM	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	1	0	1
Total	0	0	0	0	0	0	0	0	1	0	1
8:00 AM	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
8:30 AM	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	1	0	1
Approach %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1	0.0	2.1
Exiting Leg Total											1

	Total
7:00 AM	4
7:15 AM	4
7:30 AM	10
7:45 AM	7
Total	25
8:00 AM	5
8:15 AM	5
8:30 AM	5
8:45 AM	8
Total	23
Grand Total	48
Exiting Leg Total	48

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

7:30 AM

Commonwealth Avenue (Route 30) from North

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-EB	CW-WB	Total
7:30 AM	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	1	0	1
8:00 AM	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
Total Volume	0	0	0	0	0	0	0	0	1	0	1
% Approach Total	0.0	0.0	0.0	0.0	0.0	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	0.250	0.000	0.250
Entering Leg	0	0	0	0	0	0	0	0	1	0	1
Exiting Leg											1
Total											2

Carriage Road from Northeast

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-SEB	CW-NWB	Total
7:30 AM	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
8:00 AM	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
Total Volume	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	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	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg											5
Total											5

Washington Street from East

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-SB	CW-NB	Total
7:30 AM	0	0	0	4	0	0	0	0	0	1	5
7:45 AM	0	0	0	4	0	0	0	0	0	0	4
8:00 AM	0	0	0	2	0	0	0	0	0	0	2
8:15 AM	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	10	0	0	0	0	0	1	11
% Approach Total	0.0	0.0	0.0	90.9	0.0	0.0	0.0	0.0	0.0	9.1	
PHF	0.000	0.000	0.000	0.625	0.000	0.000	0.000	0.000	0.000	0.250	0.550
Entering Leg	0	0	0	10	0	0	0	0	0	1	11
Exiting Leg											10
Total											21

Carriage Road from Southeast

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-SWB	CW-NEB	Total
7:30 AM	2	0	0	0	0	0	0	0	0	0	2
7:45 AM	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	2	0	0	0	0	0	0	0	0	2
8:15 AM	0	2	0	0	0	0	0	0	0	0	2
Total Volume	2	4	0	0	0	0	0	0	0	0	6
% Approach Total	33.3	66.7	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	0.000	0.000	0.000	0.000	0.750
Entering Leg	2	4	0	0	0	0	0	0	0	0	6
Exiting Leg											0
Total											6

Commonwealth Avenue (Route 30) from South

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-WB	CW-EB	Total
7:30 AM	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
8:00 AM	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
Total Volume	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	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	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg											0
Total											0

Carriage Road from Southwest

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-NWB	CW-SEB	Total
7:30 AM	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
8:00 AM	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
Total Volume	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	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	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg											0
Total											0

Washington Street from West

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-NB	CW-SB	Total
7:30 AM	0	0	0	2	1	0	0	0	0	0	3
7:45 AM	0	0	0	1	0	0	0	0	0	0	1
8:00 AM	0	0	0	1	0	0	0	0	0	0	1
8:15 AM	0	0	0	3	0	0	0	0	0	0	3
Total Volume	0	0	0	7	1	0	0	0	0	0	8
% Approach Total	0.0	0.0	0.0	87.5	12.5	0.0	0.0	0.0	0.0	0.0	
PHF	0.000	0.000	0.000	0.583	0.250	0.000	0.000	0.000	0.000	0.000	0.667
Entering Leg	0	0	0	7	1	0	0	0	0	0	8
Exiting Leg											10
Total											18

Carriage Road from Northwest

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-NEB	CW-SWB	Total
7:30 AM	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	1	0	1
8:00 AM	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
Total Volume	0	0	0	0	0	0	0	0	1	0	1
% Approach Total	0.0	0.0	0.0	0.0	0.0	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	0.250	0.000	0.250
Entering Leg	0	0	0	0	0	0	0	0	1	0	1
Exiting Leg											1
Total											2

	Total
7:30 AM	10
7:45 AM	7
8:00 AM	5
8:15 AM	5
Total Volume	27
% Approach Total	
PHF	0.675
Entering Leg	27
Exiting Leg	27
Total	54

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

PDI File #: **175958 A**
Location: **N: Commonwealth Avenue (Route 30) S: Commonwealth Avenue (Route 30) NE: Carriage Road NW: Carriage Road**
Location: **E: Washington Street W: Washington Street SE: Carriage Road SW: Carriage Road**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 08, 2017**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class: **Pedestrians**

	Commonwealth Avenue (Route 30)											Carriage Road										
	from North											from Northeast										
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-EB	CW-WB	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-SEB	CW-NWB	Total
7:00 AM	0	0	0	0	0	0	0	0	24	9	33	0	0	0	0	0	0	0	0	1	4	5
7:15 AM	0	0	0	0	0	0	0	0	45	14	59	0	0	0	0	0	0	0	0	1	0	1
7:30 AM	0	0	0	0	0	0	0	0	34	18	52	0	0	0	0	0	0	0	0	3	1	4
7:45 AM	0	0	0	0	0	0	0	0	40	10	50	0	0	0	0	0	0	0	0	6	2	8
Total	0	0	0	0	0	0	0	0	143	51	194	0	0	0	0	0	0	0	0	11	7	18
8:00 AM	0	0	0	0	0	0	0	0	47	11	58	0	0	0	0	0	0	0	0	2	1	3
8:15 AM	0	0	0	0	0	0	0	0	22	20	42	0	0	0	0	0	0	0	0	2	1	3
8:30 AM	0	0	0	0	0	0	0	0	28	11	39	0	0	0	0	0	0	0	0	0	1	1
8:45 AM	0	0	0	0	0	0	0	0	26	19	45	0	0	0	0	0	0	0	0	2	1	3
Total	0	0	0	0	0	0	0	0	123	61	184	0	0	0	0	0	0	0	0	6	4	10
Grand Total	0	0	0	0	0	0	0	0	266	112	378	0	0	0	0	0	0	0	0	17	11	28
Approach %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	70.4	29.6		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	60.7	39.3	
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.8	7.9	26.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.8	2.0
Exiting Leg Total											378											28

	Washington Street											Carriage Road										
	from East											from Southeast										
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-SB	CW-NB	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-SWB	CW-NEB	Total
7:00 AM	0	0	0	0	0	0	0	0	1	5	6	0	0	0	0	0	0	0	0	3	8	11
7:15 AM	0	0	0	0	0	0	0	0	2	8	10	0	0	0	0	0	0	0	0	5	9	14
7:30 AM	0	0	0	0	0	0	0	0	11	10	21	0	0	0	0	0	0	0	0	8	7	15
7:45 AM	0	0	0	0	0	0	0	0	12	7	19	0	0	0	0	0	0	0	0	9	3	12
Total	0	0	0	0	0	0	0	0	26	30	56	0	0	0	0	0	0	0	0	25	27	52
8:00 AM	0	0	0	0	0	0	0	0	9	14	23	0	0	0	0	0	0	0	0	5	11	16
8:15 AM	0	0	0	0	0	0	0	0	7	8	15	0	0	0	0	0	0	0	0	10	8	18
8:30 AM	0	0	0	0	0	0	0	0	9	15	24	0	0	0	0	0	0	0	0	9	4	13
8:45 AM	0	0	0	0	0	0	0	0	13	12	25	0	0	0	0	0	0	0	0	5	6	11
Total	0	0	0	0	0	0	0	0	38	49	87	0	0	0	0	0	0	0	0	29	29	58
Grand Total	0	0	0	0	0	0	0	0	64	79	143	0	0	0	0	0	0	0	0	54	56	110
Approach %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	44.8	55.2		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	49.1	50.9	
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.5	5.6	10.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.8	4.0	7.8
Exiting Leg Total											143											110

	Commonwealth Avenue (Route 30)											Carriage Road										
	from South											from Southwest										
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-WB	CW-EB	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-NWB	CW-SEB	Total
7:00 AM	0	0	0	0	0	0	0	0	3	13	16	0	0	0	0	0	0	0	0	4	9	13
7:15 AM	0	0	0	0	0	0	0	0	4	17	21	0	0	0	0	0	0	0	0	4	12	16
7:30 AM	0	0	0	0	0	0	0	0	7	12	19	0	0	0	0	0	0	0	0	3	10	13
7:45 AM	0	0	0	0	0	0	0	0	11	7	18	0	0	0	0	0	0	0	0	6	6	12
Total	0	0	0	0	0	0	0	0	25	49	74	0	0	0	0	0	0	0	0	17	37	54
8:00 AM	0	0	0	0	0	0	0	0	3	13	16	0	0	0	0	0	0	0	0	3	11	14
8:15 AM	0	0	0	0	0	0	0	0	8	8	16	0	0	0	0	0	0	0	0	9	5	14
8:30 AM	0	0	0	0	0	0	0	0	6	5	11	0	0	0	0	0	0	0	0	3	4	7
8:45 AM	0	0	0	0	0	0	0	0	6	8	14	0	0	0	0	0	0	0	0	6	2	8
Total	0	0	0	0	0	0	0	0	23	34	57	0	0	0	0	0	0	0	0	21	22	43
Grand Total	0	0	0	0	0	0	0	0	48	83	131	0	0	0	0	0	0	0	0	38	59	97
Approach %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	36.6	63.4		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	39.2	60.8	
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.4	5.9	9.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	4.2	6.9
Exiting Leg Total											131											97

	Washington Street											Carriage Road											
	from West											from Northwest											
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-NB	CW-SB	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-NEB	CW-SWB	Total	Total
7:00 AM	0	0	0	0	0	0	0	0	14	7	21	0	0	0	0	0	0	0	0	24	9	33	138
7:15 AM	0	0	0	0	0	0	0	0	15	6	21	0	0	0	0	0	0	0	0	42	14	56	198
7:30 AM	0	0	0	0	0	0	0	0	9	9	18	0	0	0	0	0	0	0	0	31	18	49	191
7:45 AM	0	0	0	0	0	0	0	0	14	4	18	0	0	0	0	0	0	0	0	38	10	48	185
Total	0	0	0	0	0	0	0	0	52	26	78	0	0	0	0	0	0	0	0	135	51	186	712
8:00 AM	0	0	0	0	0	0	0	0	25	10	35	0	0	0	0	0	0	0	0	44	11	55	220
8:15 AM	0	0	0	0	0	0	0	0	13	5	18	0	0	0	0	0	0	0	0	20	17	37	163
8:30 AM	0	0	0	0	0	0	0	0	8	5	13	0	0	0	0	0	0	0	0	26	10	36	144
8:45 AM	0	0	0	0	0	0	0	0	17	8	25	0	0	0	0	0	0	0	0	26	19	45	176
Total	0	0	0	0	0	0	0	0	63	28	91	0	0	0	0	0	0	0	0	116	57	173	703
Grand Total	0	0	0	0	0	0	0	0	115	54	169	0	0	0	0	0	0	0	0	251	108	359	1415
Approach %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	68.0	32.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	69.9	30.1		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.1	3.8	11.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.7	7.6	25.4	
Exiting Leg Total											169											359	1415

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

7:15 AM	Commonwealth Avenue (Route 30)											Carriage Road										
	from North											from Northeast										
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-EB	CW-WB	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-SEB	CW-NWB	Total
7:15 AM	0	0	0	0	0	0	0	0	45	14	59	0	0	0	0	0	0	0	0	1	0	1
7:30 AM	0	0	0	0	0	0	0	0	34	18	52	0	0	0	0	0	0	0	0	3	1	4
7:45 AM	0	0	0	0	0	0	0	0	40	10	50	0	0	0	0	0	0	0	0	6	2	8
8:00 AM	0	0	0	0	0	0	0	0	47	11	58	0	0	0	0	0	0	0	0	2	1	3
Total Volume	0	0	0	0	0	0	0	0	166	53	219	0	0	0	0	0	0	0	0	12	4	16
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	75.8	24.2		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	75.0	25.0	
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.883	0.736	0.928	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.500	0.500
Entering Leg	0	0	0	0	0	0	0	0	166	53	219	0	0	0	0	0	0	0	0	12	4	16
Exiting Leg											219											16
Total											438											32

	Washington Street											Carriage Road										
	from East											from Southeast										
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-SB	CW-NB	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-SWB	CW-NEB	Total
7:15 AM	0	0	0	0	0	0	0	0	2	8	10	0	0	0	0	0	0	0	0	5	9	14
7:30 AM	0	0	0	0	0	0	0	0	11	10	21	0	0	0	0	0	0	0	0	8	7	15
7:45 AM	0	0	0	0	0	0	0	0	12	7	19	0	0	0	0	0	0	0	0	9	3	12
8:00 AM	0	0	0	0	0	0	0	0	9	14	23	0	0	0	0	0	0	0	0	5	11	16
Total Volume	0	0	0	0	0	0	0	0	34	39	73	0	0	0	0	0	0	0	0	27	30	57
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	46.6	53.4		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	47.4	52.6	
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.708	0.696	0.793	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.682	0.891
Entering Leg	0	0	0	0	0	0	0	0	34	39	73	0	0	0	0	0	0	0	0	27	30	57
Exiting Leg											73											57
Total											146											114

	Commonwealth Avenue (Route 30)											Carriage Road										
	from South											from Southwest										
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-WB	CW-EB	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-NWB	CW-SEB	Total
7:15 AM	0	0	0	0	0	0	0	0	4	17	21	0	0	0	0	0	0	0	0	4	12	16
7:30 AM	0	0	0	0	0	0	0	0	7	12	19	0	0	0	0	0	0	0	0	3	10	13
7:45 AM	0	0	0	0	0	0	0	0	11	7	18	0	0	0	0	0	0	0	0	6	6	12
8:00 AM	0	0	0	0	0	0	0	0	3	13	16	0	0	0	0	0	0	0	0	3	11	14
Total Volume	0	0	0	0	0	0	0	0	25	49	74	0	0	0	0	0	0	0	0	16	39	55
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	33.8	66.2		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	29.1	70.9	
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.568	0.721	0.881	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.667	0.813	0.859
Entering Leg	0	0	0	0	0	0	0	0	25	49	74	0	0	0	0	0	0	0	0	16	39	55
Exiting Leg											74											55
Total											148											110

	Washington Street											Carriage Road											
	from West											from Northwest											
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-NB	CW-SB	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-NEB	CW-SWB	Total	Total
7:15 AM	0	0	0	0	0	0	0	0	15	6	21	0	0	0	0	0	0	0	0	42	14	56	198
7:30 AM	0	0	0	0	0	0	0	0	9	9	18	0	0	0	0	0	0	0	0	31	18	49	191
7:45 AM	0	0	0	0	0	0	0	0	14	4	18	0	0	0	0	0	0	0	0	38	10	48	185
8:00 AM	0	0	0	0	0	0	0	0	25	10	35	0	0	0	0	0	0	0	0	44	11	55	220
Total Volume	0	0	0	0	0	0	0	0	63	29	92	0	0	0	0	0	0	0	0	155	53	208	794
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	68.5	31.5		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	74.5	25.5		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.630	0.725	0.657	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.881	0.736	0.929	0.902
Entering Leg	0	0	0	0	0	0	0	0	63	29	92	0	0	0	0	0	0	0	0	155	53	208	794
Exiting Leg											92											208	794
Total											184											416	1588

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

PDI File #: **175958 AA**
Location: **N: Commonwealth Avenue (Route 30) S: Commonwealth Avenue (Route 30) NE: Carriage Road NW: Carriage Road**
Location: **E: Washington Street W: Washington Street SE: Carriage Road SW: Carriage Road**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 08, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

Cars and Heavy Vehicles (Combined)

Commonwealth Avenue (Route 30) from North

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
4:00 PM	1	1	0	145	0	43	3	4	197
4:15 PM	0	0	0	127	0	30	0	1	158
4:30 PM	0	4	0	170	0	21	1	2	198
4:45 PM	0	0	0	152	0	31	1	5	189
Total	1	5	0	594	0	125	5	12	742
5:00 PM	0	2	1	194	0	44	1	6	248
5:15 PM	0	0	0	130	0	23	1	6	160
5:30 PM	0	0	0	143	0	30	1	3	177
5:45 PM	0	3	0	163	0	34	0	5	205
Total	0	5	1	630	0	131	3	20	790
Grand Total	1	10	1	1224	0	256	8	32	1532
Approach %	0.1	0.7	0.1	79.9	0.0	16.7	0.5	2.1	
Total %	0.0	0.2	0.0	27.4	0.0	5.7	0.2	0.7	34.2
Exiting Leg Total									1129
Cars	1	10	1	1216	0	253	8	32	1521
% Cars	100.0	100.0	100.0	99.3	0.0	98.8	100.0	100.0	99.3
Exiting Leg Total									1122
Heavy Vehicles	0	0	0	8	0	3	0	0	11
% Heavy Vehicles	0.0	0.0	0.0	0.7	0.0	1.2	0.0	0.0	0.7
Exiting Leg Total									7

Carriage Road from Northeast

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0
Approach %	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	0.0	0.0
Exiting Leg Total									62
Cars	0	0	0	0	0	0	0	0	0
% Cars	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total									58
Heavy Vehicles	0	0	0	0	0	0	0	0	0
% Heavy Vehicles	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total									4

Washington Street from East

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
4:00 PM	6	15	2	58	2	11	0	0	94
4:15 PM	0	10	6	73	0	10	0	0	99
4:30 PM	1	8	5	60	1	24	0	0	99
4:45 PM	5	10	3	79	3	6	0	0	106
Total	12	43	16	270	6	51	0	0	398
5:00 PM	1	11	1	62	0	13	0	0	88
5:15 PM	0	19	2	58	0	15	0	0	94
5:30 PM	2	12	4	72	1	10	0	0	101
5:45 PM	3	10	1	78	1	15	0	0	108
Total	6	52	8	270	2	53	0	0	391
Grand Total	18	95	24	540	8	104	0	0	789
Approach %	2.3	12.0	3.0	68.4	1.0	13.2	0.0	0.0	
Total %	0.4	2.1	0.5	12.1	0.2	2.3	0.0	0.0	17.6
Exiting Leg Total									1163
Cars	17	94	22	511	8	100	0	0	752
% Cars	94.4	98.9	91.7	94.6	100.0	96.2	0.0	0.0	95.3
Exiting Leg Total									1138
Heavy Vehicles	1	1	2	29	0	4	0	0	37
% Heavy Vehicles	5.6	1.1	8.3	5.4	0.0	3.8	0.0	0.0	4.7
Exiting Leg Total									25

Carriage Road from Southeast

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
4:00 PM	19	4	0	0	0	0	0	0	23
4:15 PM	19	2	0	0	0	0	0	0	21
4:30 PM	11	3	0	0	0	0	0	0	14
4:45 PM	21	3	0	0	0	0	0	0	24
Total	70	12	0	0	0	0	0	0	82
5:00 PM	23	2	0	0	0	0	0	0	25
5:15 PM	20	6	0	0	0	0	0	0	26
5:30 PM	15	3	0	0	0	0	0	0	18
5:45 PM	24	1	0	0	0	0	0	0	25
Total	82	12	0	0	0	0	0	0	94
Grand Total	152	24	0	0	0	0	0	0	176
Approach %	86.4	13.6	0.0	0.0	0.0	0.0	0.0	0.0	
Total %	3.4	0.5	0.0	0.0	0.0	0.0	0.0	0.0	3.9
Exiting Leg Total									0
Cars	152	22	0	0	0	0	0	0	174
% Cars	100.0	91.7	0.0	0.0	0.0	0.0	0.0	0.0	98.9
Exiting Leg Total									0
Heavy Vehicles	0	2	0	0	0	0	0	0	2
% Heavy Vehicles	0.0	8.3	0.0	0.0	0.0	0.0	0.0	0.0	1.1
Exiting Leg Total									0

Commonwealth Avenue (Route 30) from South

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
4:00 PM	0	16	0	118	0	0	0	0	134
4:15 PM	0	10	0	103	0	0	0	0	113
4:30 PM	0	9	0	113	0	0	0	0	122
4:45 PM	0	11	1	120	0	0	0	0	132
Total	0	46	1	454	0	0	0	0	501
5:00 PM	0	5	0	112	0	0	0	1	118
5:15 PM	0	7	0	107	0	0	0	0	114
5:30 PM	0	8	0	113	0	0	0	0	121
5:45 PM	0	3	0	141	0	0	0	0	144
Total	0	23	0	473	0	0	0	1	497
Grand Total	0	69	1	927	0	0	0	1	998
Approach %	0.0	6.9	0.1	92.9	0.0	0.0	0.0	0.1	
Total %	0.0	1.5	0.0	20.7	0.0	0.0	0.0	0.0	22.3
Exiting Leg Total									1372
Cars	0	67	0	922	0	0	0	1	990
% Cars	0.0	97.1	0.0	99.5	0.0	0.0	0.0	100.0	99.2
Exiting Leg Total									1360
Heavy Vehicles	0	2	1	5	0	0	0	0	8
% Heavy Vehicles	0.0	2.9	100.0	0.5	0.0	0.0	0.0	0.0	0.8
Exiting Leg Total									12

Carriage Road from Southwest

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0
Approach %	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	0.0	0.0
Exiting Leg Total									62
Cars	0	0	0	0	0	0	0	0	0
% Cars	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total									62
Heavy Vehicles	0	0	0	0	0	0	0	0	0
% Heavy Vehicles	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total									30

Washington Street from West

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
4:00 PM	1	10	0	75	0	6	0	0	92
4:15 PM	3	4	0	90	2	3	1	0	103
4:30 PM	2	4	0	78	3	10	0	0	97
4:45 PM	1	6	0	83	3	15	0	0	108
Total	7	24	0	326	8	34	1	0	400
5:00 PM	0	5	0	84	0	7	0	0	96
5:15 PM	2	8	0	96	1	8	1	0	116
5:30 PM	3	4	0	77	2	15	0	0	101
5:45 PM	1	2	0	103	0	11	2	0	119
Total	6	19	0	360	3	41	3	0	432
Grand Total	13	43	0	686	11	75	4	0	832
Approach %	1.6	5.2	0.0	82.5	1.3	9.0	0.5	0.0	
Total %	0.3	1.0	0.0	15.3	0.2	1.7	0.1	0.0	18.6
Exiting Leg Total									657
Cars	13	43	0	666	11	74	4	0	811
% Cars	100.0	100.0	0.0	97.1	100.0	98.7	100.0	0.0	97.5
Exiting Leg Total									621
Heavy Vehicles	0	0	0	20	0	1	0	0	21
% Heavy Vehicles	0.0	0.0	0.0	2.9	0.0	1.3	0.0	0.0	2.5
Exiting Leg Total									111

Carriage Road from Northwest, and intersection Total

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Total
4:00 PM	14	5	0	0	0	0	0	0	19	559
4:15 PM	13	3	0	0	0	0	0	0	16	510
4:30 PM	18	5	0	0	0	0	0	0	23	553
4:45 PM	16	9	0	0	0	0	0	0	25	584
Total	61	22	0	0	0	0	0	0	83	2206
5:00 PM	12	5	0	0	0	0	0	1	18	593
5:15 PM	5	1	0	0	0	0	0	0	6	516
5:30 PM	19	7	0	0	0	0	0	0	26	544
5:45 PM	10	5	0	0	0	0	0	0	15	616
Total	46	18	0	0	0	0	0	1	65	2269
Grand Total	107	40	0	0	0	0	0	1	148	4475
Approach %	72.3	27.0	0.0	0.0	0.0	0.0	0.0	0.7		
Total %	2.4	0.9	0.0	0.0	0.0	0.0	0.0	0.0	3.3	
Exiting Leg Total									30	4475
Cars	100	40	0	0	0	0	0	1	141	4389
% Cars	93.5	100.0	0.0	0.0	0.0	0.0	0.0	100.0	95.3	98.1
Exiting Leg Total									28	4389
Heavy Vehicles	82	30	0	0	0	0	0	0	112	191
% Heavy Vehicles	76.6	75.0	0.0	0.0	0.0	0.0	0.0	0.0	75.7	4.3
Exiting Leg Total									2	191

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:
5:00 PM

Commonwealth Avenue (Route 30) from North

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
5:00 PM	0	2	1	194	0	44	1	6	248
5:15 PM	0	0	0	130	0	23	1	6	160
5:30 PM	0	0	0	143	0	30	1	3	177
5:45 PM	0	3	0	163	0	34	0	5	205
Total Volume	0	5	1	630	0	131	3	20	790
% Approach Total	0.0	0.6	0.1	79.7	0.0	16.6	0.4	2.5	
PHF	0.000	0.417	0.250	0.812	0.000	0.744	0.750	0.833	0.796
Cars	0	5	1	626	0	129	3	20	784
Cars %	0.0	100.0	100.0	99.4	0.0	98.5	100.0	100.0	99.2
Heavy Vehicles	0	0	0	4	0	2	0	0	6
Heavy Vehicles %	0.0	0.0	0.0	0.6	0.0	1.5	0.0	0.0	0.8
Cars Enter Leg	0	5	1	626	0	129	3	20	784
Heavy Enter Leg	0	0	0	4	0	2	0	0	6
Total Entering Leg	0	5	1	630	0	131	3	20	790
Cars Exiting Leg									583
Heavy Exiting Leg									3
Total Exiting Leg									586

Carriage Road from Northeast

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0
% Approach Total	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	0.000	0.000
Cars	0	0	0	0	0	0	0	0	0
Cars %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heavy Vehicles	0	0	0	0	0	0	0	0	0
Heavy Vehicles %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cars Enter Leg	0	0	0	0	0	0	0	0	0
Heavy Enter Leg	0	0	0	0	0	0	0	0	0
Total Entering Leg	0	0	0	0	0	0	0	0	0
Cars Exiting Leg									24
Heavy Exiting Leg									0
Total Exiting Leg									24

Washington Street from East

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
5:00 PM	1	11	1	62	0	13	0	0	88
5:15 PM	0	19	2	58	0	15	0	0	94
5:30 PM	2	12	4	72	1	10	0	0	101
5:45 PM	3	10	1	78	1	15	0	0	108
Total Volume	6	52	8	270	2	53	0	0	391
% Approach Total	1.5	13.3	2.0	69.1	0.5	13.6	0.0	0.0	
PHF	0.500	0.684	0.500	0.865	0.500	0.883	0.000	0.000	0.905
Cars	6	51	7	251	2	52	0	0	369
Cars %	100.0	98.1	87.5	93.0	100.0	98.1	0.0	0.0	94.4
Heavy Vehicles	0	1	1	19	0	1	0	0	22
Heavy Vehicles %	0.0	1.9	12.5	7.0	0.0	1.9	0.0	0.0	5.6
Cars Enter Leg	6	51	7	251	2	52	0	0	369
Heavy Enter Leg	0	1	1	19	0	1	0	0	22
Total Entering Leg	6	52	8	270	2	53	0	0	391
Cars Exiting Leg									583
Heavy Exiting Leg									13
Total Exiting Leg									596

Carriage Road from Southeast

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
5:00 PM	23	2	0	0	0	0	0	0	25
5:15 PM	20	6	0	0	0	0	0	0	26
5:30 PM	15	3	0	0	0	0	0	0	18
5:45 PM	24	1	0	0	0	0	0	0	25
Total Volume	82	12	0	0	0	0	0	0	94
% Approach Total	87.2	12.8	0.0	0.0	0.0	0.0	0.0	0.0	
PHF	0.854	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.904
Cars	82	12	0	0	0	0	0	0	94
Cars %	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
Heavy Vehicles	0	0	0	0	0	0	0	0	0
Heavy Vehicles %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cars Enter Leg	82	12	0	0	0	0	0	0	94
Heavy Enter Leg	0	0	0	0	0	0	0	0	0
Total Entering Leg	82	12	0	0	0	0	0	0	94
Cars Exiting Leg									0
Heavy Exiting Leg									0
Total Exiting Leg									0

Commonwealth Avenue (Route 30) from South

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
5:00 PM	0	5	0	112	0	0	0	1	118
5:15 PM	0	7	0	107	0	0	0	0	114
5:30 PM	0	8	0	113	0	0	0	0	121
5:45 PM	0	3	0	141	0	0	0	0	144
Total Volume	0	23	0	473	0	0	0	1	497
% Approach Total	0.0	4.6	0.0	95.2	0.0	0.0	0.0	0.2	
PHF	0.000	0.719	0.000	0.839	0.000	0.000	0.000	0.250	0.863
Cars	0	23	0	471	0	0	0	1	495
Cars %	0.0	100.0	0.0	99.6	0.0	0.0	0.0	100.0	99.6
Heavy Vehicles	0	0	0	2	0	0	0	0	2
Heavy Vehicles %	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.4
Cars Enter Leg	0	23	0	471	0	0	0	1	495
Heavy Enter Leg	0	0	0	2	0	0	0	0	2
Total Entering Leg	0	23	0	473	0	0	0	1	497
Cars Exiting Leg									698
Heavy Exiting Leg									5
Total Exiting Leg									703

Carriage Road from Southwest

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0
% Approach Total	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	0.000	0.000
Cars	0	0	0	0	0	0	0	0	0
Cars %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heavy Vehicles	0	0	0	0	0	0	0	0	0
Heavy Vehicles %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cars Enter Leg	0	0	0	0	0	0	0	0	0
Heavy Enter Leg	0	0	0	0	0	0	0	0	0
Total Entering Leg	0	0	0	0	0	0	0	0	0
Cars Exiting Leg									27
Heavy Exiting Leg									13
Total Exiting Leg									40

Washington Street from West

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
5:00 PM	0	5	0	84	0	7	0	0	96
5:15 PM	2	8	0	96	1	8	1	0	116
5:30 PM	3	4	0	77	2	15	0	0	101
5:45 PM	1	2	0	103	0	11	2	0	119
Total Volume	6	19	0	360	3	41	3	0	432
% Approach Total	1.4	4.4	0.0	83.3	0.7	9.5	0.7	0.0	
PHF	0.500	0.594	0.000	0.874	0.375	0.683	0.375	0.000	0.908
Cars	6	19	0	349	3	41	3	0	421
Cars %	100.0	100.0	0.0	96.9	100.0	100.0	100.0	0.0	97.5
Heavy Vehicles	0	0	0	11	0	0	0	0	11
Heavy Vehicles %	0.0	0.0	0.0	3.1	0.0	0.0	0.0	0.0	2.5
Cars Enter Leg	6	19	0	349	3	41	3	0	421
Heavy Enter Leg	0	0	0	11	0	0	0	0	11
Total Entering Leg	6	19	0	360	3	41	3	0	432
Cars Exiting Leg									298
Heavy Exiting Leg									54
Total Exiting Leg									352

Carriage Road from Northwest, and intersection Total

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Total
5:00 PM	12	5	0	0	0	0	0	1	18	593
5:15 PM	5	1	0	0	0	0	0	0	6	516
5:30 PM	19	7	0	0	0	0	0	0	26	544
5:45 PM	10	5	0	0	0	0	0	0	15	616
Total Volume	46	18	0	0	0	0	0	1	65	2269
% Approach Total	70.8	27.7	0.0	0.0	0.0	0.0	0.0	1.5		
PHF	0.605	0.643	0.000	0.000	0.000	0.000	0.000	0.250	0.625	0.921
Cars	42	18	0	0	0	0	0	1	61	2224
Cars %	91.3	100.0	0.0	0.0	0.0	0.0	0.0	100.0	93.8	98.0
Heavy Vehicles	35	13	0	0	0	0	0	0	48	89
Heavy Vehicles %	76.1	72.2	0.0	0.0	0.0	0.0	0.0	0.0	73.8	3.9
Cars Enter Leg	42	18	0	0	0	0	0	1	61	2224
Heavy Enter Leg	35	13	0	0	0	0	0	0	48	89
Total Entering Leg	77	31	0	0	0	0	0	1	109	2313
Cars Exiting Leg									11	2224
Heavy Exiting Leg									1	89
Total Exiting Leg									12	2313

PDI File #: **175958 AA**
Location: **N: Commonwealth Avenue (Route 30) S: Commonwealth Avenue (Route 30) NE: Carriage Road NW: Carriage Road**
Location: **E: Washington Street W: Washington Street SE: Carriage Road SW: Carriage Road**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 08, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

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

Cars

Commonwealth Avenue (Route 30) from North

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
4:00 PM	1	1	0	144	0	42	3	4	195
4:15 PM	0	0	0	126	0	30	0	1	157
4:30 PM	0	4	0	168	0	21	1	2	196
4:45 PM	0	0	0	152	0	31	1	5	189
Total	1	5	0	590	0	124	5	12	737
5:00 PM	0	2	1	193	0	44	1	6	247
5:15 PM	0	0	0	128	0	23	1	6	158
5:30 PM	0	0	0	143	0	29	1	3	176
5:45 PM	0	3	0	162	0	33	0	5	203
Total	0	5	1	626	0	129	3	20	784
Grand Total	1	10	1	1216	0	253	8	32	1521
Approach %	0.1	0.7	0.1	79.9	0.0	16.6	0.5	2.1	
Total %	0.0	0.2	0.0	27.7	0.0	5.8	0.2	0.7	34.7
Exiting Leg Total									1122

Carriage Road from Northeast

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0
Approach %	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	0.0	0.0
Exiting Leg Total									58

Washington Street from East

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
4:00 PM	5	15	1	55	2	11	0	0	89
4:15 PM	0	10	6	70	0	9	0	0	95
4:30 PM	1	8	5	59	1	23	0	0	97
4:45 PM	5	10	3	76	3	5	0	0	102
Total	11	43	15	260	6	48	0	0	383
5:00 PM	1	11	1	60	0	12	0	0	85
5:15 PM	0	19	1	52	0	15	0	0	87
5:30 PM	2	11	4	66	1	10	0	0	94
5:45 PM	3	10	1	73	1	15	0	0	103
Total	6	51	7	251	2	52	0	0	369
Grand Total	17	94	22	511	8	100	0	0	752
Approach %	2.3	12.5	2.9	68.0	1.1	13.3	0.0	0.0	
Total %	0.4	2.1	0.5	11.6	0.2	2.3	0.0	0.0	17.1
Exiting Leg Total									1138

Carriage Road from Southeast

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
4:00 PM	19	3	0	0	0	0	0	0	22
4:15 PM	19	2	0	0	0	0	0	0	21
4:30 PM	11	2	0	0	0	0	0	0	13
4:45 PM	21	3	0	0	0	0	0	0	24
Total	70	10	0	0	0	0	0	0	80
5:00 PM	23	2	0	0	0	0	0	0	25
5:15 PM	20	6	0	0	0	0	0	0	26
5:30 PM	15	3	0	0	0	0	0	0	18
5:45 PM	24	1	0	0	0	0	0	0	25
Total	82	12	0	0	0	0	0	0	94
Grand Total	152	22	0	0	0	0	0	0	174
Approach %	87.4	12.6	0.0	0.0	0.0	0.0	0.0	0.0	
Total %	3.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	4.0
Exiting Leg Total									0

Commonwealth Avenue (Route 30) from South

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
4:00 PM	0	15	0	118	0	0	0	0	133
4:15 PM	0	9	0	102	0	0	0	0	111
4:30 PM	0	9	0	111	0	0	0	0	120
4:45 PM	0	11	0	120	0	0	0	0	131
Total	0	44	0	451	0	0	0	0	495
5:00 PM	0	5	0	112	0	0	0	1	118
5:15 PM	0	7	0	106	0	0	0	0	113
5:30 PM	0	8	0	112	0	0	0	0	120
5:45 PM	0	3	0	141	0	0	0	0	144
Total	0	23	0	471	0	0	0	1	495
Grand Total	0	67	0	922	0	0	0	1	990
Approach %	0.0	6.8	0.0	93.1	0.0	0.0	0.0	0.1	
Total %	0.0	1.5	0.0	21.0	0.0	0.0	0.0	0.0	22.6
Exiting Leg Total									1360

Carriage Road from Southwest

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0
Approach %	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	0.0	0.0
Exiting Leg Total									62

Washington Street from West

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
4:00 PM	1	10	0	72	0	6	0	0	89
4:15 PM	3	4	0	87	2	3	1	0	100
4:30 PM	2	4	0	76	3	9	0	0	94
4:45 PM	1	6	0	82	3	15	0	0	107
Total	7	24	0	317	8	33	1	0	390
5:00 PM	0	5	0	81	0	7	0	0	93
5:15 PM	2	8	0	92	1	8	1	0	112
5:30 PM	3	4	0	74	2	15	0	0	98
5:45 PM	1	2	0	102	0	11	2	0	118
Total	6	19	0	349	3	41	3	0	421
Grand Total	13	43	0	666	11	74	4	0	811
Approach %	1.6	5.3	0.0	82.1	1.4	9.1	0.5	0.0	
Total %	0.3	1.0	0.0	15.2	0.3	1.7	0.1	0.0	18.5
Exiting Leg Total									621

Carriage Road from Northwest

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Total
4:00 PM	14	5	0	0	0	0	0	0	19	547
4:15 PM	12	3	0	0	0	0	0	0	15	499
4:30 PM	18	5	0	0	0	0	0	0	23	543
4:45 PM	14	9	0	0	0	0	0	0	23	576
Total	58	22	0	0	0	0	0	0	80	2165
5:00 PM	11	5	0	0	0	0	0	1	17	585
5:15 PM	5	1	0	0	0	0	0	0	6	502
5:30 PM	17	7	0	0	0	0	0	0	24	530
5:45 PM	9	5	0	0	0	0	0	0	14	607
Total	42	18	0	0	0	0	0	1	61	2224
Grand Total	100	40	0	0	0	0	0	1	141	4389
Approach %	70.9	28.4	0.0	0.0	0.0	0.0	0.0	0.7		
Total %	2.3	0.9	0.0	0.0	0.0	0.0	0.0	0.0	3.2	
Exiting Leg Total									28	4389

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

5:00 PM

Commonwealth Avenue (Route 30) from North

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
5:00 PM	0	2	1	193	0	44	1	6	247
5:15 PM	0	0	0	128	0	23	1	6	158
5:30 PM	0	0	0	143	0	29	1	3	176
5:45 PM	0	3	0	162	0	33	0	5	203
Total Volume	0	5	1	626	0	129	3	20	784
% Approach Total	0.0	0.6	0.1	79.8	0.0	16.5	0.4	2.6	
PHF	0.000	0.417	0.250	0.811	0.000	0.733	0.750	0.833	0.794
Entering Leg	0	5	1	626	0	129	3	20	784
Exiting Leg									583
Total									1367

Carriage Road from Northeast

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0
% Approach Total	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	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0
Exiting Leg									24
Total									24

Washington Street from East

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
5:00 PM	1	11	1	60	0	12	0	0	85
5:15 PM	0	19	1	52	0	15	0	0	87
5:30 PM	2	11	4	66	1	10	0	0	94
5:45 PM	3	10	1	73	1	15	0	0	103
Total Volume	6	51	7	251	2	52	0	0	369
% Approach Total	1.6	13.8	1.9	68.0	0.5	14.1	0.0	0.0	
PHF	0.500	0.671	0.438	0.860	0.500	0.867	0.000	0.000	0.896
Entering Leg	6	51	7	251	2	52	0	0	369
Exiting Leg									583
Total									952

Carriage Road from Southeast

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
5:00 PM	23	2	0	0	0	0	0	0	25
5:15 PM	20	6	0	0	0	0	0	0	26
5:30 PM	15	3	0	0	0	0	0	0	18
5:45 PM	24	1	0	0	0	0	0	0	25
Total Volume	82	12	0	0	0	0	0	0	94
% Approach Total	87.2	12.8	0.0	0.0	0.0	0.0	0.0	0.0	
PHF	0.854	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.904
Entering Leg	82	12	0	0	0	0	0	0	94
Exiting Leg									0
Total									94

Commonwealth Avenue (Route 30) from South

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
5:00 PM	0	5	0	112	0	0	0	1	118
5:15 PM	0	7	0	106	0	0	0	0	113
5:30 PM	0	8	0	112	0	0	0	0	120
5:45 PM	0	3	0	141	0	0	0	0	144
Total Volume	0	23	0	471	0	0	0	1	495
% Approach Total	0.0	4.6	0.0	95.2	0.0	0.0	0.0	0.2	
PHF	0.000	0.719	0.000	0.835	0.000	0.000	0.000	0.250	0.859
Entering Leg	0	23	0	471	0	0	0	1	495
Exiting Leg									698
Total									1193

Carriage Road from Southwest

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0
% Approach Total	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	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0
Exiting Leg									27
Total									27

Washington Street from West

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
5:00 PM	0	5	0	81	0	7	0	0	93
5:15 PM	2	8	0	92	1	8	1	0	112
5:30 PM	3	4	0	74	2	15	0	0	98
5:45 PM	1	2	0	102	0	11	2	0	118
Total Volume	6	19	0	349	3	41	3	0	421
% Approach Total	1.4	4.5	0.0	82.9	0.7	9.7	0.7	0.0	
PHF	0.500	0.594	0.000	0.855	0.375	0.683	0.375	0.000	0.892
Entering Leg	6	19	0	349	3	41	3	0	421
Exiting Leg									298
Total									719

Carriage Road from Northwest

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Total
5:00 PM	11	5	0	0	0	0	0	1	17	585
5:15 PM	5	1	0	0	0	0	0	0	6	502
5:30 PM	17	7	0	0	0	0	0	0	24	530
5:45 PM	9	5	0	0	0	0	0	0	14	607
Total Volume	42	18	0	0	0	0	0	1	61	2224
% Approach Total	68.9	29.5	0.0	0.0	0.0	0.0	0.0	1.6		
PHF	0.618	0.643	0.000	0.000	0.000	0.000	0.000	0.250	0.635	0.916
Entering Leg	42	18	0	0	0	0	0	1	61	2224
Exiting Leg									11	2224
Total									72	4448

PRECISION DATA INDUSTRIES, LLC

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

PDI File #: **175958 AA**
Location: **N: Commonwealth Avenue (Route 30) S: Commonwealth Avenue (Route 30) NE: Carriage Road NW: Carriage Road**
Location: **E: Washington Street W: Washington Street SE: Carriage Road SW: Carriage Road**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 08, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

Heavy Vehicles (Combined-Large Trucks and Buses)

	Commonwealth Avenue (Route 30)									Carriage Road								
	from North									from Northeast								
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
4:00 PM	0	0	0	1	0	1	0	0	2	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	4	0	1	0	0	5	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	1	0	1	0	0	2	0	0	0	0	0	0	0	0	0
Total	0	0	0	4	0	2	0	0	6	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	8	0	3	0	0	11	0	0	0	0	0	0	0	0	0
Approach %	0.0	0.0	0.0	72.7	0.0	27.3	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	4.2	0.0	1.6	0.0	0.0	5.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total									7									4
Large Trucks	0	0	0	5	0	1	0	0	6	0	0	0	0	0	0	0	0	0
% Large Trucks	0.0	0.0	0.0	62.5	0.0	33.3	0.0	0.0	54.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total									5									3
Buses	0	0	0	3	0	2	0	0	5	0	0	0	0	0	0	0	0	0
% Buses	0.0	0.0	0.0	37.5	0.0	66.7	0.0	0.0	45.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total									2									1

	Washington Street									Carriage Road								
	from East									from Southeast								
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
4:00 PM	1	0	1	3	0	0	0	0	5	0	1	0	0	0	0	0	0	1
4:15 PM	0	0	0	3	0	1	0	0	4	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	1	0	1	0	0	2	0	1	0	0	0	0	0	0	1
4:45 PM	0	0	0	3	0	1	0	0	4	0	0	0	0	0	0	0	0	0
Total	1	0	1	10	0	3	0	0	15	0	2	0	0	0	0	0	0	2
5:00 PM	0	0	0	2	0	1	0	0	3	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	1	6	0	0	0	0	7	0	0	0	0	0	0	0	0	0
5:30 PM	0	1	0	6	0	0	0	0	7	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	5	0	0	0	0	5	0	0	0	0	0	0	0	0	0
Total	0	1	1	19	0	1	0	0	22	0	0	0	0	0	0	0	0	0
Grand Total	1	1	2	29	0	4	0	0	37	0	2	0	0	0	0	0	0	2
Approach %	2.7	2.7	5.4	78.4	0.0	10.8	0.0	0.0		0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total %	0.5	0.5	1.0	15.2	0.0	2.1	0.0	0.0	19.4	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
Exiting Leg Total									25									0
Large Trucks	0	0	0	9	0	3	0	0	12	0	2	0	0	0	0	0	0	2
% Large Trucks	0.0	0.0	0.0	31.0	0.0	75.0	0.0	0.0	32.4	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
Exiting Leg Total									8									0
Buses	1	1	2	20	0	1	0	0	25	0	0	0	0	0	0	0	0	0
% Buses	100.0	100.0	100.0	69.0	0.0	25.0	0.0	0.0	67.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total									17									0

	Commonwealth Avenue (Route 30)									Carriage Road								
	from South									from Southwest								
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
4:00 PM	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
4:15 PM	0	1	0	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Total	0	2	1	3	0	0	0	0	6	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	1	0	0	0	0	1	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
Total	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0
Grand Total	0	2	1	5	0	0	0	0	8	0	0	0	0	0	0	0	0	0
Approach %	0.0	25.0	12.5	62.5	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total %	0.0	1.0	0.5	2.6	0.0	0.0	0.0	0.0	4.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total									12									30
Large Trucks	0	2	1	5	0	0	0	0	8	0	0	0	0	0	0	0	0	0
% Large Trucks	0.0	100.0	100.0	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
Exiting Leg Total									8									0
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% 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	0.0	0.0	0.0
Exiting Leg Total									4									0

	Washington Street									Carriage Road									
	from West									from Northwest									
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Total
4:00 PM	0	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	12
4:15 PM	0	0	0	3	0	0	0	0	3	13	3	0	0	0	0	0	0	16	26
4:30 PM	0	0	0	2	0	1	0	0	3	18	5	0	0	0	0	0	0	23	33
4:45 PM	0	0	0	1	0	0	0	0	1	16	9	0	0	0	0	0	0	25	31
Total	0	0	0	9	0	1	0	0	10	47	17	0	0	0	0	0	0	64	102
5:00 PM	0	0	0	3	0	0	0	0	3	1	0	0	0	0	0	0	0	1	8
5:15 PM	0	0	0	4	0	0	0	0	4	5	1	0	0	0	0	0	0	6	20
5:30 PM	0	0	0	3	0	0	0	0	3	19	7	0	0	0	0	0	0	26	38
5:45 PM	0	0	0	1	0	0	0	0	1	10	5	0	0	0	0	0	0	15	23
Total	0	0	0	11	0	0	0	0	11	35	13	0	0	0	0	0	0	48	89
Grand Total	0	0	0	20	0	1	0	0	21	82	30	0	0	0	0	0	0	112	191
Approach %	0.0	0.0	0.0	95.2	0.0	4.8	0.0	0.0		73.2	26.8	0.0	0.0	0.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	10.5	0.0	0.5	0.0	0.0	11.0	42.9	15.7	0.0	0.0	0.0	0.0	0.0	0.0	58.6	
Exiting Leg Total									111									2	191
Large Trucks	0	0	0	5	0	0	0	0	5	1	0	0	0	0	0	0	0	1	34
% Large Trucks	0.0	0.0	0.0	25.0	0.0	0.0	0.0	0.0	23.8	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	17.8
Exiting Leg Total									10									0	34
Buses	0	0	0	15	0	1	0	0	16	6	0	0	0	0	0	0	0	6	52
% Buses	0.0	0.0	0.0	75.0	0.0	100.0	0.0	0.0	76.2	7.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.4	27.2
Exiting Leg Total									26									2	52

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

4:00 PM	Commonwealth Avenue (Route 30)									Carriage Road								
	from North									from Northeast								
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
4:00 PM	0	0	0	1	0	1	0	0	2	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	4	0	1	0	0	5	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0	80.0	0.0	20.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
PHF	0.000	0.000	0.000	0.500	0.000	0.250	0.000	0.000	0.625	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Large Trucks	0	0	0	3	0	1	0	0	4	0	0	0	0	0	0	0	0	0
Large Trucks %	0.0	0.0	0.0	75.0	0.0	100.0	0.0	0.0	80.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Buses	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Buses %	0.0	0.0	0.0	25.0	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
Trucks Enter Leg	0	0	0	3	0	1	0	0	4	0	0	0	0	0	0	0	0	0
Bus Enter Leg	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Total Entering Leg	0	0	0	4	0	1	0	0	5	0	0	0	0	0	0	0	0	0
Trucks Exiting Leg									3									3
Buses Exiting Leg									1									1
Total Exiting Leg									4									4

	Washington Street									Carriage Road								
	from East									from Southeast								
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
4:00 PM	1	0	1	3	0	0	0	0	5	0	1	0	0	0	0	0	0	1
4:15 PM	0	0	0	3	0	1	0	0	4	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	1	0	1	0	0	2	0	1	0	0	0	0	0	0	1
4:45 PM	0	0	0	3	0	1	0	0	4	0	0	0	0	0	0	0	0	0
Total Volume	1	0	1	10	0	3	0	0	15	0	2	0	0	0	0	0	0	2
% Approach Total	6.7	0.0	6.7	66.7	0.0	20.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	
PHF	0.250	0.000	0.250	0.833	0.000	0.750	0.000	0.000	0.750	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.500
Large Trucks	0	0	0	1	0	2	0	0	3	0	2	0	0	0	0	0	0	2
Large Trucks %	0.0	0.0	0.0	10.0	0.0	66.7	0.0	0.0	20.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
Buses	1	0	1	9	0	1	0	0	12	0	0	0	0	0	0	0	0	0
Buses %	100.0	0.0	100.0	90.0	0.0	33.3	0.0	0.0	80.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Trucks Enter Leg	0	0	0	1	0	2	0	0	3	0	2	0	0	0	0	0	0	2
Bus Enter Leg	1	0	1	9	0	1	0	0	12	0	0	0	0	0	0	0	0	0
Total Entering Leg	1	0	1	10	0	3	0	0	15	0	2	0	0	0	0	0	0	2
Trucks Exiting Leg									5									0
Buses Exiting Leg									7									0
Total Exiting Leg									12									0

	Commonwealth Avenue (Route 30)									Carriage Road								
	from South									from Southwest								
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
4:00 PM	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
4:15 PM	0	1	0	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Total Volume	0	2	1	3	0	0	0	0	6	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	33.3	16.7	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	
PHF	0.000	0.500	0.250	0.375	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	0.000
Large Trucks	0	2	1	3	0	0	0	0	6	0	0	0	0	0	0	0	0	0
Large Trucks %	0.0	100.0	100.0	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
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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	0.0	0.0	0.0
Trucks Enter Leg	0	2	1	3	0	0	0	0	6	0	0	0	0	0	0	0	0	0
Bus Enter Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Entering Leg	0	2	1	3	0	0	0	0	6	0	0	0	0	0	0	0	0	0
Trucks Exiting Leg									5									0
Buses Exiting Leg									2									0
Total Exiting Leg									7									0

	Washington Street									Carriage Road									
	from West									from Northwest									
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Total
4:00 PM	0	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	12
4:15 PM	0	0	0	3	0	0	0	0	3	13	3	0	0	0	0	0	0	16	26
4:30 PM	0	0	0	2	0	1	0	0	3	18	5	0	0	0	0	0	0	23	33
4:45 PM	0	0	0	1	0	0	0	0	1	16	9	0	0	0	0	0	0	25	31
Total Volume	0	0	0	9	0	1	0	0	10	47	17	0	0	0	0	0	0	64	102
% Approach Total	0.0	0.0	0.0	90.0	0.0	10.0	0.0	0.0		73.4	26.6	0.0	0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.750	0.000	0.250	0.000	0.000	0.833	0.653	0.472	0.000	0.000	0.000	0.000	0.000	0.000	0.640	0.773
Large Trucks	0	0	0	2	0	0	0	0	2	1	0	0	0	0	0	0	0	1	18
Large Trucks %	0.0	0.0	0.0	22.2	0.0	0.0	0.0	0.0	20.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	17.6
Buses	0	0	0	7	0	1	0	0	8	2	0	0	0	0	0	0	0	2	23
Buses %	0.0	0.0	0.0	77.8	0.0	100.0	0.0	0.0	80.0	4.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.1	22.5
Trucks Enter Leg	0	0	0	2	0	0	0	0	2	1	0	0	0	0	0	0	0	1	18
Bus Enter Leg	0	0	0	7	0	1	0	0	8	2	0	0	0	0	0	0	0	2	23
Total Entering Leg	0	0	0	9	0	1	0	0	10	3	0	0	0	0	0	0	0	3	41
Trucks Exiting Leg									2									0	18
Buses Exiting Leg									11									1	23
Total Exiting Leg									13									1	41

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

PDI File #: **175958 AA**
Location: **N: Commonwealth Avenue (Route 30) S: Commonwealth Avenue (Route 30) NE: Carriage Road NW: Carriage Road**
Location: **E: Washington Street W: Washington Street SE: Carriage Road SW: Carriage Road**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 08, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

Large Trucks

Commonwealth Avenue (Route 30) from North

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
4:00 PM	0	0	0	1	0	1	0	0	2
4:15 PM	0	0	0	1	0	0	0	0	1
4:30 PM	0	0	0	1	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0
Total	0	0	0	3	0	1	0	0	4
5:00 PM	0	0	0	1	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	1	0	0	0	0	1
Total	0	0	0	2	0	0	0	0	2
Grand Total	0	0	0	5	0	1	0	0	6
Approach %	0.0	0.0	0.0	83.3	0.0	16.7	0.0	0.0	
Total %	0.0	0.0	0.0	14.7	0.0	2.9	0.0	0.0	17.6
Exiting Leg Total									5

Carriage Road from Northeast

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0
Approach %	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	0.0	0.0
Exiting Leg Total									3

Washington Street from East

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	1	0	0	1
4:45 PM	0	0	0	1	0	1	0	0	2
Total	0	0	0	1	0	2	0	0	3
5:00 PM	0	0	0	0	0	1	0	0	1
5:15 PM	0	0	0	4	0	0	0	0	4
5:30 PM	0	0	0	1	0	0	0	0	1
5:45 PM	0	0	0	3	0	0	0	0	3
Total	0	0	0	8	0	1	0	0	9
Grand Total	0	0	0	9	0	3	0	0	12
Approach %	0.0	0.0	0.0	75.0	0.0	25.0	0.0	0.0	
Total %	0.0	0.0	0.0	26.5	0.0	8.8	0.0	0.0	35.3
Exiting Leg Total									8

Carriage Road from Southeast

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
4:00 PM	0	1	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	1	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0
Total	0	2	0	0	0	0	0	0	2
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0
Grand Total	0	2	0	0	0	0	0	0	2
Approach %	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total %	0.0	5.9	0.0	0.0	0.0	0.0	0.0	0.0	5.9
Exiting Leg Total									0

Commonwealth Avenue (Route 30) from South

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
4:00 PM	0	1	0	0	0	0	0	0	1
4:15 PM	0	1	0	1	0	0	0	0	2
4:30 PM	0	0	0	2	0	0	0	0	2
4:45 PM	0	0	1	0	0	0	0	0	1
Total	0	2	1	3	0	0	0	0	6
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	1	0	0	0	0	1
5:30 PM	0	0	0	1	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0
Total	0	0	0	2	0	0	0	0	2
Grand Total	0	2	1	5	0	0	0	0	8
Approach %	0.0	25.0	12.5	62.5	0.0	0.0	0.0	0.0	
Total %	0.0	5.9	2.9	14.7	0.0	0.0	0.0	0.0	23.5
Exiting Leg Total									8

Carriage Road from Southwest

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0
Approach %	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	0.0	0.0
Exiting Leg Total									0

Washington Street from West

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
4:00 PM	0	0	0	1	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	1	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0
Total	0	0	0	2	0	0	0	0	2
5:00 PM	0	0	0	1	0	0	0	0	1
5:15 PM	0	0	0	1	0	0	0	0	1
5:30 PM	0	0	0	1	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0
Total	0	0	0	3	0	0	0	0	3
Grand Total	0	0	0	5	0	0	0	0	5
Approach %	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	
Total %	0.0	0.0	0.0	14.7	0.0	0.0	0.0	0.0	14.7
Exiting Leg Total									10

Carriage Road from Northwest

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	1	0	0	0	0	0	0	0	1
Total	1	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0
Grand Total	1	0	0	0	0	0	0	0	1
Approach %	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total %	2.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9
Exiting Leg Total									0

	Total
4:00 PM	5
4:15 PM	3
4:30 PM	6
4:45 PM	4
Total	18
5:00 PM	3
5:15 PM	6
5:30 PM	3
5:45 PM	4
Total	16
Grand Total	34
Approach %	
Total %	
Exiting Leg Total	34

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:
4:00 PM

Commonwealth Avenue (Route 30) from North

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
4:00 PM	0	0	0	1	0	1	0	0	2
4:15 PM	0	0	0	1	0	0	0	0	1
4:30 PM	0	0	0	1	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	3	0	1	0	0	4
% Approach Total	0.0	0.0	0.0	75.0	0.0	25.0	0.0	0.0	
PHF	0.000	0.000	0.000	0.750	0.000	0.250	0.000	0.000	0.500
Entering Leg	0	0	0	3	0	1	0	0	4
Exiting Leg									3
Total									7

Carriage Road from Northeast

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0
% Approach Total	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	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0
Exiting Leg									3
Total									3

Washington Street from East

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	1	0	0	1
4:45 PM	0	0	0	1	0	1	0	0	2
Total Volume	0	0	0	1	0	2	0	0	3
% Approach Total	0.0	0.0	0.0	33.3	0.0	66.7	0.0	0.0	
PHF	0.000	0.000	0.000	0.250	0.000	0.500	0.000	0.000	0.375
Entering Leg	0	0	0	1	0	2	0	0	3
Exiting Leg									5
Total									8

Carriage Road from Southeast

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
4:00 PM	0	1	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	1	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0
Total Volume	0	2	0	0	0	0	0	0	2
% Approach Total	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	0.000	0.000	0.000	0.000	0.500
Entering Leg	0	2	0	0	0	0	0	0	2
Exiting Leg									0
Total									2

Commonwealth Avenue (Route 30) from South

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
4:00 PM	0	1	0	0	0	0	0	0	1
4:15 PM	0	1	0	1	0	0	0	0	2
4:30 PM	0	0	0	2	0	0	0	0	2
4:45 PM	0	0	1	0	0	0	0	0	1
Total Volume	0	2	1	3	0	0	0	0	6
% Approach Total	0.0	33.3	16.7	50.0	0.0	0.0	0.0	0.0	
PHF	0.000	0.500	0.250	0.375	0.000	0.000	0.000	0.000	0.750
Entering Leg	0	2	1	3	0	0	0	0	6
Exiting Leg									5
Total									11

Carriage Road from Southwest

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0
% Approach Total	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	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0
Exiting Leg									0
Total									0

Washington Street from West

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
4:00 PM	0	0	0	1	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	1	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	2	0	0	0	0	2
% Approach Total	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	
PHF	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.500
Entering Leg	0	0	0	2	0	0	0	0	2
Exiting Leg									2
Total									4

Carriage Road from Northwest

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	1	0	0	0	0	0	0	0	1
Total Volume	1	0	0	0	0	0	0	0	1
% Approach Total	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
PHF	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250
Entering Leg	1	0	0	0	0	0	0	0	1
Exiting Leg									0
Total									1

	Total
4:00 PM	5
4:15 PM	3
4:30 PM	6
4:45 PM	4
Total Volume	18
% Approach Total	
PHF	0.750
Entering Leg	18
Exiting Leg	18
Total	36

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

PDI File #: **175958 AA**
Location: **N: Commonwealth Avenue (Route 30) S: Commonwealth Avenue (Route 30) NE: Carriage Road NW: Carriage Road**
Location: **E: Washington Street W: Washington Street SE: Carriage Road SW: Carriage Road**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 08, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

Buses

	Commonwealth Avenue (Route 30) from North									Carriage Road from Northeast								
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
4:00 PM	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	0	0
4:30 PM	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0
Total	0	0	0	2	0	2	0	0	4	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	3	0	2	0	0	5	0	0	0	0	0	0	0	0	0
Approach %	0.0	0.0	0.0	60.0	0.0	40.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total %	0.0	0.0	0.0	5.8	0.0	3.8	0.0	0.0	9.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total									2									1

	Washington Street from East									Carriage Road from Southeast								
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
4:00 PM	1	0	1	3	0	0	0	0	5	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	3	0	1	0	0	4	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0
Total	1	0	1	9	0	1	0	0	12	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	1	2	0	0	0	0	3	0	0	0	0	0	0	0	0	0
5:30 PM	0	1	0	5	0	0	0	0	6	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0
Total	0	1	1	11	0	0	0	0	13	0	0	0	0	0	0	0	0	0
Grand Total	1	1	2	20	0	1	0	0	25	0	0	0	0	0	0	0	0	0
Approach %	4.0	4.0	8.0	80.0	0.0	4.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total %	1.9	1.9	3.8	38.5	0.0	1.9	0.0	0.0	48.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total									17									0

	Commonwealth Avenue (Route 30) from South									Carriage Road from Southwest								
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
4:00 PM	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	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	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	0	0	0
5:00 PM	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
5:30 PM	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
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total									4									0

	Washington Street from West									Carriage Road from Northwest									
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Total
4:00 PM	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	7
4:15 PM	0	0	0	3	0	0	0	0	3	1	0	0	0	0	0	0	0	1	8
4:30 PM	0	0	0	1	0	1	0	0	2	0	0	0	0	0	0	0	0	0	4
4:45 PM	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	4
Total	0	0	0	7	0	1	0	0	8	2	0	0	0	0	0	0	0	2	23
5:00 PM	0	0	0	2	0	0	0	0	2	1	0	0	0	0	0	0	0	1	5
5:15 PM	0	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	8
5:30 PM	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0	2	11
5:45 PM	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	5
Total	0	0	0	8	0	0	0	0	8	4	0	0	0	0	0	0	0	4	29
Grand Total	0	0	0	15	0	1	0	0	16	6	0	0	0	0	0	0	0	6	52
Approach %	0.0	0.0	0.0	93.8	0.0	6.3	0.0	0.0		100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	28.8	0.0	1.9	0.0	0.0	30.8	11.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.5	
Exiting Leg Total									26									2	52

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

5:00 PM	Commonwealth Avenue (Route 30) from North									Carriage Road from Northeast								
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	2	0	2	0	0	4	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0	50.0	0.0	50.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
PHF	0.000	0.000	0.000	0.250	0.000	0.500	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	2	0	2	0	0	4	0	0	0	0	0	0	0	0	0
Exiting Leg									1									0
Total									5									0

5:00 PM	Washington Street from East									Carriage Road from Southeast								
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
5:00 PM	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	1	2	0	0	0	0	3	0	0	0	0	0	0	0	0	0
5:30 PM	0	1	0	5	0	0	0	0	6	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0
Total Volume	0	1	1	11	0	0	0	0	13	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	7.7	7.7	84.6	0.0	0.0	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	0.250	0.550	0.000	0.000	0.000	0.000	0.542	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	1	1	11	0	0	0	0	13	0	0	0	0	0	0	0	0	0
Exiting Leg									10									0
Total									23									0

5:00 PM	Commonwealth Avenue (Route 30) from South									Carriage Road from Southwest								
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total
5:00 PM	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
5:30 PM	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
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% 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	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	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg									2									0
Total									2									0

5:00 PM	Washington Street from West									Carriage Road from Northwest									
	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Total
5:00 PM	0	0	0	2	0	0	0	0	2	1	0	0	0	0	0	0	0	1	5
5:15 PM	0	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	8
5:30 PM	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0	2	11
5:45 PM	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	5
Total Volume	0	0	0	8	0	0	0	0	8	4	0	0	0	0	0	0	0	4	29
% Approach Total	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	0.0	0.0		
PHF	0.000	0.000	0.000	0.667	0.000	0.000	0.000	0.000	0.667	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.659
Entering Leg	0	0	0	8	0	0	0	0	8	4	0	0	0	0	0	0	0	4	29
Exiting Leg									15									1	29
Total									23									5	58

PRECISION DATA INDUSTRIES, LLC

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

PDI File #: **175958 AA**
Location: **N: Commonwealth Avenue (Route 30) S: Commonwealth Avenue (Route 30) NE: Carriage Road NW: Carriage Road**
Location: **E: Washington Street W: Washington Street SE: Carriage Road SW: Carriage Road**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 08, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

Bicycles (on Roadway and Crosswalks)

Commonwealth Avenue (Route 30) from North

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-EB	CW-WB	Total
4:00 PM	0	0	0	0	0	0	0	0	1	0	1
4:15 PM	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
4:45 PM	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	1	0	1
5:00 PM	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
5:30 PM	0	0	0	0	0	1	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	1	0	0	0	0	1
Grand Total	0	0	0	0	0	1	0	0	1	0	2
Approach %	0.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	50.0	0.0	
Total %	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	3.9
Exiting Leg Total											1

Carriage Road from Northeast

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-SEB	CW-NWB	Total
4:00 PM	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
4:30 PM	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	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
5:30 PM	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
Total	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0
Approach %	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	0.0	0.0	0.0	0.0
Exiting Leg Total											5

Washington Street from East

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-SB	CW-NB	Total
4:00 PM	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	1	0	0	0	0	0	0	1
4:30 PM	0	0	0	3	0	0	0	0	0	0	3
4:45 PM	1	0	1	0	0	0	0	0	1	0	3
Total	1	0	1	4	0	0	0	0	1	0	7
5:00 PM	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	3	2	5
5:30 PM	0	0	0	1	0	0	0	0	0	0	1
5:45 PM	2	0	0	1	0	0	0	0	0	0	3
Total	2	0	0	2	0	0	0	0	3	2	9
Grand Total	3	0	1	6	0	0	0	0	4	2	16
Approach %	18.8	0.0	6.3	37.5	0.0	0.0	0.0	0.0	25.0	12.5	
Total %	5.9	0.0	2.0	11.8	0.0	0.0	0.0	0.0	7.8	3.9	31.4
Exiting Leg Total											23

Carriage Road from Southeast

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-SWB	CW-NEB	Total
4:00 PM	1	0	0	0	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	1	0	0	0	0	0	0	0	0	1
4:45 PM	0	1	0	0	0	0	0	0	0	0	1
Total	1	2	0	0	0	0	0	0	0	0	3
5:00 PM	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
5:30 PM	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
Total	0	0	0	0	0	0	0	0	0	0	0
Grand Total	1	2	0	0	0	0	0	0	0	0	3
Approach %	33.3	66.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total %	2.0	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.9
Exiting Leg Total											0

Commonwealth Avenue (Route 30) from South

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-WB	CW-EB	Total
4:00 PM	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
4:30 PM	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	1	0	1
5:30 PM	0	0	0	0	0	0	0	0	1	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	2	0	2
Grand Total	0	0	0	0	0	0	0	0	2	0	2
Approach %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.9	0.0	3.9
Exiting Leg Total											2

Carriage Road from Southwest

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-NWB	CW-SEB	Total
4:00 PM	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
4:30 PM	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	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
5:30 PM	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
Total	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0
Approach %	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	0.0	0.0	0.0	0.0
Exiting Leg Total											12

Washington Street from West

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-NB	CW-SB	Total
4:00 PM	0	0	0	2	0	0	0	0	0	0	2
4:15 PM	0	0	0	2	0	0	0	0	0	0	2
4:30 PM	0	0	0	2	0	0	0	0	0	0	2
4:45 PM	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	6	0	0	0	0	0	0	6
5:00 PM	0	0	0	1	0	0	0	0	0	0	1
5:15 PM	0	0	0	5	0	0	0	0	0	0	5
5:30 PM	0	0	0	1	0	0	0	0	0	0	1
5:45 PM	0	0	0	2	0	0	0	0	0	0	2
Total	0	0	0	9	0	0	0	0	0	0	9
Grand Total	0	0	0	15	0	0	0	0	0	0	15
Approach %	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total %	0.0	0.0	0.0	29.4	0.0	0.0	0.0	0.0	0.0	0.0	29.4
Exiting Leg Total											6

Carriage Road from Northwest

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-NEB	CW-SWB	Total
4:00 PM	0	1	0	0	0	0	0	0	1	0	2
4:15 PM	0	1	0	0	0	0	0	0	0	0	1
4:30 PM	0	1	0	0	0	0	0	0	0	0	1
4:45 PM	0	2	0	0	0	0	0	0	0	0	2
Total	0	5	0	0	0	0	0	0	1	0	6
5:00 PM	0	1	0	0	0	0	0	0	0	0	1
5:15 PM	0	2	0	0	0	0	0	0	0	0	2
5:30 PM	0	3	0	0	0	0	0	0	0	0	3
5:45 PM	0	1	0	0	0	0	0	0	0	0	1
Total	0	7	0	0	0	0	0	0	0	0	7
Grand Total	0	12	0	0	0	0	0	0	1	0	13
Approach %	0.0	92.3	0.0	0.0	0.0	0.0	0.0	0.0	7.7	0.0	
Total %	0.0	23.5	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	25.5
Exiting Leg Total											2

	Total
4:00 PM	6
4:15 PM	4
4:30 PM	7
4:45 PM	6
Total	23
5:00 PM	2
5:15 PM	13
5:30 PM	7
5:45 PM	6
Total	28
Grand Total	51
Approach %	
Total %	
Exiting Leg Total	51

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

4:30 PM

Commonwealth Avenue (Route 30) from North

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-EB	CW-WB	Total
4:30 PM	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	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
Total Volume	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	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	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg											0
Total											0

Carriage Road from Northeast

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-SEB	CW-NWB	Total
4:30 PM	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	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
Total Volume	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	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	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg											3
Total											3

Washington Street from East

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-SB	CW-NB	Total
4:30 PM	0	0	0	3	0	0	0	0	0	0	3
4:45 PM	1	0	1	0	0	0	0	0	1	0	3
5:00 PM	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	3	2	5
Total Volume	1	0	1	3	0	0	0	0	4	2	11
% Approach Total	9.1	0.0	9.1	27.3	0.0	0.0	0.0	0.0	36.4	18.2	
PHF	0.250	0.000	0.250	0.250	0.000	0.000	0.000	0.000	0.333	0.250	0.550
Entering Leg	1	0	1	3	0	0	0	0	4	2	11
Exiting Leg											14
Total											25

Carriage Road from Southeast

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-SWB	CW-NEB	Total
4:30 PM	0	1	0	0	0	0	0	0	0	0	1
4:45 PM	0	1	0	0	0	0	0	0	0	0	1
5:00 PM	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
Total Volume	0	2	0	0	0	0	0	0	0	0	2
% Approach Total	0.0	100.0	0.0	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	0.000	0.000	0.000	0.000	0.000	0.500
Entering Leg	0	2	0	0	0	0	0	0	0	0	2
Exiting Leg											0
Total											2

Commonwealth Avenue (Route 30) from South

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-WB	CW-EB	Total
4:30 PM	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	1	0	1
Total Volume	0	0	0	0	0	0	0	0	1	0	1
% Approach Total	0.0	0.0	0.0	0.0	0.0	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	0.250	0.000	0.250
Entering Leg	0	0	0	0	0	0	0	0	1	0	1
Exiting Leg											1
Total											2

Carriage Road from Southwest

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-NWB	CW-SEB	Total
4:30 PM	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	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
Total Volume	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	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	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg											6
Total											6

Washington Street from West

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-NB	CW-SB	Total
4:30 PM	0	0	0	2	0	0	0	0	0	0	2
4:45 PM	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	1	0	0	0	0	0	0	1
5:15 PM	0	0	0	5	0	0	0	0	0	0	5
Total Volume	0	0	0	8	0	0	0	0	0	0	8
% Approach Total	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	
PHF	0.000	0.000	0.000	0.400	0.000	0.000	0.000	0.000	0.000	0.000	0.400
Entering Leg	0	0	0	8	0	0	0	0	0	0	8
Exiting Leg											3
Total											11

Carriage Road from Northwest

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-NEB	CW-SWB	Total
4:30 PM	0	1	0	0	0	0	0	0	0	0	1
4:45 PM	0	2	0	0	0	0	0	0	0	0	2
5:00 PM	0	1	0	0	0	0	0	0	0	0	1
5:15 PM	0	2	0	0	0	0	0	0	0	0	2
Total Volume	0	6	0	0	0	0	0	0	0	0	6
% Approach Total	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
PHF	0.000	0.750	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.750
Entering Leg	0	6	0	0	0	0	0	0	0	0	6
Exiting Leg											1
Total											7

	Total
4:30 PM	7
4:45 PM	6
5:00 PM	2
5:15 PM	13
Total Volume	28
% Approach Total	
PHF	0.538
Entering Leg	28
Exiting Leg	28
Total	56

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

PDI File #: **175958 AA**
Location: **N: Commonwealth Avenue (Route 30) S: Commonwealth Avenue (Route 30) NE: Carriage Road NW: Carriage Road**
Location: **E: Washington Street W: Washington Street SE: Carriage Road SW: Carriage Road**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 08, 2017**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class: **Pedestrians**

Commonwealth Avenue (Route 30) from North

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-EB	CW-WB	Total
4:00 PM	0	0	0	0	0	0	0	0	16	13	29
4:15 PM	0	0	0	0	0	0	0	0	14	30	44
4:30 PM	0	0	0	0	0	0	0	0	23	29	52
4:45 PM	0	0	0	0	0	0	0	0	16	24	40
Total	0	0	0	0	0	0	0	0	69	96	165
5:00 PM	0	0	0	0	0	0	0	0	23	26	49
5:15 PM	0	0	0	0	0	0	0	0	12	32	44
5:30 PM	0	0	0	0	0	0	0	0	20	19	39
5:45 PM	0	0	0	0	0	0	0	0	9	38	47
Total	0	0	0	0	0	0	0	0	64	115	179
Grand Total	0	0	0	0	0	0	0	0	133	211	344
Approach %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	38.7	61.3	
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.0	14.3	23.4
Exiting Leg Total											344

Carriage Road from Northeast

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-SEB	CW-NWB	Total
4:00 PM	0	0	0	0	0	0	0	0	2	1	3
4:15 PM	0	0	0	0	0	0	0	0	8	4	12
4:30 PM	0	0	0	0	0	0	0	0	14	5	19
4:45 PM	0	0	0	0	0	0	0	0	15	7	22
Total	0	0	0	0	0	0	0	0	39	17	56
5:00 PM	0	0	0	0	0	0	0	0	16	13	29
5:15 PM	0	0	0	0	0	0	0	0	18	27	45
5:30 PM	0	0	0	0	0	0	0	0	1	5	6
5:45 PM	0	0	0	0	0	0	0	0	18	0	18
Total	0	0	0	0	0	0	0	0	53	45	98
Grand Total	0	0	0	0	0	0	0	0	92	62	154
Approach %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	59.7	40.3	
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.3	4.2	10.5
Exiting Leg Total											154

Washington Street from East

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-SB	CW-NB	Total
4:00 PM	0	0	0	0	0	0	0	0	13	12	25
4:15 PM	0	0	0	0	0	0	0	0	12	11	23
4:30 PM	0	0	0	0	0	0	0	0	16	19	35
4:45 PM	0	0	0	0	0	0	0	0	14	16	30
Total	0	0	0	0	0	0	0	0	55	58	113
5:00 PM	0	0	0	0	0	0	0	0	23	15	38
5:15 PM	0	0	0	0	0	0	0	0	11	9	20
5:30 PM	0	0	0	0	0	0	0	0	10	14	24
5:45 PM	0	0	0	0	0	0	0	0	11	12	23
Total	0	0	0	0	0	0	0	0	55	50	105
Grand Total	0	0	0	0	0	0	0	0	110	108	218
Approach %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.5	49.5	
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.5	7.3	14.8
Exiting Leg Total											218

Carriage Road from Southeast

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-SWB	CW-NEB	Total
4:00 PM	0	0	0	0	0	0	0	0	5	6	11
4:15 PM	0	0	0	0	0	0	0	0	4	6	10
4:30 PM	0	0	0	0	0	0	0	0	5	5	10
4:45 PM	0	0	0	0	0	0	0	0	10	4	14
Total	0	0	0	0	0	0	0	0	24	21	45
5:00 PM	0	0	0	0	0	0	0	0	7	6	13
5:15 PM	0	0	0	0	0	0	0	0	9	8	17
5:30 PM	0	0	0	0	0	0	0	0	4	9	13
5:45 PM	0	0	0	0	0	0	0	0	6	4	10
Total	0	0	0	0	0	0	0	0	26	27	53
Grand Total	0	0	0	0	0	0	0	0	50	48	98
Approach %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	51.0	49.0	
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.4	3.3	6.7
Exiting Leg Total											98

Commonwealth Avenue (Route 30) from South

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-WB	CW-EB	Total
4:00 PM	0	0	0	0	0	0	0	0	3	4	7
4:15 PM	0	0	0	0	0	0	0	0	4	5	9
4:30 PM	0	0	0	0	0	0	0	0	5	5	10
4:45 PM	0	0	0	0	0	0	0	0	7	3	10
Total	0	0	0	0	0	0	0	0	19	17	36
5:00 PM	0	0	0	0	0	0	0	0	9	7	16
5:15 PM	0	0	0	0	0	0	0	0	10	8	18
5:30 PM	0	0	0	0	0	0	0	0	7	11	18
5:45 PM	0	0	0	0	0	0	0	0	6	6	12
Total	0	0	0	0	0	0	0	0	32	32	64
Grand Total	0	0	0	0	0	0	0	0	51	49	100
Approach %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	51.0	49.0	
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	3.3	6.8
Exiting Leg Total											100

Carriage Road from Southwest

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-NWB	CW-SEB	Total
4:00 PM	0	0	0	0	0	0	0	0	1	3	4
4:15 PM	0	0	0	0	0	0	0	0	3	4	7
4:30 PM	0	0	0	0	0	0	0	0	3	4	7
4:45 PM	0	0	0	0	0	0	0	0	6	3	9
Total	0	0	0	0	0	0	0	0	13	14	27
5:00 PM	0	0	0	0	0	0	0	0	10	7	17
5:15 PM	0	0	0	0	0	0	0	0	10	7	17
5:30 PM	0	0	0	0	0	0	0	0	5	11	16
5:45 PM	0	0	0	0	0	0	0	0	3	6	9
Total	0	0	0	0	0	0	0	0	28	31	59
Grand Total	0	0	0	0	0	0	0	0	41	45	86
Approach %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	47.7	52.3	
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8	3.1	5.8
Exiting Leg Total											86

Washington Street from West

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-NB	CW-SB	Total
4:00 PM	0	0	0	0	0	0	0	0	3	6	9
4:15 PM	0	0	0	0	0	0	0	0	5	14	19
4:30 PM	0	0	0	0	0	0	0	0	7	12	19
4:45 PM	0	0	0	0	0	0	0	0	4	7	11
Total	0	0	0	0	0	0	0	0	19	39	58
5:00 PM	0	0	0	0	0	0	0	0	6	10	16
5:15 PM	0	0	0	0	0	0	0	0	8	16	24
5:30 PM	0	0	0	0	0	0	0	0	10	11	21
5:45 PM	0	0	0	0	0	0	0	0	5	21	26
Total	0	0	0	0	0	0	0	0	29	58	87
Grand Total	0	0	0	0	0	0	0	0	48	97	145
Approach %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	33.1	66.9	
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.3	6.6	9.9
Exiting Leg Total											145

Carriage Road from Northwest

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-NEB	CW-SWB	Total	Total
4:00 PM	0	0	0	0	0	0	0	0	13	13	26	114
4:15 PM	0	0	0	0	0	0	0	0	12	31	43	167
4:30 PM	0	0	0	0	0	0	0	0	17	29	46	198
4:45 PM	0	0	0	0	0	0	0	0	13	20	33	169
Total	0	0	0	0	0	0	0	0	55	93	148	648
5:00 PM	0	0	0	0	0	0	0	0	22	22	44	222
5:15 PM	0	0	0	0	0	0	0	0	15	33	48	233
5:30 PM	0	0	0	0	0	0	0	0	19	18	37	174
5:45 PM	0	0	0	0	0	0	0	0	9	40	49	194
Total	0	0	0	0	0	0	0	0	65	113	178	823
Grand Total	0	0	0	0	0	0	0	0	120	206	326	1471
Approach %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	36.8	63.2		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.2	14.0	22.2	
Exiting Leg Total											326	1471

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

5:00 PM

Commonwealth Avenue (Route 30) from North

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-EB	CW-WB	Total
5:00 PM	0	0	0	0	0	0	0	0	23	26	49
5:15 PM	0	0	0	0	0	0	0	0	12	32	44
5:30 PM	0	0	0	0	0	0	0	0	20	19	39
5:45 PM	0	0	0	0	0	0	0	0	9	38	47
Total Volume	0	0	0	0	0	0	0	0	64	115	179
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.8	64.2	
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.696	0.757	0.913
Entering Leg	0	0	0	0	0	0	0	0	64	115	179
Exiting Leg											179
Total											358

Carriage Road from Northeast

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-SEB	CW-NWB	Total
5:00 PM	0	0	0	0	0	0	0	0	16	13	29
5:15 PM	0	0	0	0	0	0	0	0	18	27	45
5:30 PM	0	0	0	0	0	0	0	0	1	5	6
5:45 PM	0	0	0	0	0	0	0	0	18	0	18
Total Volume	0	0	0	0	0	0	0	0	53	45	98
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	54.1	45.9	
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.736	0.417	0.544
Entering Leg	0	0	0	0	0	0	0	0	53	45	98
Exiting Leg											98
Total											196

Washington Street from East

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-SB	CW-NB	Total
5:00 PM	0	0	0	0	0	0	0	0	23	15	38
5:15 PM	0	0	0	0	0	0	0	0	11	9	20
5:30 PM	0	0	0	0	0	0	0	0	10	14	24
5:45 PM	0	0	0	0	0	0	0	0	11	12	23
Total Volume	0	0	0	0	0	0	0	0	55	50	105
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	52.4	47.6	
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.598	0.833	0.691
Entering Leg	0	0	0	0	0	0	0	0	55	50	105
Exiting Leg											105
Total											210

Carriage Road from Southeast

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-SWB	CW-NEB	Total
5:00 PM	0	0	0	0	0	0	0	0	7	6	13
5:15 PM	0	0	0	0	0	0	0	0	9	8	17
5:30 PM	0	0	0	0	0	0	0	0	4	9	13
5:45 PM	0	0	0	0	0	0	0	0	6	4	10
Total Volume	0	0	0	0	0	0	0	0	26	27	53
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	49.1	50.9	
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.722	0.750	0.779
Entering Leg	0	0	0	0	0	0	0	0	26	27	53
Exiting Leg											53
Total											106

Commonwealth Avenue (Route 30) from South

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-WB	CW-EB	Total
5:00 PM	0	0	0	0	0	0	0	0	9	7	16
5:15 PM	0	0	0	0	0	0	0	0	10	8	18
5:30 PM	0	0	0	0	0	0	0	0	7	11	18
5:45 PM	0	0	0	0	0	0	0	0	6	6	12
Total Volume	0	0	0	0	0	0	0	0	32	32	64
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	50.0	
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.800	0.727	0.889
Entering Leg	0	0	0	0	0	0	0	0	32	32	64
Exiting Leg											64
Total											128

Carriage Road from Southwest

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-NWB	CW-SEB	Total
5:00 PM	0	0	0	0	0	0	0	0	10	7	17
5:15 PM	0	0	0	0	0	0	0	0	10	7	17
5:30 PM	0	0	0	0	0	0	0	0	5	11	16
5:45 PM	0	0	0	0	0	0	0	0	3	6	9
Total Volume	0	0	0	0	0	0	0	0	28	31	59
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	47.5	52.5	
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.700	0.705	0.868
Entering Leg	0	0	0	0	0	0	0	0	28	31	59
Exiting Leg											59
Total											118

Washington Street from West

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-NB	CW-SB	Total
5:00 PM	0	0	0	0	0	0	0	0	6	10	16
5:15 PM	0	0	0	0	0	0	0	0	8	16	24
5:30 PM	0	0	0	0	0	0	0	0	10	11	21
5:45 PM	0	0	0	0	0	0	0	0	5	21	26
Total Volume	0	0	0	0	0	0	0	0	29	58	87
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	33.3	66.7	
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.725	0.690	0.837
Entering Leg	0	0	0	0	0	0	0	0	29	58	87
Exiting Leg											87
Total											174

Carriage Road from Northwest

	Hard Right	Right	Bear Right	Thru	Bear Left	Left	Hard Left	U-Turn	CW-NEB	CW-SWB	Total	Total
5:00 PM	0	0	0	0	0	0	0	0	22	22	44	222
5:15 PM	0	0	0	0	0	0	0	0	15	33	48	233
5:30 PM	0	0	0	0	0	0	0	0	19	18	37	174
5:45 PM	0	0	0	0	0	0	0	0	9	40	49	194
Total Volume	0	0	0	0	0	0	0	0	65	113	178	823
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	36.5	63.5		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.739	0.706	0.908	0.883
Entering Leg	0	0	0	0	0	0	0	0	65	113	178	823
Exiting Leg											178	823
Total											356	1646

PDI File #: **175958 B**
Location: **N: Allston Street S: Driveway**
Location: **E: Washington Street W: Washington Street**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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 and Heavy Vehicles (Combined)

	Allston Street from North					Washington Street from East					Driveway from South					Washington Street 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	8	0	16	0	24	4	79	0	0	83	1	0	0	0	1	0	137	0	0	137	245
7:15 AM	5	0	26	0	31	6	96	0	0	102	0	0	0	0	0	0	155	3	1	159	292
7:30 AM	3	0	16	0	19	12	75	0	0	87	0	0	0	0	0	0	159	8	0	167	273
7:45 AM	4	0	10	0	14	7	102	0	0	109	0	0	0	0	0	2	130	8	0	140	263
Total	20	0	68	0	88	29	352	0	0	381	1	0	0	0	1	2	581	19	1	603	1073
8:00 AM	11	0	18	0	29	13	99	0	0	112	0	0	0	0	0	0	129	10	0	139	280
8:15 AM	1	0	11	0	12	10	106	1	0	117	0	0	0	0	0	0	122	8	0	130	259
8:30 AM	7	0	11	0	18	6	96	0	0	102	0	0	0	0	0	1	140	4	0	145	265
8:45 AM	4	0	11	1	16	12	79	0	0	91	0	0	0	0	0	1	144	3	0	148	255
Total	23	0	51	1	75	41	380	1	0	422	0	0	0	0	0	2	535	25	0	562	1059
Grand Total	43	0	119	1	163	70	732	1	0	803	1	0	0	0	1	4	1116	44	1	1165	2132
Approach %	26.4	0.0	73.0	0.6		8.7	91.2	0.1	0.0		100.0	0.0	0.0	0.0		0.3	95.8	3.8	0.1		
Total %	2.0	0.0	5.6	0.0	7.6	3.3	34.3	0.0	0.0	37.7	0.0	0.0	0.0	0.0	0.0	0.2	52.3	2.1	0.0	54.6	
Exiting Leg Total					115					1236					5					776	2132
Cars	41	0	114	1	156	67	693	0	0	760	1	0	0	0	1	3	1062	41	1	1107	2024
% Cars	95.3	0.0	95.8	100.0	95.7	95.7	94.7	0.0	0.0	94.6	100.0	0.0	0.0	0.0	100.0	75.0	95.2	93.2	100.0	95.0	94.9
Exiting Leg Total					109					1177					3					735	2024
Heavy Vehicles	2	0	5	0	7	3	39	1	0	43	0	0	0	0	0	1	54	3	0	58	108
% Heavy Vehicles	4.7	0.0	4.2	0.0	4.3	4.3	5.3	100.0	0.0	5.4	0.0	0.0	0.0	0.0	0.0	25.0	4.8	6.8	0.0	5.0	5.1
Exiting Leg Total					6					59					2					41	108

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

7:15 AM	Allston Street from North					Washington Street from East					Driveway from South					Washington Street 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	5	0	26	0	31	6	96	0	0	102	0	0	0	0	0	0	155	3	1	159	292
7:30 AM	3	0	16	0	19	12	75	0	0	87	0	0	0	0	0	0	159	8	0	167	273
7:45 AM	4	0	10	0	14	7	102	0	0	109	0	0	0	0	0	2	130	8	0	140	263
8:00 AM	11	0	18	0	29	13	99	0	0	112	0	0	0	0	0	0	129	10	0	139	280
Total Volume	23	0	70	0	93	38	372	0	0	410	0	0	0	0	0	2	573	29	1	605	1108
% Approach Total	24.7	0.0	75.3	0.0		9.3	90.7	0.0	0.0		0.0	0.0	0.0	0.0		0.3	94.7	4.8	0.2		
PHF	0.523	0.000	0.673	0.000	0.750	0.731	0.912	0.000	0.000	0.915	0.000	0.000	0.000	0.000	0.000	0.250	0.901	0.725	0.250	0.906	0.949
Cars	21	0	66	0	87	36	351	0	0	387	0	0	0	0	0	1	546	26	1	574	1048
Cars %	91.3	0.0	94.3	0.0	93.5	94.7	94.4	0.0	0.0	94.4	0.0	0.0	0.0	0.0	0.0	50.0	95.3	89.7	100.0	94.9	94.6
Heavy Vehicles	2	0	4	0	6	2	21	0	0	23	0	0	0	0	0	1	27	3	0	31	60
Heavy Vehicles %	8.7	0.0	5.7	0.0	6.5	5.3	5.6	0.0	0.0	5.6	0.0	0.0	0.0	0.0	0.0	50.0	4.7	10.3	0.0	5.1	5.4
Cars Enter Leg	21	0	66	0	87	36	351	0	0	387	0	0	0	0	0	1	546	26	1	574	1048
Heavy Enter Leg	2	0	4	0	6	2	21	0	0	23	0	0	0	0	0	1	27	3	0	31	60
Total Entering Leg	23	0	70	0	93	38	372	0	0	410	0	0	0	0	0	2	573	29	1	605	1108
Cars Exiting Leg					62					612					1					373	1048
Heavy Exiting Leg					5					31					1					23	60
Total Exiting Leg					67					643					2					396	1108

PDI File #: **175958 B**
Location: **N: Allston Street S: Driveway**
Location: **E: Washington Street W: Washington Street**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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

	Allston Street from North					Washington Street from East					Driveway from South					Washington Street 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	8	0	16	0	24	3	71	0	0	74	1	0	0	0	1	0	131	0	0	131	230
7:15 AM	5	0	24	0	29	6	90	0	0	96	0	0	0	0	0	0	149	3	1	153	278
7:30 AM	2	0	15	0	17	11	71	0	0	82	0	0	0	0	0	0	151	8	0	159	258
7:45 AM	3	0	9	0	12	7	99	0	0	106	0	0	0	0	0	1	123	6	0	130	248
Total	18	0	64	0	82	27	331	0	0	358	1	0	0	0	1	1	554	17	1	573	1014
8:00 AM	11	0	18	0	29	12	91	0	0	103	0	0	0	0	0	0	123	9	0	132	264
8:15 AM	1	0	11	0	12	10	101	0	0	111	0	0	0	0	0	0	116	8	0	124	247
8:30 AM	7	0	11	0	18	6	93	0	0	99	0	0	0	0	0	1	134	4	0	139	256
8:45 AM	4	0	10	1	15	12	77	0	0	89	0	0	0	0	0	1	135	3	0	139	243
Total	23	0	50	1	74	40	362	0	0	402	0	0	0	0	0	2	508	24	0	534	1010
Grand Total	41	0	114	1	156	67	693	0	0	760	1	0	0	0	1	3	1062	41	1	1107	2024
Approach %	26.3	0.0	73.1	0.6		8.8	91.2	0.0	0.0		100.0	0.0	0.0	0.0		0.3	95.9	3.7	0.1		
Total %	2.0	0.0	5.6	0.0	7.7	3.3	34.2	0.0	0.0	37.5	0.0	0.0	0.0	0.0	0.0	0.1	52.5	2.0	0.0	54.7	
Exiting Leg Total					109					1177					3					735	2024

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

7:15 AM	Allston Street from North					Washington Street from East					Driveway from South					Washington Street 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	5	0	24	0	29	6	90	0	0	96	0	0	0	0	0	0	149	3	1	153	278
7:30 AM	2	0	15	0	17	11	71	0	0	82	0	0	0	0	0	0	151	8	0	159	258
7:45 AM	3	0	9	0	12	7	99	0	0	106	0	0	0	0	0	1	123	6	0	130	248
8:00 AM	11	0	18	0	29	12	91	0	0	103	0	0	0	0	0	0	123	9	0	132	264
Total Volume	21	0	66	0	87	36	351	0	0	387	0	0	0	0	0	1	546	26	1	574	1048
% Approach Total	24.1	0.0	75.9	0.0		9.3	90.7	0.0	0.0		0.0	0.0	0.0	0.0		0.2	95.1	4.5	0.2		
PHF	0.477	0.000	0.688	0.000	0.750	0.750	0.886	0.000	0.000	0.913	0.000	0.000	0.000	0.000	0.000	0.250	0.904	0.722	0.250	0.903	0.942
Entering Leg	21	0	66	0	87	36	351	0	0	387	0	0	0	0	0	1	546	26	1	574	1048
Exiting Leg					62					612					1					373	1048
Total					149					999					1					947	2096

PDI File #: **175958 B**
Location: **N: Allston Street S: Driveway**
Location: **E: Washington Street W: Washington Street**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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 (Combined-Large Trucks and Buses)**

	Allston Street from North					Washington Street from East					Driveway from South					Washington Street 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	0	0	0	1	8	0	0	9	0	0	0	0	0	0	6	0	0	6	15
7:15 AM	0	0	2	0	2	0	6	0	0	6	0	0	0	0	0	0	6	0	0	6	14
7:30 AM	1	0	1	0	2	1	4	0	0	5	0	0	0	0	0	0	8	0	0	8	15
7:45 AM	1	0	1	0	2	0	3	0	0	3	0	0	0	0	0	1	7	2	0	10	15
Total	2	0	4	0	6	2	21	0	0	23	0	0	0	0	0	1	27	2	0	30	59
8:00 AM	0	0	0	0	0	1	8	0	0	9	0	0	0	0	0	0	6	1	0	7	16
8:15 AM	0	0	0	0	0	0	5	1	0	6	0	0	0	0	0	0	6	0	0	6	12
8:30 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	6	0	0	6	9
8:45 AM	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	0	9	0	0	9	12
Total	0	0	1	0	1	1	18	1	0	20	0	0	0	0	0	0	27	1	0	28	49
Grand Total	2	0	5	0	7	3	39	1	0	43	0	0	0	0	0	1	54	3	0	58	108
Approach %	28.6	0.0	71.4	0.0		7.0	90.7	2.3	0.0		0.0	0.0	0.0	0.0		1.7	93.1	5.2	0.0		
Total %	1.9	0.0	4.6	0.0	6.5	2.8	36.1	0.9	0.0	39.8	0.0	0.0	0.0	0.0	0.0	0.9	50.0	2.8	0.0	53.7	
Exiting Leg Total					6					59					2					41	108
Large Trucks	2	0	2	0	4	1	11	0	0	12	0	0	0	0	0	0	21	1	0	22	38
% Large Trucks	100.0	0.0	40.0	0.0	57.1	33.3	28.2	0.0	0.0	27.9	0.0	0.0	0.0	0.0	0.0	0.0	38.9	33.3	0.0	37.9	35.2
Exiting Leg Total					2					23					0					13	38
Buses	0	0	3	0	3	2	28	1	0	31	0	0	0	0	0	1	33	2	0	36	70
% Buses	0.0	0.0	60.0	0.0	42.9	66.7	71.8	100.0	0.0	72.1	0.0	0.0	0.0	0.0	0.0	100.0	61.1	66.7	0.0	62.1	64.8
Exiting Leg Total					4					36					2					28	70

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

7:15 AM	Allston Street from North					Washington Street from East					Driveway from South					Washington Street 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	0	2	0	2	0	6	0	0	6	0	0	0	0	0	0	6	0	0	6	14
7:30 AM	1	0	1	0	2	1	4	0	0	5	0	0	0	0	0	0	8	0	0	8	15
7:45 AM	1	0	1	0	2	0	3	0	0	3	0	0	0	0	0	1	7	2	0	10	15
8:00 AM	0	0	0	0	0	1	8	0	0	9	0	0	0	0	0	0	6	1	0	7	16
Total Volume	2	0	4	0	6	2	21	0	0	23	0	0	0	0	0	1	27	3	0	31	60
% Approach Total	33.3	0.0	66.7	0.0		8.7	91.3	0.0	0.0		0.0	0.0	0.0	0.0		3.2	87.1	9.7	0.0		
PHF	0.500	0.000	0.500	0.000	0.750	0.500	0.656	0.000	0.000	0.639	0.000	0.000	0.000	0.000	0.000	0.250	0.844	0.375	0.000	0.775	0.938
Large Trucks	2	0	2	0	4	1	7	0	0	8	0	0	0	0	0	0	10	1	0	11	23
Large Trucks %	100.0	0.0	50.0	0.0	66.7	50.0	33.3	0.0	0.0	34.8	0.0	0.0	0.0	0.0	0.0	0.0	37.0	33.3	0.0	35.5	38.3
Buses	0	0	2	0	2	1	14	0	0	15	0	0	0	0	0	1	17	2	0	20	37
Buses %	0.0	0.0	50.0	0.0	33.3	50.0	66.7	0.0	0.0	65.2	0.0	0.0	0.0	0.0	0.0	100.0	63.0	66.7	0.0	64.5	61.7
Trucks Enter Leg	2	0	2	0	4	1	7	0	0	8	0	0	0	0	0	0	10	1	0	11	23
Bus Enter Leg	0	0	2	0	2	1	14	0	0	15	0	0	0	0	0	1	17	2	0	20	37
Total Entering Leg	2	0	4	0	6	2	21	0	0	23	0	0	0	0	0	1	27	3	0	31	60
Trucks Exiting Leg					2					12					0					9	23
Buses Exiting Leg					3					19					1					14	37
Total Exiting Leg					5					31					1					23	60

PDI File #: **175958 B**
Location: **N: Allston Street S: Driveway**
Location: **E: Washington Street W: Washington Street**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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

Large Trucks

	Allston Street from North					Washington Street from East					Driveway from South					Washington Street 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	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	3
7:15 AM	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	3
7:30 AM	1	0	0	0	1	1	3	0	0	4	0	0	0	0	0	0	3	0	0	3	8
7:45 AM	1	0	1	0	2	0	1	0	0	1	0	0	0	0	0	0	1	1	0	2	5
Total	2	0	2	0	4	1	6	0	0	7	0	0	0	0	0	0	7	1	0	8	19
8:00 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	5	0	0	5	7
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	3
8:30 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	3
8:45 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	6
Total	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	14	0	0	14	19
Grand Total	2	0	2	0	4	1	11	0	0	12	0	0	0	0	0	0	21	1	0	22	38
Approach %	50.0	0.0	50.0	0.0		8.3	91.7	0.0	0.0		0.0	0.0	0.0	0.0		0.0	95.5	4.5	0.0		
Total %	5.3	0.0	5.3	0.0	10.5	2.6	28.9	0.0	0.0	31.6	0.0	0.0	0.0	0.0	0.0	0.0	55.3	2.6	0.0	57.9	
Exiting Leg Total					2					23					0					13	38

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

7:15 AM	Allston Street from North					Washington Street from East					Driveway from South					Washington Street 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	0	1	0	1	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	3
7:30 AM	1	0	0	0	1	1	3	0	0	4	0	0	0	0	0	0	3	0	0	3	8
7:45 AM	1	0	1	0	2	0	1	0	0	1	0	0	0	0	0	0	1	1	0	2	5
8:00 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	5	0	0	5	7
Total Volume	2	0	2	0	4	1	7	0	0	8	0	0	0	0	0	0	10	1	0	11	23
% Approach Total	50.0	0.0	50.0	0.0		12.5	87.5	0.0	0.0		0.0	0.0	0.0	0.0		0.0	90.9	9.1	0.0		
PHF	0.500	0.000	0.500	0.000	0.500	0.250	0.583	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.250	0.000	0.550	0.719
Entering Leg	2	0	2	0	4	1	7	0	0	8	0	0	0	0	0	0	10	1	0	11	23
Exiting Leg					2					12					0					9	23
Total					6					20					0					20	46

PDI File #: **175958 B**
Location: **N: Allston Street S: Driveway**
Location: **E: Washington Street W: Washington Street**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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**

	Allston Street from North					Washington Street from East					Driveway from South					Washington Street 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	0	0	0	1	7	0	0	8	0	0	0	0	0	0	4	0	0	4	12
7:15 AM	0	0	1	0	1	0	5	0	0	5	0	0	0	0	0	0	5	0	0	5	11
7:30 AM	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	0	5	0	0	5	7
7:45 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	1	6	1	0	8	10
Total	0	0	2	0	2	1	15	0	0	16	0	0	0	0	0	1	20	1	0	22	40
8:00 AM	0	0	0	0	0	1	6	0	0	7	0	0	0	0	0	0	1	1	0	2	9
8:15 AM	0	0	0	0	0	0	5	1	0	6	0	0	0	0	0	0	3	0	0	3	9
8:30 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	6
8:45 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5	6
Total	0	0	1	0	1	1	13	1	0	15	0	0	0	0	0	0	13	1	0	14	30
Grand Total	0	0	3	0	3	2	28	1	0	31	0	0	0	0	0	1	33	2	0	36	70
Approach %	0.0	0.0	100.0	0.0		6.5	90.3	3.2	0.0		0.0	0.0	0.0	0.0		2.8	91.7	5.6	0.0		
Total %	0.0	0.0	4.3	0.0	4.3	2.9	40.0	1.4	0.0	44.3	0.0	0.0	0.0	0.0	0.0	1.4	47.1	2.9	0.0	51.4	
Exiting Leg Total					4					36					2					28	70

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

7:00 AM	Allston Street from North					Washington Street from East					Driveway from South					Washington Street 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	0	0	0	1	7	0	0	8	0	0	0	0	0	0	4	0	0	4	12
7:15 AM	0	0	1	0	1	0	5	0	0	5	0	0	0	0	0	0	5	0	0	5	11
7:30 AM	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	0	5	0	0	5	7
7:45 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	1	6	1	0	8	10
Total Volume	0	0	2	0	2	1	15	0	0	16	0	0	0	0	0	1	20	1	0	22	40
% Approach Total	0.0	0.0	100.0	0.0		6.3	93.8	0.0	0.0		0.0	0.0	0.0	0.0		4.5	90.9	4.5	0.0		
PHF	0.000	0.000	0.500	0.000	0.500	0.250	0.536	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.250	0.833	0.250	0.000	0.688	0.833
Entering Leg	0	0	2	0	2	1	15	0	0	16	0	0	0	0	0	1	20	1	0	22	40
Exiting Leg					2					22					1					15	40
Total					4					38					1					37	80

PDI File #: **175958 B**
Location: **N: Allston Street S: Driveway**
Location: **E: Washington Street W: Washington Street**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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)

	Allston Street from North							Washington Street from East							Driveway from South							Washington Street 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	1	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	3
7:15 AM	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
7:30 AM	1	0	1	0	1	0	3	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	3	0	0	0	0	3	9
7:45 AM	0	0	0	0	1	0	1	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Total	3	0	1	0	2	0	6	0	7	0	0	0	0	7	0	0	0	0	0	0	0	0	6	0	0	0	0	6	19
8:00 AM	0	0	0	0	0	0	0	0	3	0	0	0	0	3	0	0	0	0	0	1	1	0	2	0	0	0	0	2	6
8:15 AM	0	0	0	0	0	1	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	4	0	0	0	0	4	6
8:30 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
8:45 AM	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	2	0	0	0	0	2	4
Total	0	0	0	0	0	1	1	1	6	0	0	0	0	7	0	0	0	0	0	1	1	0	8	0	0	0	0	8	17
Grand Total	3	0	1	0	2	1	7	1	13	0	0	0	0	14	0	0	0	0	0	1	1	0	14	0	0	0	0	14	36
Approach %	42.9	0.0	14.3	0.0	28.6	14.3		7.1	92.9	0.0	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		
Total %	8.3	0.0	2.8	0.0	5.6	2.8	19.4	2.8	36.1	0.0	0.0	0.0	0.0	38.9	0.0	0.0	0.0	0.0	0.0	2.8	2.8	0.0	38.9	0.0	0.0	0.0	0.0	38.9	
Exiting Leg Total							4							15							1							16	36

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

7:30 AM	Allston Street from North							Washington Street from East							Driveway from South							Washington Street 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
7:30 AM	1	0	1	0	1	0	3	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	3	0	0	0	0	3	9
7:45 AM	0	0	0	0	1	0	1	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
8:00 AM	0	0	0	0	0	0	0	0	3	0	0	0	0	3	0	0	0	0	0	1	1	0	2	0	0	0	0	2	6
8:15 AM	0	0	0	0	0	1	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	4	0	0	0	0	4	6
Total Volume	1	0	1	0	2	1	5	1	9	0	0	0	0	10	0	0	0	0	0	1	1	0	9	0	0	0	0	9	25
% Approach Total	20.0	0.0	20.0	0.0	40.0	20.0		10.0	90.0	0.0	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		
PHF	0.250	0.000	0.250	0.000	0.500	0.250	0.417	0.250	0.750	0.000	0.000	0.000	0.000	0.833	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.000	0.563	0.000	0.000	0.000	0.000	0.563	0.694
Entering Leg	1	0	1	0	2	1	5	1	9	0	0	0	0	10	0	0	0	0	0	1	1	0	9	0	0	0	0	9	25
Exiting Leg							4							10							1							10	25
Total							9							20							2							19	50

PDI File #: **175958 B**
Location: **N: Allston Street S: Driveway**
Location: **E: Washington Street W: Washington Street**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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

	Allston Street from North							Washington Street from East							Driveway from South							Washington Street 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	2	4	6	0	0	0	0	5	3	8	0	0	0	0	4	16	20	0	0	0	0	0	0	0	34
7:15 AM	0	0	0	0	11	9	20	0	0	0	0	3	1	4	0	0	0	0	4	11	15	0	0	0	0	0	0	0	39
7:30 AM	0	0	0	0	18	11	29	0	0	0	0	7	3	10	0	0	0	0	6	16	22	0	0	0	0	0	0	0	61
7:45 AM	0	0	0	0	12	10	22	0	0	0	0	11	5	16	0	0	0	0	12	14	26	0	0	0	0	0	0	0	64
Total	0	0	0	0	43	34	77	0	0	0	0	26	12	38	0	0	0	0	26	57	83	0	0	0	0	0	0	0	198
8:00 AM	0	0	0	0	10	5	15	0	0	0	0	2	2	4	0	0	0	0	1	8	9	0	0	0	0	0	0	0	28
8:15 AM	0	0	0	0	6	11	17	0	0	0	0	7	3	10	0	0	0	0	6	13	19	0	0	0	0	0	0	0	46
8:30 AM	0	0	0	0	5	9	14	0	0	0	0	2	5	7	0	0	0	0	7	4	11	0	0	0	0	0	0	0	32
8:45 AM	0	0	0	0	3	6	9	0	0	0	0	2	4	6	0	0	0	0	3	9	12	0	0	0	0	0	0	0	27
Total	0	0	0	0	24	31	55	0	0	0	0	13	14	27	0	0	0	0	17	34	51	0	0	0	0	0	0	0	133
Grand Total	0	0	0	0	67	65	132	0	0	0	0	39	26	65	0	0	0	0	43	91	134	0	0	0	0	0	0	0	331
Approach %	0.0	0.0	0.0	0.0	50.8	49.2		0.0	0.0	0.0	0.0	60.0	40.0		0.0	0.0	0.0	0.0	32.1	67.9		0.0	0.0	0.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	20.2	19.6	39.9	0.0	0.0	0.0	0.0	11.8	7.9	19.6	0.0	0.0	0.0	0.0	13.0	27.5	40.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total							132							65							134							0	331

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

7:30 AM	Allston Street from North							Washington Street from East							Driveway from South							Washington Street 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
7:30 AM	0	0	0	0	18	11	29	0	0	0	0	7	3	10	0	0	0	0	6	16	22	0	0	0	0	0	0	0	61
7:45 AM	0	0	0	0	12	10	22	0	0	0	0	11	5	16	0	0	0	0	12	14	26	0	0	0	0	0	0	0	64
8:00 AM	0	0	0	0	10	5	15	0	0	0	0	2	2	4	0	0	0	0	1	8	9	0	0	0	0	0	0	0	28
8:15 AM	0	0	0	0	6	11	17	0	0	0	0	7	3	10	0	0	0	0	6	13	19	0	0	0	0	0	0	0	46
Total Volume	0	0	0	0	46	37	83	0	0	0	0	27	13	40	0	0	0	0	25	51	76	0	0	0	0	0	0	0	199
% Approach Total	0.0	0.0	0.0	0.0	55.4	44.6		0.0	0.0	0.0	0.0	67.5	32.5		0.0	0.0	0.0	0.0	32.9	67.1		0.0	0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.639	0.841	0.716	0.000	0.000	0.000	0.000	0.614	0.650	0.625	0.000	0.000	0.000	0.000	0.521	0.797	0.731	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.777
Entering Leg	0	0	0	0	46	37	83	0	0	0	0	27	13	40	0	0	0	0	25	51	76	0	0	0	0	0	0	0	199
Exiting Leg							83							40							76							0	199
Total							166							80							152							0	398

PDI File #: **175958 BB**
Location: **N: Allston Street S: Driveway**
Location: **E: Washington Street W: Washington Street**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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 and Heavy Vehicles (Combined)

	Allston Street from North					Washington Street from East					Driveway from South					Washington Street 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	5	0	17	0	22	12	91	0	0	103	0	0	0	0	0	1	152	1	0	154	279
4:15 PM	3	0	28	0	31	10	95	0	0	105	0	0	0	0	0	0	138	6	0	144	280
4:30 PM	4	0	25	0	29	6	99	0	0	105	0	0	0	0	0	3	128	2	0	133	267
4:45 PM	3	0	24	0	27	18	95	0	0	113	0	0	0	0	0	0	149	3	0	152	292
Total	15	0	94	0	109	46	380	0	0	426	0	0	0	0	0	4	567	12	0	583	1118
5:00 PM	1	0	32	0	33	10	90	0	0	100	0	0	0	0	0	0	158	5	0	163	296
5:15 PM	2	0	40	0	42	11	86	0	0	97	0	0	0	0	0	1	140	4	1	146	285
5:30 PM	3	0	17	0	20	6	92	0	0	98	0	0	0	0	0	0	129	4	0	133	251
5:45 PM	0	0	18	0	18	9	96	0	0	105	0	0	0	0	0	1	137	8	0	146	269
Total	6	0	107	0	113	36	364	0	0	400	0	0	0	0	0	2	564	21	1	588	1101
Grand Total	21	0	201	0	222	82	744	0	0	826	0	0	0	0	0	6	1131	33	1	1171	2219
Approach %	9.5	0.0	90.5	0.0		9.9	90.1	0.0	0.0		0.0	0.0	0.0	0.0		0.5	96.6	2.8	0.1		
Total %	0.9	0.0	9.1	0.0	10.0	3.7	33.5	0.0	0.0	37.2	0.0	0.0	0.0	0.0	0.0	0.3	51.0	1.5	0.0	52.8	
Exiting Leg Total					115					1332					6					766	2219
Cars	20	0	201	0	221	81	712	0	0	793	0	0	0	0	0	5	1104	31	1	1141	2155
% Cars	95.2	0.0	100.0	0.0	99.5	98.8	95.7	0.0	0.0	96.0	0.0	0.0	0.0	0.0	0.0	83.3	97.6	93.9	100.0	97.4	97.1
Exiting Leg Total					112					1305					5					733	2155
Heavy Vehicles	1	0	0	0	1	1	32	0	0	33	0	0	0	0	0	1	27	2	0	30	64
% Heavy Vehicles	4.8	0.0	0.0	0.0	0.5	1.2	4.3	0.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0	16.7	2.4	6.1	0.0	2.6	2.9
Exiting Leg Total					3					27					1					33	64

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

4:30 PM	Allston Street from North					Washington Street from East					Driveway from South					Washington Street 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	4	0	25	0	29	6	99	0	0	105	0	0	0	0	0	3	128	2	0	133	267
4:45 PM	3	0	24	0	27	18	95	0	0	113	0	0	0	0	0	0	149	3	0	152	292
5:00 PM	1	0	32	0	33	10	90	0	0	100	0	0	0	0	0	0	158	5	0	163	296
5:15 PM	2	0	40	0	42	11	86	0	0	97	0	0	0	0	0	1	140	4	1	146	285
Total Volume	10	0	121	0	131	45	370	0	0	415	0	0	0	0	0	4	575	14	1	594	1140
% Approach Total	7.6	0.0	92.4	0.0		10.8	89.2	0.0	0.0		0.0	0.0	0.0	0.0		0.7	96.8	2.4	0.2		
PHF	0.625	0.000	0.756	0.000	0.780	0.625	0.934	0.000	0.000	0.918	0.000	0.000	0.000	0.000	0.000	0.333	0.910	0.700	0.250	0.911	0.963
Cars	10	0	121	0	131	44	354	0	0	398	0	0	0	0	0	3	566	13	1	583	1112
Cars %	100.0	0.0	100.0	0.0	100.0	97.8	95.7	0.0	0.0	95.9	0.0	0.0	0.0	0.0	0.0	75.0	98.4	92.9	100.0	98.1	97.5
Heavy Vehicles	0	0	0	0	0	1	16	0	0	17	0	0	0	0	0	1	9	1	0	11	28
Heavy Vehicles %	0.0	0.0	0.0	0.0	0.0	2.2	4.3	0.0	0.0	4.1	0.0	0.0	0.0	0.0	0.0	25.0	1.6	7.1	0.0	1.9	2.5
Cars Enter Leg	10	0	121	0	131	44	354	0	0	398	0	0	0	0	0	3	566	13	1	583	1112
Heavy Enter Leg	0	0	0	0	0	1	16	0	0	17	0	0	0	0	0	1	9	1	0	11	28
Total Entering Leg	10	0	121	0	131	45	370	0	0	415	0	0	0	0	0	4	575	14	1	594	1140
Cars Exiting Leg					57					687					3					365	1112
Heavy Exiting Leg					2					9					1					16	28
Total Exiting Leg					59					696					4					381	1140

PDI File #: **175958 BB**
Location: **N: Allston Street S: Driveway**
Location: **E: Washington Street W: Washington Street**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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

	Allston Street from North					Washington Street from East					Driveway from South					Washington Street 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	0	17	0	21	12	87	0	0	99	0	0	0	0	0	1	146	1	0	148	268
4:15 PM	3	0	28	0	31	10	93	0	0	103	0	0	0	0	0	0	132	6	0	138	272
4:30 PM	4	0	25	0	29	6	98	0	0	104	0	0	0	0	0	2	127	1	0	130	263
4:45 PM	3	0	24	0	27	18	90	0	0	108	0	0	0	0	0	0	148	3	0	151	286
Total	14	0	94	0	108	46	368	0	0	414	0	0	0	0	0	3	553	11	0	567	1089
5:00 PM	1	0	32	0	33	9	86	0	0	95	0	0	0	0	0	0	155	5	0	160	288
5:15 PM	2	0	40	0	42	11	80	0	0	91	0	0	0	0	0	1	136	4	1	142	275
5:30 PM	3	0	17	0	20	6	86	0	0	92	0	0	0	0	0	0	127	3	0	130	242
5:45 PM	0	0	18	0	18	9	92	0	0	101	0	0	0	0	0	1	133	8	0	142	261
Total	6	0	107	0	113	35	344	0	0	379	0	0	0	0	0	2	551	20	1	574	1066
Grand Total	20	0	201	0	221	81	712	0	0	793	0	0	0	0	0	5	1104	31	1	1141	2155
Approach %	9.0	0.0	91.0	0.0		10.2	89.8	0.0	0.0		0.0	0.0	0.0	0.0		0.4	96.8	2.7	0.1		
Total %	0.9	0.0	9.3	0.0	10.3	3.8	33.0	0.0	0.0	36.8	0.0	0.0	0.0	0.0	0.0	0.2	51.2	1.4	0.0	52.9	
Exiting Leg Total					112					1305					5					733	2155

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

4:30 PM	Allston Street from North					Washington Street from East					Driveway from South					Washington Street 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	4	0	25	0	29	6	98	0	0	104	0	0	0	0	0	2	127	1	0	130	263
4:45 PM	3	0	24	0	27	18	90	0	0	108	0	0	0	0	0	0	148	3	0	151	286
5:00 PM	1	0	32	0	33	9	86	0	0	95	0	0	0	0	0	0	155	5	0	160	288
5:15 PM	2	0	40	0	42	11	80	0	0	91	0	0	0	0	0	1	136	4	1	142	275
Total Volume	10	0	121	0	131	44	354	0	0	398	0	0	0	0	0	3	566	13	1	583	1112
% Approach Total	7.6	0.0	92.4	0.0		11.1	88.9	0.0	0.0		0.0	0.0	0.0	0.0		0.5	97.1	2.2	0.2		
PHF	0.625	0.000	0.756	0.000	0.780	0.611	0.903	0.000	0.000	0.921	0.000	0.000	0.000	0.000	0.000	0.375	0.913	0.650	0.250	0.911	0.965
Entering Leg	10	0	121	0	131	44	354	0	0	398	0	0	0	0	0	3	566	13	1	583	1112
Exiting Leg					57					687					3					365	1112
Total					188					1085					3					948	2224

PDI File #: **175958 BB**
Location: **N: Allston Street S: Driveway**
Location: **E: Washington Street W: Washington Street**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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 (Combined-Large Trucks and Buses)

	Allston Street from North					Washington Street from East					Driveway from South					Washington Street 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	0	0	0	1	0	4	0	0	4	0	0	0	0	0	0	6	0	0	6	11
4:15 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	6	0	0	6	8
4:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	1	1	0	3	4
4:45 PM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	1	0	0	1	6
Total	1	0	0	0	1	0	12	0	0	12	0	0	0	0	0	1	14	1	0	16	29
5:00 PM	0	0	0	0	0	1	4	0	0	5	0	0	0	0	0	0	3	0	0	3	8
5:15 PM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	4	0	0	4	10
5:30 PM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	2	1	0	3	9
5:45 PM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	4	0	0	4	8
Total	0	0	0	0	0	1	20	0	0	21	0	0	0	0	0	0	13	1	0	14	35
Grand Total	1	0	0	0	1	1	32	0	0	33	0	0	0	0	0	1	27	2	0	30	64
Approach %	100.0	0.0	0.0	0.0		3.0	97.0	0.0	0.0		0.0	0.0	0.0	0.0		3.3	90.0	6.7	0.0		
Total %	1.6	0.0	0.0	0.0	1.6	1.6	50.0	0.0	0.0	51.6	0.0	0.0	0.0	0.0	0.0	1.6	42.2	3.1	0.0	46.9	
Exiting Leg Total					3					27					1					33	64
Large Trucks	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	1	9	0	0	10	20
% Large Trucks	0.0	0.0	0.0	0.0	0.0	0.0	31.3	0.0	0.0	30.3	0.0	0.0	0.0	0.0	0.0	100.0	33.3	0.0	0.0	33.3	31.3
Exiting Leg Total					0					9					1					10	20
Buses	1	0	0	0	1	1	22	0	0	23	0	0	0	0	0	0	18	2	0	20	44
% Buses	100.0	0.0	0.0	0.0	100.0	100.0	68.8	0.0	0.0	69.7	0.0	0.0	0.0	0.0	0.0	0.0	66.7	100.0	0.0	66.7	68.8
Exiting Leg Total					3					18					0					23	44

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

5:00 PM	Allston Street from North					Washington Street from East					Driveway from South					Washington Street 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	0	0	0	0	0	1	4	0	0	5	0	0	0	0	0	0	3	0	0	3	8
5:15 PM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	4	0	0	4	10
5:30 PM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	2	1	0	3	9
5:45 PM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	4	0	0	4	8
Total Volume	0	0	0	0	0	1	20	0	0	21	0	0	0	0	0	0	13	1	0	14	35
% Approach Total	0.0	0.0	0.0	0.0		4.8	95.2	0.0	0.0		0.0	0.0	0.0	0.0		0.0	92.9	7.1	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.250	0.833	0.000	0.000	0.875	0.000	0.000	0.000	0.000	0.000	0.000	0.813	0.250	0.000	0.875	0.875
Large Trucks	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	4	0	0	4	11
Large Trucks %	0.0	0.0	0.0	0.0	0.0	0.0	35.0	0.0	0.0	33.3	0.0	0.0	0.0	0.0	0.0	0.0	30.8	0.0	0.0	28.6	31.4
Buses	0	0	0	0	0	1	13	0	0	14	0	0	0	0	0	0	9	1	0	10	24
Buses %	0.0	0.0	0.0	0.0	0.0	100.0	65.0	0.0	0.0	66.7	0.0	0.0	0.0	0.0	0.0	0.0	69.2	100.0	0.0	71.4	68.6
Trucks Enter Leg	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	4	0	0	4	11
Bus Enter Leg	0	0	0	0	0	1	13	0	0	14	0	0	0	0	0	0	9	1	0	10	24
Total Entering Leg	0	0	0	0	0	1	20	0	0	21	0	0	0	0	0	0	13	1	0	14	35
Trucks Exiting Leg					0					4					0					7	11
Buses Exiting Leg					2					9					0					13	24
Total Exiting Leg					2					13					0					20	35

PDI File #: **175958 BB**
Location: **N: Allston Street S: Driveway**
Location: **E: Washington Street W: Washington Street**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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

Large Trucks

	Allston Street from North					Washington Street from East					Driveway from South					Washington Street 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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	3
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
4:45 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	3
Total	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	1	5	0	0	6	9
5:00 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
5:15 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
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	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4
Total	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	4	0	0	4	11
Grand Total	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	1	9	0	0	10	20
Approach %	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		10.0	90.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	5.0	45.0	0.0	0.0	50.0	
Exiting Leg Total					0					9					1					10	20

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

5:00 PM	Allston Street from North					Washington Street from East					Driveway from South					Washington Street 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	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
5:15 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
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	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4
Total Volume	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	4	0	0	4	11
% 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	100.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.875	0.000	0.000	0.875	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.500	0.688
Entering Leg	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	4	0	0	4	11
Exiting Leg					0					4					0					7	11
Total					0					11					0					11	22

PDI File #: **175958 BB**
Location: **N: Allston Street S: Driveway**
Location: **E: Washington Street W: Washington Street**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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**

	Allston Street from North					Washington Street from East					Driveway from South					Washington Street 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	0	0	0	1	0	4	0	0	4	0	0	0	0	0	0	3	0	0	3	8
4:15 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	6
4:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	1	0	2	3
4:45 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
Total	1	0	0	0	1	0	9	0	0	9	0	0	0	0	0	0	9	1	0	10	20
5:00 PM	0	0	0	0	0	1	2	0	0	3	0	0	0	0	0	0	2	0	0	2	5
5:15 PM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	3	0	0	3	7
5:30 PM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	2	1	0	3	8
5:45 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4
Total	0	0	0	0	0	1	13	0	0	14	0	0	0	0	0	0	9	1	0	10	24
Grand Total	1	0	0	0	1	1	22	0	0	23	0	0	0	0	0	0	18	2	0	20	44
Approach %	100.0	0.0	0.0	0.0		4.3	95.7	0.0	0.0		0.0	0.0	0.0	0.0		0.0	90.0	10.0	0.0		
Total %	2.3	0.0	0.0	0.0	2.3	2.3	50.0	0.0	0.0	52.3	0.0	0.0	0.0	0.0	0.0	0.0	40.9	4.5	0.0	45.5	
Exiting Leg Total					3					18					0					23	44

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

5:00 PM	Allston Street from North					Washington Street from East					Driveway from South					Washington Street 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	0	0	0	0	0	1	2	0	0	3	0	0	0	0	0	0	2	0	0	2	5
5:15 PM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	3	0	0	3	7
5:30 PM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	2	1	0	3	8
5:45 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4
Total Volume	0	0	0	0	0	1	13	0	0	14	0	0	0	0	0	0	9	1	0	10	24
% Approach Total	0.0	0.0	0.0	0.0		7.1	92.9	0.0	0.0		0.0	0.0	0.0	0.0		0.0	90.0	10.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.250	0.650	0.000	0.000	0.700	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.250	0.000	0.833	0.750
Entering Leg	0	0	0	0	0	1	13	0	0	14	0	0	0	0	0	0	9	1	0	10	24
Exiting Leg					2					9					0					13	24
Total					2					23					0					23	48

PDI File #: **175958 BB**
Location: **N: Allston Street S: Driveway**
Location: **E: Washington Street W: Washington Street**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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)**

	Allston Street from North							Washington Street from East							Driveway from South							Washington Street 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	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3
4:15 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	2
4:30 PM	0	0	0	0	0	0	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	2	0	0	0	0	2	5
4:45 PM	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	0	0	0	0	0	0	0	0	6	0	0	0	0	6	0	0	0	0	0	0	0	0	6	0	0	0	0	6	12
5:00 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
5:15 PM	0	0	0	0	2	1	3	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
5:30 PM	0	0	0	0	0	0	0	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
5:45 PM	0	0	0	0	0	0	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	1	0	0	0	0	1	4
Total	0	0	0	0	2	1	3	0	10	0	0	0	0	10	0	0	0	0	0	0	0	0	1	0	0	0	0	1	14
Grand Total	0	0	0	0	2	1	3	0	16	0	0	0	0	16	0	0	0	0	0	0	0	0	7	0	0	0	0	7	26
Approach %	0.0	0.0	0.0	0.0	66.7	33.3		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	0.0		
Total %	0.0	0.0	0.0	0.0	7.7	3.8	11.5	0.0	61.5	0.0	0.0	0.0	0.0	61.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	26.9	0.0	0.0	0.0	0.0	26.9	
Exiting Leg Total							3							7							0							16	26

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

5:00 PM	Allston Street from North							Washington Street from East							Driveway from South							Washington Street 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	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	2	1	3	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
5:30 PM	0	0	0	0	0	0	0	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
5:45 PM	0	0	0	0	0	0	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	1	0	0	0	0	1	4
Total Volume	0	0	0	0	2	1	3	0	10	0	0	0	0	10	0	0	0	0	0	0	0	0	1	0	0	0	0	1	14
% Approach Total	0.0	0.0	0.0	0.0	66.7	33.3		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	0.0		
PHF	0.000	0.000	0.000	0.000	0.250	0.250	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	0.000	0.250	0.000	0.000	0.000	0.000	0.250	0.700
Entering Leg	0	0	0	0	2	1	3	0	10	0	0	0	0	10	0	0	0	0	0	0	0	0	1	0	0	0	0	1	14
Exiting Leg							3							1							0							10	14
Total							6							11							0							11	28

PDI File #: **175958 BB**
Location: **N: Allston Street S: Driveway**
Location: **E: Washington Street W: Washington Street**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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

	Allston Street from North							Washington Street from East							Driveway from South							Washington Street 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	8	10	18	0	0	0	0	4	4	8	0	0	0	0	5	6	11	0	0	0	0	0	1	1	38
4:15 PM	0	0	0	0	12	12	24	0	0	0	0	0	4	4	0	0	0	0	4	5	9	0	0	0	0	0	0	0	37
4:30 PM	0	0	0	0	9	14	23	0	0	0	0	3	5	8	0	0	0	0	4	8	12	0	0	0	0	0	0	0	43
4:45 PM	0	0	0	0	13	11	24	0	0	0	0	3	6	9	0	0	0	0	8	3	11	0	0	0	0	0	0	0	44
Total	0	0	0	0	42	47	89	0	0	0	0	10	19	29	0	0	0	0	21	22	43	0	0	0	0	0	1	1	162
5:00 PM	0	0	0	0	16	15	31	0	0	0	0	6	5	11	0	0	0	0	3	6	9	0	0	0	0	0	1	1	52
5:15 PM	0	0	0	0	20	19	39	0	0	0	0	7	7	14	0	0	0	0	4	6	10	0	0	0	0	0	0	0	63
5:30 PM	0	0	0	0	13	14	27	0	0	0	0	5	8	13	0	0	0	0	2	2	4	0	0	0	0	0	0	0	44
5:45 PM	0	0	0	0	30	10	40	0	0	0	0	9	4	13	0	0	0	0	3	6	9	0	0	0	0	2	0	2	64
Total	0	0	0	0	79	58	137	0	0	0	0	27	24	51	0	0	0	0	12	20	32	0	0	0	0	2	1	3	223
Grand Total	0	0	0	0	121	105	226	0	0	0	0	37	43	80	0	0	0	0	33	42	75	0	0	0	0	2	2	4	385
Approach %	0.0	0.0	0.0	0.0	53.5	46.5		0.0	0.0	0.0	0.0	46.3	53.8		0.0	0.0	0.0	0.0	44.0	56.0		0.0	0.0	0.0	0.0	50.0	50.0		
Total %	0.0	0.0	0.0	0.0	31.4	27.3	58.7	0.0	0.0	0.0	0.0	9.6	11.2	20.8	0.0	0.0	0.0	0.0	8.6	10.9	19.5	0.0	0.0	0.0	0.0	0.5	0.5	1.0	
Exiting Leg Total							226							80							75							4	385

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

5:00 PM	Allston Street from North							Washington Street from East							Driveway from South							Washington Street 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	16	15	31	0	0	0	0	6	5	11	0	0	0	0	3	6	9	0	0	0	0	0	1	1	52
5:15 PM	0	0	0	0	20	19	39	0	0	0	0	7	7	14	0	0	0	0	4	6	10	0	0	0	0	0	0	0	63
5:30 PM	0	0	0	0	13	14	27	0	0	0	0	5	8	13	0	0	0	0	2	2	4	0	0	0	0	0	0	0	44
5:45 PM	0	0	0	0	30	10	40	0	0	0	0	9	4	13	0	0	0	0	3	6	9	0	0	0	0	2	0	2	64
Total Volume	0	0	0	0	79	58	137	0	0	0	0	27	24	51	0	0	0	0	12	20	32	0	0	0	0	2	1	3	223
% Approach Total	0.0	0.0	0.0	0.0	57.7	42.3		0.0	0.0	0.0	0.0	52.9	47.1		0.0	0.0	0.0	0.0	37.5	62.5		0.0	0.0	0.0	0.0	66.7	33.3		
PHF	0.000	0.000	0.000	0.000	0.658	0.763	0.856	0.000	0.000	0.000	0.000	0.750	0.750	0.911	0.000	0.000	0.000	0.000	0.750	0.833	0.800	0.000	0.000	0.000	0.000	0.250	0.250	0.375	0.871
Entering Leg	0	0	0	0	79	58	137	0	0	0	0	27	24	51	0	0	0	0	12	20	32	0	0	0	0	2	1	3	223
Exiting Leg							137							51							32							3	223
Total							274							102							64							6	446

PDI File #: **175958 C**
Location: **N: Corey Road S: Corey Road**
Location: **E: Washington Street W: Washington Street**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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 and Heavy Vehicles (Combined)

	Corey Road from North					Washington Street from East					Corey Road from South					Washington Street 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	32	7	0	42	11	68	5	0	84	4	45	15	0	64	19	103	7	0	129	319
7:15 AM	5	34	7	0	46	17	71	3	0	91	6	38	29	0	73	26	137	11	0	174	384
7:30 AM	5	52	5	0	62	25	72	1	0	98	7	35	22	0	64	23	115	10	0	148	372
7:45 AM	6	51	12	0	69	28	76	2	0	106	6	50	21	0	77	15	104	7	0	126	378
Total	19	169	31	0	219	81	287	11	0	379	23	168	87	0	278	83	459	35	0	577	1453
8:00 AM	5	41	9	0	55	60	85	3	0	148	1	42	22	0	65	24	103	11	0	138	406
8:15 AM	3	31	14	0	48	36	106	3	0	145	5	56	19	0	80	20	78	15	0	113	386
8:30 AM	1	33	8	0	42	36	83	0	0	119	3	46	17	0	66	22	109	11	0	142	369
8:45 AM	7	22	6	0	35	48	75	4	0	127	5	55	16	0	76	22	117	11	0	150	388
Total	16	127	37	0	180	180	349	10	0	539	14	199	74	0	287	88	407	48	0	543	1549
Grand Total	35	296	68	0	399	261	636	21	0	918	37	367	161	0	565	171	866	83	0	1120	3002
Approach %	8.8	74.2	17.0	0.0		28.4	69.3	2.3	0.0		6.5	65.0	28.5	0.0		15.3	77.3	7.4	0.0		
Total %	1.2	9.9	2.3	0.0	13.3	8.7	21.2	0.7	0.0	30.6	1.2	12.2	5.4	0.0	18.8	5.7	28.8	2.8	0.0	37.3	
Exiting Leg Total					711					971					488					832	3002
Cars	34	292	66	0	392	259	598	20	0	877	36	363	155	0	554	168	818	79	0	1065	2888
% Cars	97.1	98.6	97.1	0.0	98.2	99.2	94.0	95.2	0.0	95.5	97.3	98.9	96.3	0.0	98.1	98.2	94.5	95.2	0.0	95.1	96.2
Exiting Leg Total					701					920					480					787	2888
Heavy Vehicles	1	4	2	0	7	2	38	1	0	41	1	4	6	0	11	3	48	4	0	55	114
% Heavy Vehicles	2.9	1.4	2.9	0.0	1.8	0.8	6.0	4.8	0.0	4.5	2.7	1.1	3.7	0.0	1.9	1.8	5.5	4.8	0.0	4.9	3.8
Exiting Leg Total					10					51					8					45	114

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

8:00 AM	Corey Road from North					Washington Street from East					Corey Road from South					Washington Street 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	5	41	9	0	55	60	85	3	0	148	1	42	22	0	65	24	103	11	0	138	406
8:15 AM	3	31	14	0	48	36	106	3	0	145	5	56	19	0	80	20	78	15	0	113	386
8:30 AM	1	33	8	0	42	36	83	0	0	119	3	46	17	0	66	22	109	11	0	142	369
8:45 AM	7	22	6	0	35	48	75	4	0	127	5	55	16	0	76	22	117	11	0	150	388
Total Volume	16	127	37	0	180	180	349	10	0	539	14	199	74	0	287	88	407	48	0	543	1549
% Approach Total	8.9	70.6	20.6	0.0		33.4	64.7	1.9	0.0		4.9	69.3	25.8	0.0		16.2	75.0	8.8	0.0		
PHF	0.571	0.774	0.661	0.000	0.818	0.750	0.823	0.625	0.000	0.910	0.700	0.888	0.841	0.000	0.897	0.917	0.870	0.800	0.000	0.905	0.954
Cars	16	127	37	0	180	178	332	9	0	519	13	195	72	0	280	88	385	46	0	519	1498
Cars %	100.0	100.0	100.0	0.0	100.0	98.9	95.1	90.0	0.0	96.3	92.9	98.0	97.3	0.0	97.6	100.0	94.6	95.8	0.0	95.6	96.7
Heavy Vehicles	0	0	0	0	0	2	17	1	0	20	1	4	2	0	7	0	22	2	0	24	51
Heavy Vehicles %	0.0	0.0	0.0	0.0	0.0	1.1	4.9	10.0	0.0	3.7	7.1	2.0	2.7	0.0	2.4	0.0	5.4	4.2	0.0	4.4	3.3
Cars Enter Leg	16	127	37	0	180	178	332	9	0	519	13	195	72	0	280	88	385	46	0	519	1498
Heavy Enter Leg	0	0	0	0	0	2	17	1	0	20	1	4	2	0	7	0	22	2	0	24	51
Total Entering Leg	16	127	37	0	180	180	349	10	0	539	14	199	74	0	287	88	407	48	0	543	1549
Cars Exiting Leg					419					435					224					420	1498
Heavy Exiting Leg					8					23					1					19	51
Total Exiting Leg					427					458					225					439	1549

PDI File #: **175958 C**
Location: **N: Corey Road S: Corey Road**
Location: **E: Washington Street W: Washington Street**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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

	Corey Road from North					Washington Street from East					Corey Road from South					Washington Street 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	31	5	0	38	11	59	5	0	75	4	45	14	0	63	18	98	6	0	122	298
7:15 AM	5	34	7	0	46	17	67	3	0	87	6	38	26	0	70	26	131	11	0	168	371
7:30 AM	5	50	5	0	60	25	68	1	0	94	7	35	22	0	64	22	107	9	0	138	356
7:45 AM	6	50	12	0	68	28	72	2	0	102	6	50	21	0	77	14	97	7	0	118	365
Total	18	165	29	0	212	81	266	11	0	358	23	168	83	0	274	80	433	33	0	546	1390
8:00 AM	5	41	9	0	55	60	76	3	0	139	1	41	22	0	64	24	99	10	0	133	391
8:15 AM	3	31	14	0	48	36	102	3	0	141	4	55	18	0	77	20	74	14	0	108	374
8:30 AM	1	33	8	0	42	35	80	0	0	115	3	44	17	0	64	22	102	11	0	135	356
8:45 AM	7	22	6	0	35	47	74	3	0	124	5	55	15	0	75	22	110	11	0	143	377
Total	16	127	37	0	180	178	332	9	0	519	13	195	72	0	280	88	385	46	0	519	1498
Grand Total	34	292	66	0	392	259	598	20	0	877	36	363	155	0	554	168	818	79	0	1065	2888
Approach %	8.7	74.5	16.8	0.0		29.5	68.2	2.3	0.0		6.5	65.5	28.0	0.0		15.8	76.8	7.4	0.0		
Total %	1.2	10.1	2.3	0.0	13.6	9.0	20.7	0.7	0.0	30.4	1.2	12.6	5.4	0.0	19.2	5.8	28.3	2.7	0.0	36.9	
Exiting Leg Total					701					920					480					787	2888

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

8:00 AM	Corey Road from North					Washington Street from East					Corey Road from South					Washington Street 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	5	41	9	0	55	60	76	3	0	139	1	41	22	0	64	24	99	10	0	133	391
8:15 AM	3	31	14	0	48	36	102	3	0	141	4	55	18	0	77	20	74	14	0	108	374
8:30 AM	1	33	8	0	42	35	80	0	0	115	3	44	17	0	64	22	102	11	0	135	356
8:45 AM	7	22	6	0	35	47	74	3	0	124	5	55	15	0	75	22	110	11	0	143	377
Total Volume	16	127	37	0	180	178	332	9	0	519	13	195	72	0	280	88	385	46	0	519	1498
% Approach Total	8.9	70.6	20.6	0.0		34.3	64.0	1.7	0.0		4.6	69.6	25.7	0.0		17.0	74.2	8.9	0.0		
PHF	0.571	0.774	0.661	0.000	0.818	0.742	0.814	0.750	0.000	0.920	0.650	0.886	0.818	0.000	0.909	0.917	0.875	0.821	0.000	0.907	0.958
Entering Leg	16	127	37	0	180	178	332	9	0	519	13	195	72	0	280	88	385	46	0	519	1498
Exiting Leg					419					435					224					420	1498
Total					599					954					504					939	2996

PDI File #: **175958 C**
Location: **N: Corey Road S: Corey Road**
Location: **E: Washington Street W: Washington Street**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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 (Combined-Large Trucks and Buses)

	Corey Road from North					Washington Street from East					Corey Road from South					Washington Street 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	1	2	0	4	0	9	0	0	9	0	0	1	0	1	1	5	1	0	7	21
7:15 AM	0	0	0	0	0	0	4	0	0	4	0	0	3	0	3	0	6	0	0	6	13
7:30 AM	0	2	0	0	2	0	4	0	0	4	0	0	0	0	0	1	8	1	0	10	16
7:45 AM	0	1	0	0	1	0	4	0	0	4	0	0	0	0	0	1	7	0	0	8	13
Total	1	4	2	0	7	0	21	0	0	21	0	0	4	0	4	3	26	2	0	31	63
8:00 AM	0	0	0	0	0	0	9	0	0	9	0	1	0	0	1	0	4	1	0	5	15
8:15 AM	0	0	0	0	0	0	4	0	0	4	1	1	1	0	3	0	4	1	0	5	12
8:30 AM	0	0	0	0	0	1	3	0	0	4	0	2	0	0	2	0	7	0	0	7	13
8:45 AM	0	0	0	0	0	1	1	1	0	3	0	0	1	0	1	0	7	0	0	7	11
Total	0	0	0	0	0	2	17	1	0	20	1	4	2	0	7	0	22	2	0	24	51
Grand Total	1	4	2	0	7	2	38	1	0	41	1	4	6	0	11	3	48	4	0	55	114
Approach %	14.3	57.1	28.6	0.0		4.9	92.7	2.4	0.0		9.1	36.4	54.5	0.0		5.5	87.3	7.3	0.0		
Total %	0.9	3.5	1.8	0.0	6.1	1.8	33.3	0.9	0.0	36.0	0.9	3.5	5.3	0.0	9.6	2.6	42.1	3.5	0.0	48.2	
Exiting Leg Total					10					51					8					45	114
Large Trucks	1	3	1	0	5	2	13	1	0	16	1	4	1	0	6	0	16	4	0	20	47
% Large Trucks	100.0	75.0	50.0	0.0	71.4	100.0	34.2	100.0	0.0	39.0	100.0	100.0	16.7	0.0	54.5	0.0	33.3	100.0	0.0	36.4	41.2
Exiting Leg Total					10					18					4					15	47
Buses	0	1	1	0	2	0	25	0	0	25	0	0	5	0	5	3	32	0	0	35	67
% Buses	0.0	25.0	50.0	0.0	28.6	0.0	65.8	0.0	0.0	61.0	0.0	0.0	83.3	0.0	45.5	100.0	66.7	0.0	0.0	63.6	58.8
Exiting Leg Total					0					33					4					30	67

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

7:00 AM	Corey Road from North					Washington Street from East					Corey Road from South					Washington Street 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	1	2	0	4	0	9	0	0	9	0	0	1	0	1	1	5	1	0	7	21
7:15 AM	0	0	0	0	0	0	4	0	0	4	0	0	3	0	3	0	6	0	0	6	13
7:30 AM	0	2	0	0	2	0	4	0	0	4	0	0	0	0	0	1	8	1	0	10	16
7:45 AM	0	1	0	0	1	0	4	0	0	4	0	0	0	0	0	1	7	0	0	8	13
Total Volume	1	4	2	0	7	0	21	0	0	21	0	0	4	0	4	3	26	2	0	31	63
% Approach Total	14.3	57.1	28.6	0.0		0.0	100.0	0.0	0.0		0.0	0.0	100.0	0.0		9.7	83.9	6.5	0.0		
PHF	0.250	0.500	0.250	0.000	0.438	0.000	0.583	0.000	0.000	0.583	0.000	0.000	0.333	0.000	0.333	0.750	0.813	0.500	0.000	0.775	0.750
Large Trucks	1	3	1	0	5	0	9	0	0	9	0	0	0	0	0	0	8	2	0	10	24
Large Trucks %	100.0	75.0	50.0	0.0	71.4	0.0	42.9	0.0	0.0	42.9	0.0	0.0	0.0	0.0	0.0	0.0	30.8	100.0	0.0	32.3	38.1
Buses	0	1	1	0	2	0	12	0	0	12	0	0	4	0	4	3	18	0	0	21	39
Buses %	0.0	25.0	50.0	0.0	28.6	0.0	57.1	0.0	0.0	57.1	0.0	0.0	100.0	0.0	100.0	100.0	69.2	0.0	0.0	67.7	61.9
Trucks Enter Leg	1	3	1	0	5	0	9	0	0	9	0	0	0	0	0	0	8	2	0	10	24
Bus Enter Leg	0	1	1	0	2	0	12	0	0	12	0	0	4	0	4	3	18	0	0	21	39
Total Entering Leg	1	4	2	0	7	0	21	0	0	21	0	0	4	0	4	3	26	2	0	31	63
Trucks Exiting Leg					2					9					3					10	24
Buses Exiting Leg					0					19					4					16	39
Total Exiting Leg					2					28					7					26	63

PDI File #: **175958 C**
Location: **N: Corey Road S: Corey Road**
Location: **E: Washington Street W: Washington Street**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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

Large Trucks

	Corey Road from North					Washington Street from East					Corey Road from South					Washington Street 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	0	1	0	2	0	2	0	0	2	0	0	0	0	0	0	2	1	0	3	7
7:15 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
7:30 AM	0	2	0	0	2	0	3	0	0	3	0	0	0	0	0	0	3	1	0	4	9
7:45 AM	0	1	0	0	1	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	5
Total	1	3	1	0	5	0	9	0	0	9	0	0	0	0	0	0	8	2	0	10	24
8:00 AM	0	0	0	0	0	0	2	0	0	2	0	1	0	0	1	0	2	1	0	3	6
8:15 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	0	2	1	0	3	5
8:30 AM	0	0	0	0	0	1	1	0	0	2	0	2	0	0	2	0	1	0	0	1	5
8:45 AM	0	0	0	0	0	1	1	1	0	3	0	0	1	0	1	0	3	0	0	3	7
Total	0	0	0	0	0	2	4	1	0	7	1	4	1	0	6	0	8	2	0	10	23
Grand Total	1	3	1	0	5	2	13	1	0	16	1	4	1	0	6	0	16	4	0	20	47
Approach %	20.0	60.0	20.0	0.0		12.5	81.3	6.3	0.0		16.7	66.7	16.7	0.0		0.0	80.0	20.0	0.0		
Total %	2.1	6.4	2.1	0.0	10.6	4.3	27.7	2.1	0.0	34.0	2.1	8.5	2.1	0.0	12.8	0.0	34.0	8.5	0.0	42.6	
Exiting Leg Total					10					18					4					15	47

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

7:30 AM	Corey Road from North					Washington Street from East					Corey Road from South					Washington Street 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	0	0	2	0	3	0	0	3	0	0	0	0	0	0	3	1	0	4	9
7:45 AM	0	1	0	0	1	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	5
8:00 AM	0	0	0	0	0	0	2	0	0	2	0	1	0	0	1	0	2	1	0	3	6
8:15 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	0	2	1	0	3	5
Total Volume	0	3	0	0	3	0	7	0	0	7	1	2	0	0	3	0	9	3	0	12	25
% Approach Total	0.0	100.0	0.0	0.0		0.0	100.0	0.0	0.0		33.3	66.7	0.0	0.0		0.0	75.0	25.0	0.0		
PHF	0.000	0.375	0.000	0.000	0.375	0.000	0.583	0.000	0.000	0.583	0.250	0.500	0.000	0.000	0.375	0.000	0.750	0.750	0.000	0.750	0.694
Entering Leg	0	3	0	0	3	0	7	0	0	7	1	2	0	0	3	0	9	3	0	12	25
Exiting Leg					5					10					3					7	25
Total					8					17					6					19	50

PDI File #: **175958 C**
Location: **N: Corey Road S: Corey Road**
Location: **E: Washington Street W: Washington Street**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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**

	Corey Road from North					Washington Street from East					Corey Road from South					Washington Street 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	1	1	0	2	0	7	0	0	7	0	0	1	0	1	1	3	0	0	4	14
7:15 AM	0	0	0	0	0	0	2	0	0	2	0	0	3	0	3	0	5	0	0	5	10
7:30 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	5	0	0	6	7
7:45 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	1	5	0	0	6	8
Total	0	1	1	0	2	0	12	0	0	12	0	0	4	0	4	3	18	0	0	21	39
8:00 AM	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	2	0	0	2	9
8:15 AM	0	0	0	0	0	0	4	0	0	4	0	0	1	0	1	0	2	0	0	2	7
8:30 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	6	0	0	6	8
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	4
Total	0	0	0	0	0	0	13	0	0	13	0	0	1	0	1	0	14	0	0	14	28
Grand Total	0	1	1	0	2	0	25	0	0	25	0	0	5	0	5	3	32	0	0	35	67
Approach %	0.0	50.0	50.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	100.0	0.0		8.6	91.4	0.0	0.0		
Total %	0.0	1.5	1.5	0.0	3.0	0.0	37.3	0.0	0.0	37.3	0.0	0.0	7.5	0.0	7.5	4.5	47.8	0.0	0.0	52.2	
Exiting Leg Total					0					33					4					30	67

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

7:00 AM	Corey Road from North					Washington Street from East					Corey Road from South					Washington Street 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	1	1	0	2	0	7	0	0	7	0	0	1	0	1	1	3	0	0	4	14
7:15 AM	0	0	0	0	0	0	2	0	0	2	0	0	3	0	3	0	5	0	0	5	10
7:30 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	5	0	0	6	7
7:45 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	1	5	0	0	6	8
Total Volume	0	1	1	0	2	0	12	0	0	12	0	0	4	0	4	3	18	0	0	21	39
% Approach Total	0.0	50.0	50.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	100.0	0.0		14.3	85.7	0.0	0.0		
PHF	0.000	0.250	0.250	0.000	0.250	0.000	0.429	0.000	0.000	0.429	0.000	0.000	0.333	0.000	0.333	0.750	0.900	0.000	0.000	0.875	0.696
Entering Leg	0	1	1	0	2	0	12	0	0	12	0	0	4	0	4	3	18	0	0	21	39
Exiting Leg					0					19					4					16	39
Total					2					31					8					37	78

PDI File #: **175958 C**
Location: **N: Corey Road S: Corey Road**
Location: **E: Washington Street W: Washington Street**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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)

	Corey Road from North							Washington Street from East							Corey Road from South							Washington Street 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	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	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	0	2	0	0	0	0	2	2
7:30 AM	0	1	0	0	0	0	1	0	3	0	0	0	0	3	0	0	0	0	0	0	0	1	4	0	0	0	0	5	9
7:45 AM	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	4	0	0	0	0	4	6
Total	0	1	0	0	0	0	1	0	6	0	0	0	0	6	0	0	0	0	0	0	0	1	11	0	0	0	0	12	19
8:00 AM	0	0	0	0	0	1	1	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	3	0	0	0	0	3	7
8:15 AM	0	0	1	0	0	0	1	0	1	0	0	0	0	1	0	0	0	0	0	1	1	0	4	0	0	0	1	5	8
8:30 AM	0	0	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	0	0	0	2	4
8:45 AM	0	1	0	0	0	0	1	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	2	0	0	0	0	2	5
Total	0	1	1	0	0	2	4	0	7	0	0	0	0	7	0	0	0	0	0	1	1	0	11	0	0	0	1	12	24
Grand Total	0	2	1	0	0	2	5	0	13	0	0	0	0	13	0	0	0	0	0	1	1	1	22	0	0	0	1	24	43
Approach %	0.0	40.0	20.0	0.0	0.0	40.0		0.0	100.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	100.0		4.2	91.7	0.0	0.0	0.0	4.2		
Total %	0.0	4.7	2.3	0.0	0.0	4.7	11.6	0.0	30.2	0.0	0.0	0.0	0.0	30.2	0.0	0.0	0.0	0.0	0.0	2.3	2.3	2.3	51.2	0.0	0.0	0.0	2.3	55.8	
Exiting Leg Total							2							23							4							14	43

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

7:30 AM	Corey Road from North							Washington Street from East							Corey Road from South							Washington Street 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
7:30 AM	0	1	0	0	0	0	1	0	3	0	0	0	0	3	0	0	0	0	0	0	0	1	4	0	0	0	0	5	9
7:45 AM	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	4	0	0	0	0	4	6
8:00 AM	0	0	0	0	0	1	1	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	3	0	0	0	0	3	7
8:15 AM	0	0	1	0	0	0	1	0	1	0	0	0	0	1	0	0	0	0	0	1	1	0	4	0	0	0	1	5	8
Total Volume	0	1	1	0	0	1	3	0	9	0	0	0	0	9	0	0	0	0	0	1	1	1	15	0	0	0	1	17	30
% Approach Total	0.0	33.3	33.3	0.0	0.0	33.3		0.0	100.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	100.0		5.9	88.2	0.0	0.0	0.0	5.9		
PHF	0.000	0.250	0.250	0.000	0.000	0.250	0.750	0.000	0.750	0.000	0.000	0.000	0.000	0.750	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.250	0.938	0.000	0.000	0.000	0.250	0.850	0.833
Entering Leg	0	1	1	0	0	1	3	0	9	0	0	0	0	9	0	0	0	0	0	1	1	1	15	0	0	0	1	17	30
Exiting Leg							1							16							3							10	30
Total							4							25							4							27	60

PDI File #: **175958 C**
Location: **N: Corey Road S: Corey Road**
Location: **E: Washington Street W: Washington Street**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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

	Corey Road from North							Washington Street from East							Corey Road from South							Washington Street 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	4	3	7	0	0	0	0	3	3	6	0	0	0	0	1	14	15	0	0	0	0	4	7	11	39
7:15 AM	0	0	0	0	7	3	10	0	0	0	0	1	5	6	0	0	0	0	7	8	15	0	0	0	0	5	1	6	37
7:30 AM	0	0	0	0	11	3	14	0	0	0	0	0	0	0	0	0	0	0	7	20	27	0	0	0	0	1	7	8	49
7:45 AM	0	0	0	0	6	2	8	0	0	0	0	2	4	6	0	0	0	0	9	5	14	0	0	0	0	3	2	5	33
Total	0	0	0	0	28	11	39	0	0	0	0	6	12	18	0	0	0	0	24	47	71	0	0	0	0	13	17	30	158
8:00 AM	0	0	0	0	6	1	7	0	0	0	0	5	1	6	0	0	0	0	2	4	6	0	0	0	0	0	4	4	23
8:15 AM	0	0	0	0	13	4	17	0	0	0	0	3	0	3	0	0	0	0	5	5	10	0	0	0	0	5	3	8	38
8:30 AM	0	0	0	0	10	3	13	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0	4	2	6	22
8:45 AM	0	0	0	0	8	3	11	0	0	0	0	1	1	2	0	0	0	0	2	3	5	0	0	0	0	4	5	9	27
Total	0	0	0	0	37	11	48	0	0	0	0	9	2	11	0	0	0	0	9	15	24	0	0	0	0	13	14	27	110
Grand Total	0	0	0	0	65	22	87	0	0	0	0	15	14	29	0	0	0	0	33	62	95	0	0	0	0	26	31	57	268
Approach %	0.0	0.0	0.0	0.0	74.7	25.3		0.0	0.0	0.0	0.0	51.7	48.3		0.0	0.0	0.0	0.0	34.7	65.3		0.0	0.0	0.0	0.0	45.6	54.4		
Total %	0.0	0.0	0.0	0.0	24.3	8.2	32.5	0.0	0.0	0.0	0.0	5.6	5.2	10.8	0.0	0.0	0.0	0.0	12.3	23.1	35.4	0.0	0.0	0.0	0.0	9.7	11.6	21.3	
Exiting Leg Total							87							29							95							57	268

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

7:00 AM	Corey Road from North							Washington Street from East							Corey Road from South							Washington Street 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	4	3	7	0	0	0	0	3	3	6	0	0	0	0	1	14	15	0	0	0	0	4	7	11	39
7:15 AM	0	0	0	0	7	3	10	0	0	0	0	1	5	6	0	0	0	0	7	8	15	0	0	0	0	5	1	6	37
7:30 AM	0	0	0	0	11	3	14	0	0	0	0	0	0	0	0	0	0	0	7	20	27	0	0	0	0	1	7	8	49
7:45 AM	0	0	0	0	6	2	8	0	0	0	0	2	4	6	0	0	0	0	9	5	14	0	0	0	0	3	2	5	33
Total Volume	0	0	0	0	28	11	39	0	0	0	0	6	12	18	0	0	0	0	24	47	71	0	0	0	0	13	17	30	158
% Approach Total	0.0	0.0	0.0	0.0	71.8	28.2		0.0	0.0	0.0	0.0	33.3	66.7		0.0	0.0	0.0	0.0	33.8	66.2		0.0	0.0	0.0	0.0	43.3	56.7		
PHF	0.000	0.000	0.000	0.000	0.636	0.917	0.696	0.000	0.000	0.000	0.000	0.500	0.600	0.750	0.000	0.000	0.000	0.000	0.667	0.588	0.657	0.000	0.000	0.000	0.000	0.650	0.607	0.682	0.806
Entering Leg	0	0	0	0	28	11	39	0	0	0	0	6	12	18	0	0	0	0	24	47	71	0	0	0	0	13	17	30	158
Exiting Leg							39							18							71							30	158
Total							78							36							142							60	316

PDI File #: **175958 CC**
Location: **N: Corey Road S: Corey Road**
Location: **E: Washington Street W: Washington Street**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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 and Heavy Vehicles (Combined)

	Corey Road from North					Washington Street from East					Corey Road from South					Washington Street 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	8	67	10	0	85	31	77	4	0	112	3	37	12	0	52	43	113	15	0	171	420
4:15 PM	8	35	4	0	47	29	89	0	0	118	4	32	22	0	58	23	112	16	0	151	374
4:30 PM	8	44	8	0	60	21	95	0	0	116	3	35	16	0	54	33	96	9	0	138	368
4:45 PM	6	59	10	0	75	28	85	3	0	116	4	36	15	0	55	32	105	14	0	151	397
Total	30	205	32	0	267	109	346	7	0	462	14	140	65	0	219	131	426	54	0	611	1559
5:00 PM	5	63	9	0	77	34	75	3	1	113	4	36	12	0	52	34	132	4	0	170	412
5:15 PM	13	46	8	0	67	18	81	0	1	100	4	39	19	0	62	38	121	13	0	172	401
5:30 PM	8	49	14	0	71	38	88	5	1	132	5	55	14	0	74	45	99	12	0	156	433
5:45 PM	10	58	11	0	79	24	81	2	0	107	0	52	8	0	60	24	117	20	0	161	407
Total	36	216	42	0	294	114	325	10	3	452	13	182	53	0	248	141	469	49	0	659	1653
Grand Total	66	421	74	0	561	223	671	17	3	914	27	322	118	0	467	272	895	103	0	1270	3212
Approach %	11.8	75.0	13.2	0.0		24.4	73.4	1.9	0.3		5.8	69.0	25.3	0.0		21.4	70.5	8.1	0.0		
Total %	2.1	13.1	2.3	0.0	17.5	6.9	20.9	0.5	0.1	28.5	0.8	10.0	3.7	0.0	14.5	8.5	27.9	3.2	0.0	39.5	
Exiting Leg Total					648					999					710					855	3212
Cars	66	416	74	0	556	219	640	17	3	879	25	315	114	0	454	272	869	103	0	1244	3133
% Cars	100.0	98.8	100.0	0.0	99.1	98.2	95.4	100.0	100.0	96.2	92.6	97.8	96.6	0.0	97.2	100.0	97.1	100.0	0.0	98.0	97.5
Exiting Leg Total					637					971					705					820	3133
Heavy Vehicles	0	5	0	0	5	4	31	0	0	35	2	7	4	0	13	0	26	0	0	26	79
% Heavy Vehicles	0.0	1.2	0.0	0.0	0.9	1.8	4.6	0.0	0.0	3.8	7.4	2.2	3.4	0.0	2.8	0.0	2.9	0.0	0.0	2.0	2.5
Exiting Leg Total					11					28					5					35	79

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

5:00 PM	Corey Road from North					Washington Street from East					Corey Road from South					Washington Street 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	63	9	0	77	34	75	3	1	113	4	36	12	0	52	34	132	4	0	170	412
5:15 PM	13	46	8	0	67	18	81	0	1	100	4	39	19	0	62	38	121	13	0	172	401
5:30 PM	8	49	14	0	71	38	88	5	1	132	5	55	14	0	74	45	99	12	0	156	433
5:45 PM	10	58	11	0	79	24	81	2	0	107	0	52	8	0	60	24	117	20	0	161	407
Total Volume	36	216	42	0	294	114	325	10	3	452	13	182	53	0	248	141	469	49	0	659	1653
% Approach Total	12.2	73.5	14.3	0.0		25.2	71.9	2.2	0.7		5.2	73.4	21.4	0.0		21.4	71.2	7.4	0.0		
PHF	0.692	0.857	0.750	0.000	0.930	0.750	0.923	0.500	0.750	0.856	0.650	0.827	0.697	0.000	0.838	0.783	0.888	0.613	0.000	0.958	0.954
Cars	36	214	42	0	292	112	307	10	3	432	13	179	49	0	241	141	457	49	0	647	1612
Cars %	100.0	99.1	100.0	0.0	99.3	98.2	94.5	100.0	100.0	95.6	100.0	98.4	92.5	0.0	97.2	100.0	97.4	100.0	0.0	98.2	97.5
Heavy Vehicles	0	2	0	0	2	2	18	0	0	20	0	3	4	0	7	0	12	0	0	12	41
Heavy Vehicles %	0.0	0.9	0.0	0.0	0.7	1.8	5.5	0.0	0.0	4.4	0.0	1.6	7.5	0.0	2.8	0.0	2.6	0.0	0.0	1.8	2.5
Cars Enter Leg	36	214	42	0	292	112	307	10	3	432	13	179	49	0	241	141	457	49	0	647	1612
Heavy Enter Leg	0	2	0	0	2	2	18	0	0	20	0	3	4	0	7	0	12	0	0	12	41
Total Entering Leg	36	216	42	0	294	114	325	10	3	452	13	182	53	0	248	141	469	49	0	659	1653
Cars Exiting Leg					340					515					365					392	1612
Heavy Exiting Leg					5					12					2					22	41
Total Exiting Leg					345					527					367					414	1653

PDI File #: **175958 CC**
Location: **N: Corey Road S: Corey Road**
Location: **E: Washington Street W: Washington Street**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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

	Corey Road from North					Washington Street from East					Corey Road from South					Washington Street 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	8	66	10	0	84	31	72	4	0	107	2	34	12	0	48	43	108	15	0	166	405
4:15 PM	8	35	4	0	47	28	86	0	0	114	4	32	22	0	58	23	105	16	0	144	363
4:30 PM	8	44	8	0	60	20	94	0	0	114	2	35	16	0	53	33	96	9	0	138	365
4:45 PM	6	57	10	0	73	28	81	3	0	112	4	35	15	0	54	32	103	14	0	149	388
Total	30	202	32	0	264	107	333	7	0	447	12	136	65	0	213	131	412	54	0	597	1521
5:00 PM	5	62	9	0	76	34	71	3	1	109	4	35	11	0	50	34	129	4	0	167	402
5:15 PM	13	46	8	0	67	18	74	0	1	93	4	39	19	0	62	38	117	13	0	168	390
5:30 PM	8	48	14	0	70	37	84	5	1	127	5	54	11	0	70	45	96	12	0	153	420
5:45 PM	10	58	11	0	79	23	78	2	0	103	0	51	8	0	59	24	115	20	0	159	400
Total	36	214	42	0	292	112	307	10	3	432	13	179	49	0	241	141	457	49	0	647	1612
Grand Total	66	416	74	0	556	219	640	17	3	879	25	315	114	0	454	272	869	103	0	1244	3133
Approach %	11.9	74.8	13.3	0.0		24.9	72.8	1.9	0.3		5.5	69.4	25.1	0.0		21.9	69.9	8.3	0.0		
Total %	2.1	13.3	2.4	0.0	17.7	7.0	20.4	0.5	0.1	28.1	0.8	10.1	3.6	0.0	14.5	8.7	27.7	3.3	0.0	39.7	
Exiting Leg Total					637					971					705					820	3133

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

5:00 PM	Corey Road from North					Washington Street from East					Corey Road from South					Washington Street 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	62	9	0	76	34	71	3	1	109	4	35	11	0	50	34	129	4	0	167	402
5:15 PM	13	46	8	0	67	18	74	0	1	93	4	39	19	0	62	38	117	13	0	168	390
5:30 PM	8	48	14	0	70	37	84	5	1	127	5	54	11	0	70	45	96	12	0	153	420
5:45 PM	10	58	11	0	79	23	78	2	0	103	0	51	8	0	59	24	115	20	0	159	400
Total Volume	36	214	42	0	292	112	307	10	3	432	13	179	49	0	241	141	457	49	0	647	1612
% Approach Total	12.3	73.3	14.4	0.0		25.9	71.1	2.3	0.7		5.4	74.3	20.3	0.0		21.8	70.6	7.6	0.0		
PHF	0.692	0.863	0.750	0.000	0.924	0.757	0.914	0.500	0.750	0.850	0.650	0.829	0.645	0.000	0.861	0.783	0.886	0.613	0.000	0.963	0.960
Entering Leg	36	214	42	0	292	112	307	10	3	432	13	179	49	0	241	141	457	49	0	647	1612
Exiting Leg					340					515					365					392	1612
Total					632					947					606					1039	3224

PDI File #: **175958 CC**
Location: **N: Corey Road S: Corey Road**
Location: **E: Washington Street W: Washington Street**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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 (Combined-Large Trucks and Buses)

	Corey Road from North					Washington Street from East					Corey Road from South					Washington Street 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	5	0	0	5	1	3	0	0	4	0	5	0	0	5	15
4:15 PM	0	0	0	0	0	1	3	0	0	4	0	0	0	0	0	0	7	0	0	7	11
4:30 PM	0	0	0	0	0	1	1	0	0	2	1	0	0	0	1	0	0	0	0	0	3
4:45 PM	0	2	0	0	2	0	4	0	0	4	0	1	0	0	1	0	2	0	0	2	9
Total	0	3	0	0	3	2	13	0	0	15	2	4	0	0	6	0	14	0	0	14	38
5:00 PM	0	1	0	0	1	0	4	0	0	4	0	1	1	0	2	0	3	0	0	3	10
5:15 PM	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	4	0	0	4	11
5:30 PM	0	1	0	0	1	1	4	0	0	5	0	1	3	0	4	0	3	0	0	3	13
5:45 PM	0	0	0	0	0	1	3	0	0	4	0	1	0	0	1	0	2	0	0	2	7
Total	0	2	0	0	2	2	18	0	0	20	0	3	4	0	7	0	12	0	0	12	41
Grand Total	0	5	0	0	5	4	31	0	0	35	2	7	4	0	13	0	26	0	0	26	79
Approach %	0.0	100.0	0.0	0.0		11.4	88.6	0.0	0.0		15.4	53.8	30.8	0.0		0.0	100.0	0.0	0.0		
Total %	0.0	6.3	0.0	0.0	6.3	5.1	39.2	0.0	0.0	44.3	2.5	8.9	5.1	0.0	16.5	0.0	32.9	0.0	0.0	32.9	
Exiting Leg Total					11					28					5					35	79
Large Trucks	0	5	0	0	5	2	8	0	0	10	1	4	3	0	8	0	8	0	0	8	31
% Large Trucks	0.0	100.0	0.0	0.0	100.0	50.0	25.8	0.0	0.0	28.6	50.0	57.1	75.0	0.0	61.5	0.0	30.8	0.0	0.0	30.8	39.2
Exiting Leg Total					6					9					5					11	31
Buses	0	0	0	0	0	2	23	0	0	25	1	3	1	0	5	0	18	0	0	18	48
% Buses	0.0	0.0	0.0	0.0	0.0	50.0	74.2	0.0	0.0	71.4	50.0	42.9	25.0	0.0	38.5	0.0	69.2	0.0	0.0	69.2	60.8
Exiting Leg Total					5					19					0					24	48

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

4:45 PM	Corey Road from North					Washington Street from East					Corey Road from South					Washington Street 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	2	0	0	2	0	4	0	0	4	0	1	0	0	1	0	2	0	0	2	9
5:00 PM	0	1	0	0	1	0	4	0	0	4	0	1	1	0	2	0	3	0	0	3	10
5:15 PM	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	4	0	0	4	11
5:30 PM	0	1	0	0	1	1	4	0	0	5	0	1	3	0	4	0	3	0	0	3	13
Total Volume	0	4	0	0	4	1	19	0	0	20	0	3	4	0	7	0	12	0	0	12	43
% Approach Total	0.0	100.0	0.0	0.0		5.0	95.0	0.0	0.0		0.0	42.9	57.1	0.0		0.0	100.0	0.0	0.0		
PHF	0.000	0.500	0.000	0.000	0.500	0.250	0.679	0.000	0.000	0.714	0.000	0.750	0.333	0.000	0.438	0.000	0.750	0.000	0.000	0.750	0.827
Large Trucks	0	4	0	0	4	1	5	0	0	6	0	1	3	0	4	0	3	0	0	3	17
Large Trucks %	0.0	100.0	0.0	0.0	100.0	100.0	26.3	0.0	0.0	30.0	0.0	33.3	75.0	0.0	57.1	0.0	25.0	0.0	0.0	25.0	39.5
Buses	0	0	0	0	0	0	14	0	0	14	0	2	1	0	3	0	9	0	0	9	26
Buses %	0.0	0.0	0.0	0.0	0.0	0.0	73.7	0.0	0.0	70.0	0.0	66.7	25.0	0.0	42.9	0.0	75.0	0.0	0.0	75.0	60.5
Trucks Enter Leg	0	4	0	0	4	1	5	0	0	6	0	1	3	0	4	0	3	0	0	3	17
Bus Enter Leg	0	0	0	0	0	0	14	0	0	14	0	2	1	0	3	0	9	0	0	9	26
Total Entering Leg	0	4	0	0	4	1	19	0	0	20	0	3	4	0	7	0	12	0	0	12	43
Trucks Exiting Leg					2					3					4					8	17
Buses Exiting Leg					2					9					0					15	26
Total Exiting Leg					4					12					4					23	43

PDI File #: **175958 CC**
Location: **N: Corey Road S: Corey Road**
Location: **E: Washington Street W: Washington Street**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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

Large Trucks

	Corey Road from North					Washington Street from East					Corey Road from South					Washington Street 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	2	0	0	2	0	2	0	0	2	5
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	3
4:30 PM	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	0	0	0	0	0	2
4:45 PM	0	2	0	0	2	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	4
Total	0	3	0	0	3	0	3	0	0	3	1	2	0	0	3	0	5	0	0	5	14
5:00 PM	0	1	0	0	1	0	1	0	0	1	0	1	1	0	2	0	1	0	0	1	5
5:15 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
5:30 PM	0	1	0	0	1	1	0	0	0	1	0	0	2	0	2	0	1	0	0	1	5
5:45 PM	0	0	0	0	0	1	2	0	0	3	0	1	0	0	1	0	0	0	0	0	4
Total	0	2	0	0	2	2	5	0	0	7	0	2	3	0	5	0	3	0	0	3	17
Grand Total	0	5	0	0	5	2	8	0	0	10	1	4	3	0	8	0	8	0	0	8	31
Approach %	0.0	100.0	0.0	0.0		20.0	80.0	0.0	0.0		12.5	50.0	37.5	0.0		0.0	100.0	0.0	0.0		
Total %	0.0	16.1	0.0	0.0	16.1	6.5	25.8	0.0	0.0	32.3	3.2	12.9	9.7	0.0	25.8	0.0	25.8	0.0	0.0	25.8	
Exiting Leg Total					6					9					5					11	31

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

4:00 PM	Corey Road from North					Washington Street from East					Corey Road from South					Washington Street 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	2	0	0	2	0	2	0	0	2	5
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	3
4:30 PM	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	0	0	0	0	0	2
4:45 PM	0	2	0	0	2	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	4
Total Volume	0	3	0	0	3	0	3	0	0	3	1	2	0	0	3	0	5	0	0	5	14
% Approach Total	0.0	100.0	0.0	0.0		0.0	100.0	0.0	0.0		33.3	66.7	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	0.375	0.000	0.000	0.375	0.250	0.250	0.000	0.000	0.375	0.000	0.417	0.000	0.000	0.417	0.700
Entering Leg	0	3	0	0	3	0	3	0	0	3	1	2	0	0	3	0	5	0	0	5	14
Exiting Leg					2					6					3					3	14
Total					5					9					6					8	28

PDI File #: **175958 CC**
Location: **N: Corey Road S: Corey Road**
Location: **E: Washington Street W: Washington Street**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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**

	Corey Road from North					Washington Street from East					Corey Road from South					Washington Street 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	0	0	0	0	5	0	0	5	1	1	0	0	2	0	3	0	0	3	10
4:15 PM	0	0	0	0	0	1	3	0	0	4	0	0	0	0	0	0	4	0	0	4	8
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	0	0	0	0	0	2	0	0	2	0	1	0	0	1	0	2	0	0	2	5
Total	0	0	0	0	0	2	10	0	0	12	1	2	0	0	3	0	9	0	0	9	24
5:00 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	5
5:15 PM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	3	0	0	3	8
5:30 PM	0	0	0	0	0	0	4	0	0	4	0	1	1	0	2	0	2	0	0	2	8
5:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	3
Total	0	0	0	0	0	0	13	0	0	13	0	1	1	0	2	0	9	0	0	9	24
Grand Total	0	0	0	0	0	2	23	0	0	25	1	3	1	0	5	0	18	0	0	18	48
Approach %	0.0	0.0	0.0	0.0		8.0	92.0	0.0	0.0		20.0	60.0	20.0	0.0		0.0	100.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	4.2	47.9	0.0	0.0	52.1	2.1	6.3	2.1	0.0	10.4	0.0	37.5	0.0	0.0	37.5	
Exiting Leg Total					5					19					0					24	48

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

4:45 PM	Corey Road from North					Washington Street from East					Corey Road from South					Washington Street 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	0	0	0	0	0	2	0	0	2	0	1	0	0	1	0	2	0	0	2	5
5:00 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	5
5:15 PM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	3	0	0	3	8
5:30 PM	0	0	0	0	0	0	4	0	0	4	0	1	1	0	2	0	2	0	0	2	8
Total Volume	0	0	0	0	0	0	14	0	0	14	0	2	1	0	3	0	9	0	0	9	26
% Approach Total	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	66.7	33.3	0.0		0.0	100.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.700	0.000	0.000	0.700	0.000	0.500	0.250	0.000	0.375	0.000	0.750	0.000	0.000	0.750	0.813
Entering Leg	0	0	0	0	0	0	14	0	0	14	0	2	1	0	3	0	9	0	0	9	26
Exiting Leg					2					9					0					15	26
Total					2					23					3					24	52

PDI File #: **175958 CC**
Location: **N: Corey Road S: Corey Road**
Location: **E: Washington Street W: Washington Street**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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)

	Corey Road from North							Washington Street from East							Corey Road from South							Washington Street 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	0	0	0	0	1	2	0	2	0	0	0	2	4	0	0	0	0	0	0	0	0	1	0	0	0	1	2	8
4:15 PM	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	1	3
4:30 PM	0	0	1	0	0	0	1	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0	2	0	0	0	1	3	8
4:45 PM	0	0	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	1	0	1	0	0	2	4	0	9	0	0	0	2	11	0	0	0	0	0	0	0	0	3	0	0	1	2	6	21
5:00 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	1	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	4	0	0	0	0	4	0	0	0	0	0	0	0	0	5	0	0	0	0	5	9
5:30 PM	0	0	0	0	0	0	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
5:45 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	3	0	0	0	0	3	4
Total	0	0	0	0	0	0	0	0	9	0	0	0	0	9	0	0	0	0	0	0	0	0	10	0	0	0	0	10	19
Grand Total	1	0	1	0	0	2	4	0	18	0	0	0	2	20	0	0	0	0	0	0	0	0	13	0	0	1	2	16	40
Approach %	25.0	0.0	25.0	0.0	0.0	50.0		0.0	90.0	0.0	0.0	0.0	10.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	81.3	0.0	0.0	6.3	12.5		
Total %	2.5	0.0	2.5	0.0	0.0	5.0	10.0	0.0	45.0	0.0	0.0	0.0	5.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	32.5	0.0	0.0	2.5	5.0	40.0	
Exiting Leg Total							2							16							0							22	40

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

4:30 PM	Corey Road from North							Washington Street from East							Corey Road from South							Washington Street 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
4:30 PM	0	0	1	0	0	0	1	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0	2	0	0	0	1	3	8
4:45 PM	0	0	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:00 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	1	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	4	0	0	0	0	4	0	0	0	0	0	0	0	0	5	0	0	0	0	5	9
Total Volume	0	0	1	0	0	1	2	0	10	0	0	0	0	10	0	0	0	0	0	0	0	0	9	0	0	0	1	10	22
% Approach Total	0.0	0.0	50.0	0.0	0.0	50.0		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	90.0	0.0	0.0	0.0	10.0		
PHF	0.000	0.000	0.250	0.000	0.000	0.250	0.500	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	0.000	0.450	0.000	0.000	0.000	0.250	0.500	0.611
Entering Leg	0	0	1	0	0	1	2	0	10	0	0	0	0	10	0	0	0	0	0	0	0	0	9	0	0	0	1	10	22
Exiting Leg							1							10							0							11	22
Total							3							20							0							21	44

PDI File #: **175958 CC**
Location: **N: Corey Road S: Corey Road**
Location: **E: Washington Street W: Washington Street**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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

	Corey Road from North							Washington Street from East							Corey Road from South							Washington Street 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	4	2	6	0	0	0	0	0	1	1	0	0	0	0	0	3	3	0	0	0	0	6	3	9	19
4:15 PM	0	0	0	0	7	3	10	0	0	0	0	0	0	0	0	0	0	0	3	2	5	0	0	0	0	2	6	8	23
4:30 PM	0	0	0	0	2	6	8	0	0	0	0	1	2	3	0	0	0	0	1	6	7	0	0	0	0	4	4	8	26
4:45 PM	0	0	0	0	7	2	9	0	0	0	0	0	0	0	0	0	0	0	3	2	5	0	0	0	0	1	4	5	19
Total	0	0	0	0	20	13	33	0	0	0	0	1	3	4	0	0	0	0	7	13	20	0	0	0	0	13	17	30	87
5:00 PM	0	0	0	0	5	5	10	0	0	0	0	1	0	1	0	0	0	0	4	5	9	0	0	0	0	5	3	8	28
5:15 PM	0	0	0	0	2	11	13	0	0	0	0	0	3	3	0	0	0	0	1	7	8	0	0	0	0	2	6	8	32
5:30 PM	0	0	0	0	7	11	18	0	0	0	0	3	2	5	0	0	0	0	7	2	9	0	0	0	0	5	10	15	47
5:45 PM	0	0	0	0	6	9	15	0	0	0	0	1	1	2	0	0	0	0	3	6	9	0	0	0	0	7	8	15	41
Total	0	0	0	0	20	36	56	0	0	0	0	5	6	11	0	0	0	0	15	20	35	0	0	0	0	19	27	46	148
Grand Total	0	0	0	0	40	49	89	0	0	0	0	6	9	15	0	0	0	0	22	33	55	0	0	0	0	32	44	76	235
Approach %	0.0	0.0	0.0	0.0	44.9	55.1		0.0	0.0	0.0	0.0	40.0	60.0		0.0	0.0	0.0	0.0	40.0	60.0		0.0	0.0	0.0	0.0	42.1	57.9		
Total %	0.0	0.0	0.0	0.0	17.0	20.9	37.9	0.0	0.0	0.0	0.0	2.6	3.8	6.4	0.0	0.0	0.0	0.0	9.4	14.0	23.4	0.0	0.0	0.0	0.0	13.6	18.7	32.3	
Exiting Leg Total							89							15							55							76	235

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

5:00 PM	Corey Road from North							Washington Street from East							Corey Road from South							Washington Street 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	5	5	10	0	0	0	0	1	0	1	0	0	0	0	4	5	9	0	0	0	0	5	3	8	28
5:15 PM	0	0	0	0	2	11	13	0	0	0	0	0	3	3	0	0	0	0	1	7	8	0	0	0	0	2	6	8	32
5:30 PM	0	0	0	0	7	11	18	0	0	0	0	3	2	5	0	0	0	0	7	2	9	0	0	0	0	5	10	15	47
5:45 PM	0	0	0	0	6	9	15	0	0	0	0	1	1	2	0	0	0	0	3	6	9	0	0	0	0	7	8	15	41
Total Volume	0	0	0	0	20	36	56	0	0	0	0	5	6	11	0	0	0	0	15	20	35	0	0	0	0	19	27	46	148
% Approach Total	0.0	0.0	0.0	0.0	35.7	64.3		0.0	0.0	0.0	0.0	45.5	54.5		0.0	0.0	0.0	0.0	42.9	57.1		0.0	0.0	0.0	0.0	41.3	58.7		
PHF	0.000	0.000	0.000	0.000	0.714	0.818	0.778	0.000	0.000	0.000	0.000	0.417	0.500	0.550	0.000	0.000	0.000	0.000	0.536	0.714	0.972	0.000	0.000	0.000	0.000	0.679	0.675	0.767	0.787
Entering Leg	0	0	0	0	20	36	56	0	0	0	0	5	6	11	0	0	0	0	15	20	35	0	0	0	0	19	27	46	148
Exiting Leg							56							11							35							46	148
Total							112							22							70							92	296

PDI File #: **175958 D**
Location: **N: Bartlett Crescent**
Location: **E: Washington Street W: Washington Street**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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 and Heavy Vehicles (Combined)

	Bartlett Crescent from North				Washington Street from East				Washington Street from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Total
7:00 AM	2	0	0	2	0	84	0	84	115	1	0	116	202
7:15 AM	0	0	0	0	1	90	0	91	143	2	0	145	236
7:30 AM	0	2	0	2	1	99	0	100	116	5	0	121	223
7:45 AM	1	1	0	2	3	112	0	115	125	2	1	128	245
Total	3	3	0	6	5	385	0	390	499	10	1	510	906
8:00 AM	3	3	0	6	4	144	0	148	115	3	0	118	272
8:15 AM	0	1	0	1	2	138	0	140	91	4	0	95	236
8:30 AM	0	1	0	1	3	115	0	118	114	2	0	116	235
8:45 AM	1	0	0	1	1	126	1	128	125	2	0	127	256
Total	4	5	0	9	10	523	1	534	445	11	0	456	999
Grand Total	7	8	0	15	15	908	1	924	944	21	1	966	1905
Approach %	46.7	53.3	0.0		1.6	98.3	0.1		97.7	2.2	0.1		
Total %	0.4	0.4	0.0	0.8	0.8	47.7	0.1	48.5	49.6	1.1	0.1	50.7	
Exiting Leg Total				36				953				916	1905
Cars	7	8	0	15	15	868	1	884	892	21	1	914	1813
% Cars	100.0	100.0	0.0	100.0	100.0	95.6	100.0	95.7	94.5	100.0	100.0	94.6	95.2
Exiting Leg Total				36				901				876	1813
Heavy Vehicles	0	0	0	0	0	40	0	40	52	0	0	52	92
% Heavy Vehicles	0.0	0.0	0.0	0.0	0.0	4.4	0.0	4.3	5.5	0.0	0.0	5.4	4.8
Exiting Leg Total				0				52				40	92

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

8:00 AM	Bartlett Crescent from North				Washington Street from East				Washington Street from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Total
8:00 AM	3	3	0	6	4	144	0	148	115	3	0	118	272
8:15 AM	0	1	0	1	2	138	0	140	91	4	0	95	236
8:30 AM	0	1	0	1	3	115	0	118	114	2	0	116	235
8:45 AM	1	0	0	1	1	126	1	128	125	2	0	127	256
Total Volume	4	5	0	9	10	523	1	534	445	11	0	456	999
% Approach Total	44.4	55.6	0.0		1.9	97.9	0.2		97.6	2.4	0.0		
PHF	0.333	0.417	0.000	0.375	0.625	0.908	0.250	0.902	0.890	0.688	0.000	0.898	0.918
Cars	4	5	0	9	10	504	1	515	422	11	0	433	957
Cars %	100.0	100.0	0.0	100.0	100.0	96.4	100.0	96.4	94.8	100.0	0.0	95.0	95.8
Heavy Vehicles	0	0	0	0	0	19	0	19	23	0	0	23	42
Heavy Vehicles %	0.0	0.0	0.0	0.0	0.0	3.6	0.0	3.6	5.2	0.0	0.0	5.0	4.2
Cars Enter Leg	4	5	0	9	10	504	1	515	422	11	0	433	957
Heavy Enter Leg	0	0	0	0	0	19	0	19	23	0	0	23	42
Total Entering Leg	4	5	0	9	10	523	1	534	445	11	0	456	999
Cars Exiting Leg				21				428				508	957
Heavy Exiting Leg				0				23				19	42
Total Exiting Leg				21				451				527	999

PDI File #: **175958 D**
Location: **N: Bartlett Crescent**
Location: **E: Washington Street W: Washington Street**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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**

	Bartlett Crescent from North				Washington Street from East				Washington Street from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Total
7:00 AM	2	0	0	2	0	75	0	75	108	1	0	109	186
7:15 AM	0	0	0	0	1	86	0	87	136	2	0	138	225
7:30 AM	0	2	0	2	1	95	0	96	109	5	0	114	212
7:45 AM	1	1	0	2	3	108	0	111	117	2	1	120	233
Total	3	3	0	6	5	364	0	369	470	10	1	481	856
8:00 AM	3	3	0	6	4	136	0	140	111	3	0	114	260
8:15 AM	0	1	0	1	2	134	0	136	86	4	0	90	227
8:30 AM	0	1	0	1	3	111	0	114	107	2	0	109	224
8:45 AM	1	0	0	1	1	123	1	125	118	2	0	120	246
Total	4	5	0	9	10	504	1	515	422	11	0	433	957
Grand Total	7	8	0	15	15	868	1	884	892	21	1	914	1813
Approach %	46.7	53.3	0.0		1.7	98.2	0.1		97.6	2.3	0.1		
Total %	0.4	0.4	0.0	0.8	0.8	47.9	0.1	48.8	49.2	1.2	0.1	50.4	
Exiting Leg Total				36				901				876	1813

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

8:00 AM	Bartlett Crescent from North				Washington Street from East				Washington Street from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Total
8:00 AM	3	3	0	6	4	136	0	140	111	3	0	114	260
8:15 AM	0	1	0	1	2	134	0	136	86	4	0	90	227
8:30 AM	0	1	0	1	3	111	0	114	107	2	0	109	224
8:45 AM	1	0	0	1	1	123	1	125	118	2	0	120	246
Total Volume	4	5	0	9	10	504	1	515	422	11	0	433	957
% Approach Total	44.4	55.6	0.0		1.9	97.9	0.2		97.5	2.5	0.0		
PHF	0.333	0.417	0.000	0.375	0.625	0.926	0.250	0.920	0.894	0.688	0.000	0.902	0.920
Entering Leg	4	5	0	9	10	504	1	515	422	11	0	433	957
Exiting Leg				21				428				508	957
Total				30				943				941	1914

PDI File #: **175958 D**
Location: **N: Bartlett Crescent**
Location: **E: Washington Street W: Washington Street**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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 (Combined-Large Trucks and Buses)**

	Bartlett Crescent from North				Washington Street from East				Washington Street from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Total
7:00 AM	0	0	0	0	0	9	0	9	7	0	0	7	16
7:15 AM	0	0	0	0	0	4	0	4	7	0	0	7	11
7:30 AM	0	0	0	0	0	4	0	4	7	0	0	7	11
7:45 AM	0	0	0	0	0	4	0	4	8	0	0	8	12
Total	0	0	0	0	0	21	0	21	29	0	0	29	50
8:00 AM	0	0	0	0	0	8	0	8	4	0	0	4	12
8:15 AM	0	0	0	0	0	4	0	4	5	0	0	5	9
8:30 AM	0	0	0	0	0	4	0	4	7	0	0	7	11
8:45 AM	0	0	0	0	0	3	0	3	7	0	0	7	10
Total	0	0	0	0	0	19	0	19	23	0	0	23	42
Grand Total	0	0	0	0	0	40	0	40	52	0	0	52	92
Approach %	0.0	0.0	0.0		0.0	100.0	0.0		100.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	43.5	0.0	43.5	56.5	0.0	0.0	56.5	
Exiting Leg Total				0				52				40	92
Large Trucks	0	0	0	0	0	15	0	15	19	0	0	19	34
% Large Trucks	0.0	0.0	0.0	0.0	0.0	37.5	0.0	37.5	36.5	0.0	0.0	36.5	37.0
Exiting Leg Total				0				19				15	34
Buses	0	0	0	0	0	25	0	25	33	0	0	33	58
% Buses	0.0	0.0	0.0	0.0	0.0	62.5	0.0	62.5	63.5	0.0	0.0	63.5	63.0
Exiting Leg Total				0				33				25	58

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

7:00 AM	Bartlett Crescent from North				Washington Street from East				Washington Street from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Total
7:00 AM	0	0	0	0	0	9	0	9	7	0	0	7	16
7:15 AM	0	0	0	0	0	4	0	4	7	0	0	7	11
7:30 AM	0	0	0	0	0	4	0	4	7	0	0	7	11
7:45 AM	0	0	0	0	0	4	0	4	8	0	0	8	12
Total Volume	0	0	0	0	0	21	0	21	29	0	0	29	50
% Approach Total	0.0	0.0	0.0		0.0	100.0	0.0		100.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.583	0.000	0.583	0.906	0.000	0.000	0.906	0.781
Large Trucks	0	0	0	0	0	9	0	9	10	0	0	10	19
Large Trucks %	0.0	0.0	0.0	0.0	0.0	42.9	0.0	42.9	34.5	0.0	0.0	34.5	38.0
Buses	0	0	0	0	0	12	0	12	19	0	0	19	31
Buses %	0.0	0.0	0.0	0.0	0.0	57.1	0.0	57.1	65.5	0.0	0.0	65.5	62.0
Trucks Enter Leg	0	0	0	0	0	9	0	9	10	0	0	10	19
Bus Enter Leg	0	0	0	0	0	12	0	12	19	0	0	19	31
Total Entering Leg	0	0	0	0	0	21	0	21	29	0	0	29	50
Trucks Exiting Leg				0				10				9	19
Buses Exiting Leg				0				19				12	31
Total Exiting Leg				0				29				21	50

PDI File #: **175958 D**
Location: **N: Bartlett Crescent**
Location: **E: Washington Street W: Washington Street**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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

Large Trucks

	Bartlett Crescent from North				Washington Street from East				Washington Street from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Total
7:00 AM	0	0	0	0	0	2	0	2	3	0	0	3	5
7:15 AM	0	0	0	0	0	2	0	2	2	0	0	2	4
7:30 AM	0	0	0	0	0	3	0	3	3	0	0	3	6
7:45 AM	0	0	0	0	0	2	0	2	2	0	0	2	4
Total	0	0	0	0	0	9	0	9	10	0	0	10	19
8:00 AM	0	0	0	0	0	1	0	1	2	0	0	2	3
8:15 AM	0	0	0	0	0	0	0	0	3	0	0	3	3
8:30 AM	0	0	0	0	0	2	0	2	1	0	0	1	3
8:45 AM	0	0	0	0	0	3	0	3	3	0	0	3	6
Total	0	0	0	0	0	6	0	6	9	0	0	9	15
Grand Total	0	0	0	0	0	15	0	15	19	0	0	19	34
Approach %	0.0	0.0	0.0		0.0	100.0	0.0		100.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	44.1	0.0	44.1	55.9	0.0	0.0	55.9	
Exiting Leg Total				0				19				15	34

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

7:00 AM	Bartlett Crescent from North				Washington Street from East				Washington Street from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Total
7:00 AM	0	0	0	0	0	2	0	2	3	0	0	3	5
7:15 AM	0	0	0	0	0	2	0	2	2	0	0	2	4
7:30 AM	0	0	0	0	0	3	0	3	3	0	0	3	6
7:45 AM	0	0	0	0	0	2	0	2	2	0	0	2	4
Total Volume	0	0	0	0	0	9	0	9	10	0	0	10	19
% Approach Total	0.0	0.0	0.0		0.0	100.0	0.0		100.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.750	0.000	0.750	0.833	0.000	0.000	0.833	0.792
Entering Leg	0	0	0	0	0	9	0	9	10	0	0	10	19
Exiting Leg				0				10				9	19
Total				0				19				19	38

PDI File #: **175958 D**
Location: **N: Bartlett Crescent**
Location: **E: Washington Street W: Washington Street**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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

	Bartlett Crescent from North				Washington Street from East				Washington Street from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Total
7:00 AM	0	0	0	0	0	7	0	7	4	0	0	4	11
7:15 AM	0	0	0	0	0	2	0	2	5	0	0	5	7
7:30 AM	0	0	0	0	0	1	0	1	4	0	0	4	5
7:45 AM	0	0	0	0	0	2	0	2	6	0	0	6	8
Total	0	0	0	0	0	12	0	12	19	0	0	19	31
8:00 AM	0	0	0	0	0	7	0	7	2	0	0	2	9
8:15 AM	0	0	0	0	0	4	0	4	2	0	0	2	6
8:30 AM	0	0	0	0	0	2	0	2	6	0	0	6	8
8:45 AM	0	0	0	0	0	0	0	0	4	0	0	4	4
Total	0	0	0	0	0	13	0	13	14	0	0	14	27
Grand Total	0	0	0	0	0	25	0	25	33	0	0	33	58
Approach %	0.0	0.0	0.0		0.0	100.0	0.0		100.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	43.1	0.0	43.1	56.9	0.0	0.0	56.9	
Exiting Leg Total				0				33				25	58

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

7:00 AM	Bartlett Crescent from North				Washington Street from East				Washington Street from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Total
7:00 AM	0	0	0	0	0	7	0	7	4	0	0	4	11
7:15 AM	0	0	0	0	0	2	0	2	5	0	0	5	7
7:30 AM	0	0	0	0	0	1	0	1	4	0	0	4	5
7:45 AM	0	0	0	0	0	2	0	2	6	0	0	6	8
Total Volume	0	0	0	0	0	12	0	12	19	0	0	19	31
% Approach Total	0.0	0.0	0.0		0.0	100.0	0.0		100.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.429	0.000	0.429	0.792	0.000	0.000	0.792	0.705
Entering Leg	0	0	0	0	0	12	0	12	19	0	0	19	31
Exiting Leg				0				19				12	31
Total				0				31				31	62

PDI File #: **175958 D**
Location: **N: Bartlett Crescent**
Location: **E: Washington Street W: Washington Street**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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)

	Bartlett Crescent from North						Washington Street from East						Washington Street from West						
	Right	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
7:00 AM	0	0	0	1	0	1	0	0	0	0	0	0	1	0	0	0	0	1	2
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
7:30 AM	0	0	0	0	0	0	0	3	0	0	0	3	4	0	0	0	0	4	7
7:45 AM	0	0	0	0	0	0	0	2	0	0	0	2	3	0	0	0	0	3	5
Total	0	0	0	1	0	1	0	5	0	0	0	5	10	0	0	0	0	10	16
8:00 AM	1	0	0	0	0	1	0	3	0	0	0	3	3	0	0	0	0	3	7
8:15 AM	0	0	0	0	0	0	0	1	0	0	0	1	5	0	0	0	0	5	6
8:30 AM	0	0	0	0	0	0	0	2	0	0	0	2	2	0	0	0	0	2	4
8:45 AM	0	0	0	0	0	0	0	2	0	0	0	2	2	0	0	0	0	2	4
Total	1	0	0	0	0	1	0	8	0	0	0	8	12	0	0	0	0	12	21
Grand Total	1	0	0	1	0	2	0	13	0	0	0	13	22	0	0	0	0	22	37
Approach %	50.0	0.0	0.0	50.0	0.0		0.0	100.0	0.0	0.0	0.0		100.0	0.0	0.0	0.0	0.0		
Total %	2.7	0.0	0.0	2.7	0.0	5.4	0.0	35.1	0.0	0.0	0.0	35.1	59.5	0.0	0.0	0.0	0.0	59.5	
Exiting Leg Total						1						22						14	37

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

7:30 AM	Bartlett Crescent from North						Washington Street from East						Washington Street from West						
	Right	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
7:30 AM	0	0	0	0	0	0	0	3	0	0	0	3	4	0	0	0	0	4	7
7:45 AM	0	0	0	0	0	0	0	2	0	0	0	2	3	0	0	0	0	3	5
8:00 AM	1	0	0	0	0	1	0	3	0	0	0	3	3	0	0	0	0	3	7
8:15 AM	0	0	0	0	0	0	0	1	0	0	0	1	5	0	0	0	0	5	6
Total Volume	1	0	0	0	0	1	0	9	0	0	0	9	15	0	0	0	0	15	25
% Approach Total	100.0	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		
PHF	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.750	0.000	0.000	0.000	0.750	0.750	0.000	0.000	0.000	0.000	0.750	0.893
Entering Leg	1	0	0	0	0	1	0	9	0	0	0	9	15	0	0	0	0	15	25
Exiting Leg						0						15						10	25
Total						1						24						25	50

PDI File #: **175958 D**
Location: **N: Bartlett Crescent**
Location: **E: Washington Street W: Washington Street**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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

	Bartlett Crescent from North						Washington Street from East						Washington Street from West						
	Right	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
7:00 AM	0	0	0	2	5	7	0	0	0	0	0	0	0	0	0	0	0	0	7
7:15 AM	0	0	0	2	7	9	0	0	0	1	0	1	0	0	0	0	0	0	10
7:30 AM	0	0	0	8	5	13	0	0	0	0	0	0	0	0	0	0	0	0	13
7:45 AM	0	0	0	1	6	7	0	0	0	1	0	1	0	0	0	0	0	0	8
Total	0	0	0	13	23	36	0	0	0	2	0	2	0	0	0	0	0	0	38
8:00 AM	0	0	0	0	8	8	0	0	0	0	0	0	0	0	0	0	0	0	8
8:15 AM	0	0	0	1	11	12	0	0	0	0	0	0	0	0	0	0	0	0	12
8:30 AM	0	0	0	2	11	13	0	0	0	0	0	0	0	0	0	0	0	0	13
8:45 AM	0	0	0	0	7	7	0	0	0	0	0	0	0	0	0	0	0	0	7
Total	0	0	0	3	37	40	0	0	0	0	0	0	0	0	0	0	0	0	40
Grand Total	0	0	0	16	60	76	0	0	0	2	0	2	0	0	0	0	0	0	78
Approach %	0.0	0.0	0.0	21.1	78.9		0.0	0.0	0.0	100.0	0.0		0.0	0.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	20.5	76.9	97.4	0.0	0.0	0.0	2.6	0.0	2.6	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total						76						2						0	78

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

7:30 AM	Bartlett Crescent from North						Washington Street from East						Washington Street from West						
	Right	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
7:30 AM	0	0	0	8	5	13	0	0	0	0	0	0	0	0	0	0	0	0	13
7:45 AM	0	0	0	1	6	7	0	0	0	1	0	1	0	0	0	0	0	0	8
8:00 AM	0	0	0	0	8	8	0	0	0	0	0	0	0	0	0	0	0	0	8
8:15 AM	0	0	0	1	11	12	0	0	0	0	0	0	0	0	0	0	0	0	12
Total Volume	0	0	0	10	30	40	0	0	0	1	0	1	0	0	0	0	0	0	41
% Approach Total	0.0	0.0	0.0	25.0	75.0		0.0	0.0	0.0	100.0	0.0		0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.313	0.682	0.769	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.788
Entering Leg	0	0	0	10	30	40	0	0	0	1	0	1	0	0	0	0	0	0	41
Exiting Leg						40						1						0	41
Total						80						2						0	82

PDI File #: **175958 DD**
Location: **N: Bartlett Crescent**
Location: **E: Washington Street W: Washington Street**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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 and Heavy Vehicles (Combined)

	Bartlett Crescent from North				Washington Street from East				Washington Street from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Total
4:00 PM	0	1	0	1	4	111	0	115	125	2	0	127	243
4:15 PM	0	1	0	1	7	120	0	127	117	1	0	118	246
4:30 PM	0	0	0	0	7	124	0	131	107	0	0	107	238
4:45 PM	1	1	0	2	1	112	0	113	115	2	1	118	233
Total	1	3	0	4	19	467	0	486	464	5	1	470	960
5:00 PM	1	2	0	3	2	108	0	110	137	6	1	144	257
5:15 PM	0	0	0	0	2	103	0	105	128	1	0	129	234
5:30 PM	0	1	0	1	1	126	0	127	113	6	0	119	247
5:45 PM	1	3	0	4	6	105	0	111	124	2	0	126	241
Total	2	6	0	8	11	442	0	453	502	15	1	518	979
Grand Total	3	9	0	12	30	909	0	939	966	20	2	988	1939
Approach %	25.0	75.0	0.0		3.2	96.8	0.0		97.8	2.0	0.2		
Total %	0.2	0.5	0.0	0.6	1.5	46.9	0.0	48.4	49.8	1.0	0.1	51.0	
Exiting Leg Total				50				975				914	1939
Cars	3	9	0	12	30	874	0	904	938	20	2	960	1876
% Cars	100.0	100.0	0.0	100.0	100.0	96.1	0.0	96.3	97.1	100.0	100.0	97.2	96.8
Exiting Leg Total				50				947				879	1876
Heavy Vehicles	0	0	0	0	0	35	0	35	28	0	0	28	63
% Heavy Vehicles	0.0	0.0	0.0	0.0	0.0	3.9	0.0	3.7	2.9	0.0	0.0	2.8	3.2
Exiting Leg Total				0				28				35	63

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

5:00 PM	Bartlett Crescent from North				Washington Street from East				Washington Street from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Total
5:00 PM	1	2	0	3	2	108	0	110	137	6	1	144	257
5:15 PM	0	0	0	0	2	103	0	105	128	1	0	129	234
5:30 PM	0	1	0	1	1	126	0	127	113	6	0	119	247
5:45 PM	1	3	0	4	6	105	0	111	124	2	0	126	241
Total Volume	2	6	0	8	11	442	0	453	502	15	1	518	979
% Approach Total	25.0	75.0	0.0		2.4	97.6	0.0		96.9	2.9	0.2		
PHF	0.500	0.500	0.000	0.500	0.458	0.877	0.000	0.892	0.916	0.625	0.250	0.899	0.952
Cars	2	6	0	8	11	422	0	433	489	15	1	505	946
Cars %	100.0	100.0	0.0	100.0	100.0	95.5	0.0	95.6	97.4	100.0	100.0	97.5	96.6
Heavy Vehicles	0	0	0	0	0	20	0	20	13	0	0	13	33
Heavy Vehicles %	0.0	0.0	0.0	0.0	0.0	4.5	0.0	4.4	2.6	0.0	0.0	2.5	3.4
Cars Enter Leg	2	6	0	8	11	422	0	433	489	15	1	505	946
Heavy Enter Leg	0	0	0	0	0	20	0	20	13	0	0	13	33
Total Entering Leg	2	6	0	8	11	442	0	453	502	15	1	518	979
Cars Exiting Leg				26				495				425	946
Heavy Exiting Leg				0				13				20	33
Total Exiting Leg				26				508				445	979

PDI File #: **175958 DD**
Location: **N: Bartlett Crescent**
Location: **E: Washington Street W: Washington Street**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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**

	Bartlett Crescent from North				Washington Street from East				Washington Street from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Total
4:00 PM	0	1	0	1	4	106	0	110	119	2	0	121	232
4:15 PM	0	1	0	1	7	116	0	123	111	1	0	112	236
4:30 PM	0	0	0	0	7	122	0	129	106	0	0	106	235
4:45 PM	1	1	0	2	1	108	0	109	113	2	1	116	227
Total	1	3	0	4	19	452	0	471	449	5	1	455	930
5:00 PM	1	2	0	3	2	104	0	106	134	6	1	141	250
5:15 PM	0	0	0	0	2	95	0	97	123	1	0	124	221
5:30 PM	0	1	0	1	1	122	0	123	110	6	0	116	240
5:45 PM	1	3	0	4	6	101	0	107	122	2	0	124	235
Total	2	6	0	8	11	422	0	433	489	15	1	505	946
Grand Total	3	9	0	12	30	874	0	904	938	20	2	960	1876
Approach %	25.0	75.0	0.0		3.3	96.7	0.0		97.7	2.1	0.2		
Total %	0.2	0.5	0.0	0.6	1.6	46.6	0.0	48.2	50.0	1.1	0.1	51.2	
Exiting Leg Total				50				947				879	1876

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

4:15 PM	Bartlett Crescent from North				Washington Street from East				Washington Street from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Total
4:15 PM	0	1	0	1	7	116	0	123	111	1	0	112	236
4:30 PM	0	0	0	0	7	122	0	129	106	0	0	106	235
4:45 PM	1	1	0	2	1	108	0	109	113	2	1	116	227
5:00 PM	1	2	0	3	2	104	0	106	134	6	1	141	250
Total Volume	2	4	0	6	17	450	0	467	464	9	2	475	948
% Approach Total	33.3	66.7	0.0		3.6	96.4	0.0		97.7	1.9	0.4		
PHF	0.500	0.500	0.000	0.500	0.607	0.922	0.000	0.905	0.866	0.375	0.500	0.842	0.948
Entering Leg	2	4	0	6	17	450	0	467	464	9	2	475	948
Exiting Leg				26				468				454	948
Total				32				935				929	1896

PDI File #: **175958 DD**
Location: **N: Bartlett Crescent**
Location: **E: Washington Street W: Washington Street**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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 (Combined-Large Trucks and Buses)**

	Bartlett Crescent from North				Washington Street from East				Washington Street from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Total
4:00 PM	0	0	0	0	0	5	0	5	6	0	0	6	11
4:15 PM	0	0	0	0	0	4	0	4	6	0	0	6	10
4:30 PM	0	0	0	0	0	2	0	2	1	0	0	1	3
4:45 PM	0	0	0	0	0	4	0	4	2	0	0	2	6
Total	0	0	0	0	0	15	0	15	15	0	0	15	30
5:00 PM	0	0	0	0	0	4	0	4	3	0	0	3	7
5:15 PM	0	0	0	0	0	8	0	8	5	0	0	5	13
5:30 PM	0	0	0	0	0	4	0	4	3	0	0	3	7
5:45 PM	0	0	0	0	0	4	0	4	2	0	0	2	6
Total	0	0	0	0	0	20	0	20	13	0	0	13	33
Grand Total	0	0	0	0	0	35	0	35	28	0	0	28	63
Approach %	0.0	0.0	0.0		0.0	100.0	0.0		100.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	55.6	0.0	55.6	44.4	0.0	0.0	44.4	
Exiting Leg Total				0				28				35	63
Large Trucks	0	0	0	0	0	10	0	10	9	0	0	9	19
% Large Trucks	0.0	0.0	0.0	0.0	0.0	28.6	0.0	28.6	32.1	0.0	0.0	32.1	30.2
Exiting Leg Total				0				9				10	19
Buses	0	0	0	0	0	25	0	25	19	0	0	19	44
% Buses	0.0	0.0	0.0	0.0	0.0	71.4	0.0	71.4	67.9	0.0	0.0	67.9	69.8
Exiting Leg Total				0				19				25	44

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

4:45 PM	Bartlett Crescent from North				Washington Street from East				Washington Street from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Total
4:45 PM	0	0	0	0	0	4	0	4	2	0	0	2	6
5:00 PM	0	0	0	0	0	4	0	4	3	0	0	3	7
5:15 PM	0	0	0	0	0	8	0	8	5	0	0	5	13
5:30 PM	0	0	0	0	0	4	0	4	3	0	0	3	7
Total Volume	0	0	0	0	0	20	0	20	13	0	0	13	33
% Approach Total	0.0	0.0	0.0		0.0	100.0	0.0		100.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.625	0.000	0.625	0.650	0.000	0.000	0.650	0.635
Large Trucks	0	0	0	0	0	6	0	6	4	0	0	4	10
Large Trucks %	0.0	0.0	0.0	0.0	0.0	30.0	0.0	30.0	30.8	0.0	0.0	30.8	30.3
Buses	0	0	0	0	0	14	0	14	9	0	0	9	23
Buses %	0.0	0.0	0.0	0.0	0.0	70.0	0.0	70.0	69.2	0.0	0.0	69.2	69.7
Trucks Enter Leg	0	0	0	0	0	6	0	6	4	0	0	4	10
Bus Enter Leg	0	0	0	0	0	14	0	14	9	0	0	9	23
Total Entering Leg	0	0	0	0	0	20	0	20	13	0	0	13	33
Trucks Exiting Leg				0				4				6	10
Buses Exiting Leg				0				9				14	23
Total Exiting Leg				0				13				20	33

PDI File #: **175958 DD**
Location: **N: Bartlett Crescent**
Location: **E: Washington Street W: Washington Street**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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: **Large Trucks**

	Bartlett Crescent from North				Washington Street from East				Washington Street from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Total
4:00 PM	0	0	0	0	0	0	0	0	2	0	0	2	2
4:15 PM	0	0	0	0	0	0	0	0	3	0	0	3	3
4:30 PM	0	0	0	0	0	1	0	1	0	0	0	0	1
4:45 PM	0	0	0	0	0	2	0	2	0	0	0	0	2
Total	0	0	0	0	0	3	0	3	5	0	0	5	8
5:00 PM	0	0	0	0	0	1	0	1	1	0	0	1	2
5:15 PM	0	0	0	0	0	2	0	2	2	0	0	2	4
5:30 PM	0	0	0	0	0	1	0	1	1	0	0	1	2
5:45 PM	0	0	0	0	0	3	0	3	0	0	0	0	3
Total	0	0	0	0	0	7	0	7	4	0	0	4	11
Grand Total	0	0	0	0	0	10	0	10	9	0	0	9	19
Approach %	0.0	0.0	0.0		0.0	100.0	0.0		100.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	52.6	0.0	52.6	47.4	0.0	0.0	47.4	
Exiting Leg Total				0				9				10	19

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

5:00 PM	Bartlett Crescent from North				Washington Street from East				Washington Street from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Total
5:00 PM	0	0	0	0	0	1	0	1	1	0	0	1	2
5:15 PM	0	0	0	0	0	2	0	2	2	0	0	2	4
5:30 PM	0	0	0	0	0	1	0	1	1	0	0	1	2
5:45 PM	0	0	0	0	0	3	0	3	0	0	0	0	3
Total Volume	0	0	0	0	0	7	0	7	4	0	0	4	11
% Approach Total	0.0	0.0	0.0		0.0	100.0	0.0		100.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.583	0.000	0.583	0.500	0.000	0.000	0.500	0.688
Entering Leg	0	0	0	0	0	7	0	7	4	0	0	4	11
Exiting Leg				0				4				7	11
Total				0				11				11	22

PDI File #: **175958 DD**
Location: **N: Bartlett Crescent**
Location: **E: Washington Street W: Washington Street**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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

	Bartlett Crescent from North				Washington Street from East				Washington Street from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Total
4:00 PM	0	0	0	0	0	5	0	5	4	0	0	4	9
4:15 PM	0	0	0	0	0	4	0	4	3	0	0	3	7
4:30 PM	0	0	0	0	0	1	0	1	1	0	0	1	2
4:45 PM	0	0	0	0	0	2	0	2	2	0	0	2	4
Total	0	0	0	0	0	12	0	12	10	0	0	10	22
5:00 PM	0	0	0	0	0	3	0	3	2	0	0	2	5
5:15 PM	0	0	0	0	0	6	0	6	3	0	0	3	9
5:30 PM	0	0	0	0	0	3	0	3	2	0	0	2	5
5:45 PM	0	0	0	0	0	1	0	1	2	0	0	2	3
Total	0	0	0	0	0	13	0	13	9	0	0	9	22
Grand Total	0	0	0	0	0	25	0	25	19	0	0	19	44
Approach %	0.0	0.0	0.0		0.0	100.0	0.0		100.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	56.8	0.0	56.8	43.2	0.0	0.0	43.2	
Exiting Leg Total				0				19				25	44

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

4:00 PM	Bartlett Crescent from North				Washington Street from East				Washington Street from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Total
4:00 PM	0	0	0	0	0	5	0	5	4	0	0	4	9
4:15 PM	0	0	0	0	0	4	0	4	3	0	0	3	7
4:30 PM	0	0	0	0	0	1	0	1	1	0	0	1	2
4:45 PM	0	0	0	0	0	2	0	2	2	0	0	2	4
Total Volume	0	0	0	0	0	12	0	12	10	0	0	10	22
% Approach Total	0.0	0.0	0.0		0.0	100.0	0.0		100.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.600	0.000	0.600	0.625	0.000	0.000	0.625	0.611
Entering Leg	0	0	0	0	0	12	0	12	10	0	0	10	22
Exiting Leg				0				10				12	22
Total				0				22				22	44

PDI File #: **175958 DD**
Location: **N: Bartlett Crescent**
Location: **E: Washington Street W: Washington Street**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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)

	Bartlett Crescent from North						Washington Street from East						Washington Street from West						
	Right	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
4:00 PM	1	0	0	0	0	1	0	1	0	0	0	1	1	1	0	0	0	2	4
4:15 PM	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	2
4:30 PM	0	0	0	0	0	0	0	3	0	0	0	3	3	0	0	0	0	3	6
4:45 PM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1
Total	1	0	0	0	0	1	0	7	0	0	0	7	4	1	0	0	0	5	13
5:00 PM	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	1	2
5:15 PM	0	0	0	0	0	0	0	6	0	0	0	6	4	0	0	0	0	4	10
5:30 PM	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	3
5:45 PM	0	0	0	0	0	0	0	3	0	0	0	3	3	0	0	0	0	3	6
Total	0	0	0	0	0	0	0	13	0	0	0	13	8	0	0	0	0	8	21
Grand Total	1	0	0	0	0	1	0	20	0	0	0	20	12	1	0	0	0	13	34
Approach %	100.0	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0		92.3	7.7	0.0	0.0	0.0		
Total %	2.9	0.0	0.0	0.0	0.0	2.9	0.0	58.8	0.0	0.0	0.0	58.8	35.3	2.9	0.0	0.0	0.0	38.2	
Exiting Leg Total						1						12						21	34

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

4:00 PM	Bartlett Crescent from North						Washington Street from East						Washington Street from West						
	Right	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
4:00 PM	1	0	0	0	0	1	0	1	0	0	0	1	1	1	0	0	0	2	4
4:15 PM	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	2
4:30 PM	0	0	0	0	0	0	0	3	0	0	0	3	3	0	0	0	0	3	6
4:45 PM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1
Total Volume	1	0	0	0	0	1	0	7	0	0	0	7	4	1	0	0	0	5	13
% Approach Total	100.0	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0		80.0	20.0	0.0	0.0	0.0		
PHF	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.583	0.000	0.000	0.000	0.583	0.333	0.250	0.000	0.000	0.000	0.417	0.542
Entering Leg	1	0	0	0	0	1	0	7	0	0	0	7	4	1	0	0	0	5	13
Exiting Leg						1						4						8	13
Total						2						11						13	26

PDI File #: **175958 DD**
Location: **N: Bartlett Crescent**
Location: **E: Washington Street W: Washington Street**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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

	Bartlett Crescent from North						Washington Street from East						Washington Street from West						
	Right	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
4:00 PM	0	0	0	2	3	5	0	0	0	0	0	0	0	0	0	0	0	0	5
4:15 PM	0	0	0	5	10	15	0	0	0	1	0	1	0	0	0	0	0	0	16
4:30 PM	0	0	0	6	3	9	0	0	0	1	0	1	0	0	0	0	1	1	11
4:45 PM	0	0	0	2	6	8	0	0	0	0	0	0	0	0	0	0	0	0	8
Total	0	0	0	15	22	37	0	0	0	2	0	2	0	0	0	0	1	1	40
5:00 PM	0	0	0	5	6	11	0	0	0	0	0	0	0	0	0	0	0	0	11
5:15 PM	0	0	0	15	5	20	0	0	0	0	0	0	0	0	0	0	0	0	20
5:30 PM	0	0	0	13	6	19	0	0	0	0	0	0	0	0	0	0	0	0	19
5:45 PM	0	0	0	8	7	15	0	0	0	0	0	0	0	0	0	0	0	0	15
Total	0	0	0	41	24	65	0	0	0	0	0	0	0	0	0	0	0	0	65
Grand Total	0	0	0	56	46	102	0	0	0	2	0	2	0	0	0	0	1	1	105
Approach %	0.0	0.0	0.0	54.9	45.1		0.0	0.0	0.0	100.0	0.0		0.0	0.0	0.0	0.0	100.0		
Total %	0.0	0.0	0.0	53.3	43.8	97.1	0.0	0.0	0.0	1.9	0.0	1.9	0.0	0.0	0.0	0.0	1.0	1.0	
Exiting Leg Total						102						2						1	105

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

5:00 PM	Bartlett Crescent from North						Washington Street from East						Washington Street from West						
	Right	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
5:00 PM	0	0	0	5	6	11	0	0	0	0	0	0	0	0	0	0	0	0	11
5:15 PM	0	0	0	15	5	20	0	0	0	0	0	0	0	0	0	0	0	0	20
5:30 PM	0	0	0	13	6	19	0	0	0	0	0	0	0	0	0	0	0	0	19
5:45 PM	0	0	0	8	7	15	0	0	0	0	0	0	0	0	0	0	0	0	15
Total Volume	0	0	0	41	24	65	0	0	0	0	0	0	0	0	0	0	0	0	65
% Approach Total	0.0	0.0	0.0	63.1	36.9		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	0.683	0.857	0.813	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.813
Entering Leg	0	0	0	41	24	65	0	0	0	0	0	0	0	0	0	0	0	0	65
Exiting Leg						65						0						0	65
Total						130						0						0	130

PDI File #: **175958 E**
Location: **N: Corey Road S: Corey Road**
Location: **E: Summit Avenue W: Summit Avenue**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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 and Heavy Vehicles (Combined)

	Corey Road from North					Summit Avenue from East					Corey Road from South					Summit Avenue 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	25	2	0	27	5	5	8	0	18	4	55	11	0	70	8	2	4	0	14	129
7:15 AM	1	30	4	0	35	3	8	6	0	17	7	48	14	0	69	10	9	4	0	23	144
7:30 AM	1	44	0	0	45	1	12	9	0	22	6	66	14	0	86	11	7	4	0	22	175
7:45 AM	2	64	0	0	66	4	20	17	0	41	10	80	17	0	107	14	8	5	0	27	241
Total	4	163	6	0	173	13	45	40	0	98	27	249	56	0	332	43	26	17	0	86	689
8:00 AM	2	27	3	0	32	10	10	10	0	30	19	101	24	0	144	19	9	7	0	35	241
8:15 AM	3	29	1	0	33	5	11	4	0	20	15	85	17	0	117	10	12	12	0	34	204
8:30 AM	5	29	1	0	35	2	18	6	0	26	7	80	22	0	109	10	12	7	0	29	199
8:45 AM	3	22	1	0	26	4	9	6	0	19	11	90	18	0	119	6	8	4	0	18	182
Total	13	107	6	0	126	21	48	26	0	95	52	356	81	0	489	45	41	30	0	116	826
Grand Total	17	270	12	0	299	34	93	66	0	193	79	605	137	0	821	88	67	47	0	202	1515
Approach %	5.7	90.3	4.0	0.0		17.6	48.2	34.2	0.0		9.6	73.7	16.7	0.0		43.6	33.2	23.3	0.0		
Total %	1.1	17.8	0.8	0.0	19.7	2.2	6.1	4.4	0.0	12.7	5.2	39.9	9.0	0.0	54.2	5.8	4.4	3.1	0.0	13.3	
Exiting Leg Total					686					158					424					247	1515
Cars	17	265	12	0	294	34	93	65	0	192	78	600	135	0	813	86	65	46	0	197	1496
% Cars	100.0	98.1	100.0	0.0	98.3	100.0	100.0	98.5	0.0	99.5	98.7	99.2	98.5	0.0	99.0	97.7	97.0	97.9	0.0	97.5	98.7
Exiting Leg Total					680					155					416					245	1496
Heavy Vehicles	0	5	0	0	5	0	0	1	0	1	1	5	2	0	8	2	2	1	0	5	19
% Heavy Vehicles	0.0	1.9	0.0	0.0	1.7	0.0	0.0	1.5	0.0	0.5	1.3	0.8	1.5	0.0	1.0	2.3	3.0	2.1	0.0	2.5	1.3
Exiting Leg Total					6					3					8					2	19

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

7:45 AM	Corey Road from North					Summit Avenue from East					Corey Road from South					Summit Avenue 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	2	64	0	0	66	4	20	17	0	41	10	80	17	0	107	14	8	5	0	27	241
8:00 AM	2	27	3	0	32	10	10	10	0	30	19	101	24	0	144	19	9	7	0	35	241
8:15 AM	3	29	1	0	33	5	11	4	0	20	15	85	17	0	117	10	12	12	0	34	204
8:30 AM	5	29	1	0	35	2	18	6	0	26	7	80	22	0	109	10	12	7	0	29	199
Total Volume	12	149	5	0	166	21	59	37	0	117	51	346	80	0	477	53	41	31	0	125	885
% Approach Total	7.2	89.8	3.0	0.0		17.9	50.4	31.6	0.0		10.7	72.5	16.8	0.0		42.4	32.8	24.8	0.0		
PHF	0.600	0.582	0.417	0.000	0.629	0.525	0.738	0.544	0.000	0.713	0.671	0.856	0.833	0.000	0.828	0.697	0.854	0.646	0.000	0.893	0.918
Cars	12	147	5	0	164	21	59	37	0	117	50	342	78	0	470	52	40	30	0	122	873
Cars %	100.0	98.7	100.0	0.0	98.8	100.0	100.0	100.0	0.0	100.0	98.0	98.8	97.5	0.0	98.5	98.1	97.6	96.8	0.0	97.6	98.6
Heavy Vehicles	0	2	0	0	2	0	0	0	0	0	1	4	2	0	7	1	1	1	0	3	12
Heavy Vehicles %	0.0	1.3	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0	2.0	1.2	2.5	0.0	1.5	1.9	2.4	3.2	0.0	2.4	1.4
Cars Enter Leg	12	147	5	0	164	21	59	37	0	117	50	342	78	0	470	52	40	30	0	122	873
Heavy Enter Leg	0	2	0	0	2	0	0	0	0	0	1	4	2	0	7	1	1	1	0	3	12
Total Entering Leg	12	149	5	0	166	21	59	37	0	117	51	346	80	0	477	53	41	31	0	125	885
Cars Exiting Leg					393					95					236					149	873
Heavy Exiting Leg					5					2					3					2	12
Total Exiting Leg					398					97					239					151	885

PDI File #: **175958 E**
Location: **N: Corey Road S: Corey Road**
Location: **E: Summit Avenue W: Summit Avenue**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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

	Corey Road from North					Summit Avenue from East					Corey Road from South					Summit Avenue 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	24	2	0	26	5	5	7	0	17	4	55	11	0	70	7	2	4	0	13	126
7:15 AM	1	30	4	0	35	3	8	6	0	17	7	48	14	0	69	10	8	4	0	22	143
7:30 AM	1	42	0	0	43	1	12	9	0	22	6	66	14	0	86	11	7	4	0	22	173
7:45 AM	2	63	0	0	65	4	20	17	0	41	10	80	17	0	107	14	8	5	0	27	240
Total	4	159	6	0	169	13	45	39	0	97	27	249	56	0	332	42	25	17	0	84	682
8:00 AM	2	27	3	0	32	10	10	10	0	30	19	99	24	0	142	18	9	7	0	34	238
8:15 AM	3	29	1	0	33	5	11	4	0	20	15	83	17	0	115	10	12	11	0	33	201
8:30 AM	5	28	1	0	34	2	18	6	0	26	6	80	20	0	106	10	11	7	0	28	194
8:45 AM	3	22	1	0	26	4	9	6	0	19	11	89	18	0	118	6	8	4	0	18	181
Total	13	106	6	0	125	21	48	26	0	95	51	351	79	0	481	44	40	29	0	113	814
Grand Total	17	265	12	0	294	34	93	65	0	192	78	600	135	0	813	86	65	46	0	197	1496
Approach %	5.8	90.1	4.1	0.0		17.7	48.4	33.9	0.0		9.6	73.8	16.6	0.0		43.7	33.0	23.4	0.0		
Total %	1.1	17.7	0.8	0.0	19.7	2.3	6.2	4.3	0.0	12.8	5.2	40.1	9.0	0.0	54.3	5.7	4.3	3.1	0.0	13.2	
Exiting Leg Total					680					155					416					245	1496

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

7:45 AM	Corey Road from North					Summit Avenue from East					Corey Road from South					Summit Avenue 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	2	63	0	0	65	4	20	17	0	41	10	80	17	0	107	14	8	5	0	27	240
8:00 AM	2	27	3	0	32	10	10	10	0	30	19	99	24	0	142	18	9	7	0	34	238
8:15 AM	3	29	1	0	33	5	11	4	0	20	15	83	17	0	115	10	12	11	0	33	201
8:30 AM	5	28	1	0	34	2	18	6	0	26	6	80	20	0	106	10	11	7	0	28	194
Total Volume	12	147	5	0	164	21	59	37	0	117	50	342	78	0	470	52	40	30	0	122	873
% Approach Total	7.3	89.6	3.0	0.0		17.9	50.4	31.6	0.0		10.6	72.8	16.6	0.0		42.6	32.8	24.6	0.0		
PHF	0.600	0.583	0.417	0.000	0.631	0.525	0.738	0.544	0.000	0.713	0.658	0.864	0.813	0.000	0.827	0.722	0.833	0.682	0.000	0.897	0.909
Entering Leg	12	147	5	0	164	21	59	37	0	117	50	342	78	0	470	52	40	30	0	122	873
Exiting Leg					393					95					236					149	873
Total					557					212					706					271	1746

PDI File #: **175958 E**
Location: **N: Corey Road S: Corey Road**
Location: **E: Summit Avenue W: Summit Avenue**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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 (Combined-Large Trucks and Buses)

	Corey Road from North					Summit Avenue from East					Corey Road from South					Summit Avenue 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	1	0	0	1	0	0	1	0	1	0	0	0	0	0	1	0	0	0	1	3
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
7:30 AM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7:45 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	4	0	0	4	0	0	1	0	1	0	0	0	0	0	1	1	0	0	2	7
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	1	0	0	0	1	3
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	1	0	1	3
8:30 AM	0	1	0	0	1	0	0	0	0	0	1	0	2	0	3	0	1	0	0	1	5
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Total	0	1	0	0	1	0	0	0	0	0	1	5	2	0	8	1	1	1	0	3	12
Grand Total	0	5	0	0	5	0	0	1	0	1	1	5	2	0	8	2	2	1	0	5	19
Approach %	0.0	100.0	0.0	0.0		0.0	0.0	100.0	0.0		12.5	62.5	25.0	0.0		40.0	40.0	20.0	0.0		
Total %	0.0	26.3	0.0	0.0	26.3	0.0	0.0	5.3	0.0	5.3	5.3	26.3	10.5	0.0	42.1	10.5	10.5	5.3	0.0	26.3	
Exiting Leg Total					6					3					8					2	19
Large Trucks	0	4	0	0	4	0	0	0	0	0	1	4	2	0	7	1	2	1	0	4	15
% Large Trucks	0.0	80.0	0.0	0.0	80.0	0.0	0.0	0.0	0.0	0.0	100.0	80.0	100.0	0.0	87.5	50.0	100.0	100.0	0.0	80.0	78.9
Exiting Leg Total					5					3					5					2	15
Buses	0	1	0	0	1	0	0	1	0	1	0	1	0	0	1	1	0	0	0	1	4
% Buses	0.0	20.0	0.0	0.0	20.0	0.0	0.0	100.0	0.0	100.0	0.0	20.0	0.0	0.0	12.5	50.0	0.0	0.0	0.0	20.0	21.1
Exiting Leg Total					1					0					3					0	4

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

7:45 AM	Corey Road from North					Summit Avenue from East					Corey Road from South					Summit Avenue 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	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	1	0	0	0	1	3
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	1	0	1	3
8:30 AM	0	1	0	0	1	0	0	0	0	0	1	0	2	0	3	0	1	0	0	1	5
Total Volume	0	2	0	0	2	0	0	0	0	0	1	4	2	0	7	1	1	1	0	3	12
% Approach Total	0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		14.3	57.1	28.6	0.0		33.3	33.3	33.3	0.0		
PHF	0.000	0.500	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.250	0.500	0.250	0.000	0.583	0.250	0.250	0.250	0.000	0.750	0.600
Large Trucks	0	2	0	0	2	0	0	0	0	0	1	3	2	0	6	0	1	1	0	2	10
Large Trucks %	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	100.0	75.0	100.0	0.0	85.7	0.0	100.0	100.0	0.0	66.7	83.3
Buses	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	2
Buses %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.0	0.0	0.0	14.3	100.0	0.0	0.0	0.0	33.3	16.7
Trucks Enter Leg	0	2	0	0	2	0	0	0	0	0	1	3	2	0	6	0	1	1	0	2	10
Bus Enter Leg	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	2
Total Entering Leg	0	2	0	0	2	0	0	0	0	0	1	4	2	0	7	1	1	1	0	3	12
Trucks Exiting Leg					4					2					2					2	10
Buses Exiting Leg					1					0					1					0	2
Total Exiting Leg					5					2					3					2	12

PDI File #: **175958 E**
Location: **N: Corey Road S: Corey Road**
Location: **E: Summit Avenue W: Summit Avenue**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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

Large Trucks

	Corey Road from North					Summit Avenue from East					Corey Road from South					Summit Avenue 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	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	0	0	0	0	0	0	0	0	1	0	0	1	1
7:30 AM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7:45 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	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	0	0	2	0	0	1	0	1	3
8:30 AM	0	1	0	0	1	0	0	0	0	0	1	0	2	0	3	0	1	0	0	1	5
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Total	0	1	0	0	1	0	0	0	0	0	1	4	2	0	7	0	1	1	0	2	10
Grand Total	0	4	0	0	4	0	0	0	0	0	1	4	2	0	7	1	2	1	0	4	15
Approach %	0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		14.3	57.1	28.6	0.0		25.0	50.0	25.0	0.0		
Total %	0.0	26.7	0.0	0.0	26.7	0.0	0.0	0.0	0.0	0.0	6.7	26.7	13.3	0.0	46.7	6.7	13.3	6.7	0.0	26.7	
Exiting Leg Total					5					3					5					2	15

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

7:45 AM	Corey Road from North					Summit Avenue from East					Corey Road from South					Summit Avenue 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	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
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	0	0	2	0	0	1	0	1	3
8:30 AM	0	1	0	0	1	0	0	0	0	0	1	0	2	0	3	0	1	0	0	1	5
Total Volume	0	2	0	0	2	0	0	0	0	0	1	3	2	0	6	0	1	1	0	2	10
% Approach Total	0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		16.7	50.0	33.3	0.0		0.0	50.0	50.0	0.0		
PHF	0.000	0.500	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.250	0.375	0.250	0.000	0.500	0.000	0.250	0.250	0.000	0.500	0.500
Entering Leg	0	2	0	0	2	0	0	0	0	0	1	3	2	0	6	0	1	1	0	2	10
Exiting Leg					4					2					2					2	10
Total					6					2					8					4	20

PDI File #: **175958 E**
Location: **N: Corey Road S: Corey Road**
Location: **E: Summit Avenue W: Summit Avenue**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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

	Corey Road from North					Summit Avenue from East					Corey Road from South					Summit Avenue 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	1	0	0	1	0	0	1	0	1	0	0	0	0	0	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	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
Total	0	1	0	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	2
8:15 AM	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
8:45 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	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	2
Grand Total	0	1	0	0	1	0	0	1	0	1	0	1	0	0	1	1	0	0	0	1	4
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		100.0	0.0	0.0	0.0		
Total %	0.0	25.0	0.0	0.0	25.0	0.0	0.0	25.0	0.0	25.0	0.0	25.0	0.0	0.0	25.0	25.0	0.0	0.0	0.0	25.0	
Exiting Leg Total					1					0					3					0	4

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

7:00 AM	Corey Road from North					Summit Avenue from East					Corey Road from South					Summit Avenue 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	1	0	0	1	0	0	1	0	1	0	0	0	0	0	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	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
Total Volume	0	1	0	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2
% 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	0.0	0.0	0.0		
PHF	0.000	0.250	0.000	0.000	0.250	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	0.250
Entering Leg	0	1	0	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2
Exiting Leg					0					0					2					0	2
Total					1					1					2					0	4

PDI File #: **175958 E**
Location: **N: Corey Road S: Corey Road**
Location: **E: Summit Avenue W: Summit Avenue**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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)

	Corey Road from North							Summit Avenue from East							Corey Road from South							Summit Avenue 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	1	0	0	0	0	1	0	1	0	0	0	0	1	0	0	1	0	0	0	1	3
7:15 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
7:30 AM	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
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	1	0	0	0	0	1	0	2	0	0	0	0	2	0	1	0	0	0	0	1	0	0	1	0	0	0	1	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	1	0	0	0	1	1	1	0	0	0	0	2	0	1	0	0	0	0	1	1	0	1	0	0	0	2	6
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	0	0	0	0	0
8:45 AM	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	2
Total	0	1	1	0	0	0	2	1	1	0	0	0	0	2	0	1	0	0	0	0	1	2	0	1	0	0	0	3	8
Grand Total	0	2	1	0	0	0	3	1	3	0	0	0	0	4	0	2	0	0	0	0	2	2	0	2	0	0	0	4	13
Approach %	0.0	66.7	33.3	0.0	0.0	0.0		25.0	75.0	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	15.4	7.7	0.0	0.0	0.0	23.1	7.7	23.1	0.0	0.0	0.0	0.0	30.8	0.0	15.4	0.0	0.0	0.0	0.0	15.4	15.4	0.0	15.4	0.0	0.0	0.0	30.8	
Exiting Leg Total							5							1							4							3	13

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

8:00 AM	Corey Road from North							Summit Avenue from East							Corey Road from South							Summit Avenue 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	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	1	0	0	0	1	1	1	0	0	0	0	2	0	1	0	0	0	0	1	1	0	1	0	0	0	2	6
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	0	0	0	0	0
8:45 AM	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	2
Total Volume	0	1	1	0	0	0	2	1	1	0	0	0	0	2	0	1	0	0	0	0	1	2	0	1	0	0	0	3	8
% Approach Total	0.0	50.0	50.0	0.0	0.0	0.0		50.0	50.0	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0	0.0		66.7	0.0	33.3	0.0	0.0	0.0		
PHF	0.000	0.250	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	0.250	0.000	0.000	0.000	0.000	0.250	0.500	0.000	0.250	0.000	0.000	0.000	0.375	0.333
Entering Leg	0	1	1	0	0	0	2	1	1	0	0	0	0	2	0	1	0	0	0	0	1	2	0	1	0	0	0	3	8
Exiting Leg							3							1							3							1	8
Total							5							3							4							4	16

PDI File #: **175958 E**
Location: **N: Corey Road S: Corey Road**
Location: **E: Summit Avenue W: Summit Avenue**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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

	Corey Road from North							Summit Avenue from East							Corey Road from South							Summit Avenue 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	1	1	2	0	0	0	0	3	1	4	0	0	0	0	0	4	4	0	0	0	0	0	5	5	15
7:15 AM	0	0	0	0	1	0	1	0	0	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	3	2	5	9
7:30 AM	0	0	0	0	5	1	6	0	0	0	0	7	2	9	0	0	0	0	0	0	0	0	0	0	0	1	2	3	18
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	10	0	10	0	0	0	0	1	0	1	0	0	0	0	0	1	1	12
Total	0	0	0	0	7	2	9	0	0	0	0	23	3	26	0	0	0	0	1	4	5	0	0	0	0	4	10	14	54
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	5	3	8	0	0	0	0	0	2	2	0	0	0	0	0	1	1	11
8:15 AM	0	0	0	0	1	0	1	0	0	0	0	6	1	7	0	0	0	0	0	0	0	0	0	0	0	3	4	7	15
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	3	4	0	0	0	0	0	0	0	0	0	0	0	3	6	9	13
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	1	1	2	0	0	0	0	4	1	5	9
Total	0	0	0	0	1	0	1	0	0	0	0	14	7	21	0	0	0	0	1	3	4	0	0	0	0	10	12	22	48
Grand Total	0	0	0	0	8	2	10	0	0	0	0	37	10	47	0	0	0	0	2	7	9	0	0	0	0	14	22	36	102
Approach %	0.0	0.0	0.0	0.0	80.0	20.0		0.0	0.0	0.0	0.0	78.7	21.3		0.0	0.0	0.0	0.0	22.2	77.8		0.0	0.0	0.0	0.0	38.9	61.1		
Total %	0.0	0.0	0.0	0.0	7.8	2.0	9.8	0.0	0.0	0.0	0.0	36.3	9.8	46.1	0.0	0.0	0.0	0.0	2.0	6.9	8.8	0.0	0.0	0.0	0.0	13.7	21.6	35.3	
Exiting Leg Total							10							47							9							36	102

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

7:30 AM	Corey Road from North							Summit Avenue from East							Corey Road from South							Summit Avenue 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
7:30 AM	0	0	0	0	5	1	6	0	0	0	0	7	2	9	0	0	0	0	0	0	0	0	0	0	0	1	2	3	18
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	10	0	10	0	0	0	0	1	0	1	0	0	0	0	0	1	1	12
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	5	3	8	0	0	0	0	0	2	2	0	0	0	0	0	1	1	11
8:15 AM	0	0	0	0	1	0	1	0	0	0	0	6	1	7	0	0	0	0	0	0	0	0	0	0	0	3	4	7	15
Total Volume	0	0	0	0	6	1	7	0	0	0	0	28	6	34	0	0	0	0	1	2	3	0	0	0	0	4	8	12	56
% Approach Total	0.0	0.0	0.0	0.0	85.7	14.3		0.0	0.0	0.0	0.0	82.4	17.6		0.0	0.0	0.0	0.0	33.3	66.7		0.0	0.0	0.0	0.0	33.3	66.7		
PHF	0.000	0.000	0.000	0.000	0.300	0.250	0.292	0.000	0.000	0.000	0.000	0.700	0.500	0.850	0.000	0.000	0.000	0.000	0.250	0.250	0.375	0.000	0.000	0.000	0.000	0.333	0.500	0.429	0.778
Entering Leg	0	0	0	0	6	1	7	0	0	0	0	28	6	34	0	0	0	0	1	2	3	0	0	0	0	4	8	12	56
Exiting Leg							7							34							3							12	56
Total							14							68							6							24	112

PDI File #: **175958 EE**
Location: **N: Corey Road S: Corey Road**
Location: **E: Summit Avenue W: Summit Avenue**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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 and Heavy Vehicles (Combined)

	Corey Road from North					Summit Avenue from East					Corey Road from South					Summit Avenue 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	6	63	1	0	70	1	25	7	0	33	10	66	15	0	91	18	7	6	0	31	225
4:15 PM	2	34	1	0	37	2	18	9	0	29	8	59	19	0	86	7	9	4	0	20	172
4:30 PM	4	47	1	0	52	2	17	12	0	31	8	53	15	0	76	15	8	5	0	28	187
4:45 PM	4	49	2	0	55	2	30	15	0	47	13	54	17	0	84	24	10	6	0	40	226
Total	16	193	5	0	214	7	90	43	0	140	39	232	66	0	337	64	34	21	0	119	810
5:00 PM	2	51	1	0	54	1	30	9	0	40	12	60	17	0	89	26	16	2	0	44	227
5:15 PM	4	56	0	0	60	2	26	14	0	42	10	60	14	0	84	20	15	3	0	38	224
5:30 PM	4	59	2	0	65	2	24	11	0	37	17	74	19	0	110	13	16	6	0	35	247
5:45 PM	2	54	2	0	58	0	18	13	0	31	12	66	24	1	103	12	20	4	0	36	228
Total	12	220	5	0	237	5	98	47	0	150	51	260	74	1	386	71	67	15	0	153	926
Grand Total	28	413	10	0	451	12	188	90	0	290	90	492	140	1	723	135	101	36	0	272	1736
Approach %	6.2	91.6	2.2	0.0		4.1	64.8	31.0	0.0		12.4	68.0	19.4	0.1		49.6	37.1	13.2	0.0		
Total %	1.6	23.8	0.6	0.0	26.0	0.7	10.8	5.2	0.0	16.7	5.2	28.3	8.1	0.1	41.6	7.8	5.8	2.1	0.0	15.7	
Exiting Leg Total					540					201					639					356	1736
Cars	28	409	10	0	447	12	188	90	0	290	89	486	138	1	714	134	100	35	0	269	1720
% Cars	100.0	99.0	100.0	0.0	99.1	100.0	100.0	100.0	0.0	100.0	98.9	98.8	98.6	100.0	98.8	99.3	99.0	97.2	0.0	98.9	99.1
Exiting Leg Total					533					199					634					354	1720
Heavy Vehicles	0	4	0	0	4	0	0	0	0	0	1	6	2	0	9	1	1	1	0	3	16
% Heavy Vehicles	0.0	1.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	1.1	1.2	1.4	0.0	1.2	0.7	1.0	2.8	0.0	1.1	0.9
Exiting Leg Total					7					2					5					2	16

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

5:00 PM	Corey Road from North					Summit Avenue from East					Corey Road from South					Summit Avenue 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	2	51	1	0	54	1	30	9	0	40	12	60	17	0	89	26	16	2	0	44	227
5:15 PM	4	56	0	0	60	2	26	14	0	42	10	60	14	0	84	20	15	3	0	38	224
5:30 PM	4	59	2	0	65	2	24	11	0	37	17	74	19	0	110	13	16	6	0	35	247
5:45 PM	2	54	2	0	58	0	18	13	0	31	12	66	24	1	103	12	20	4	0	36	228
Total Volume	12	220	5	0	237	5	98	47	0	150	51	260	74	1	386	71	67	15	0	153	926
% Approach Total	5.1	92.8	2.1	0.0		3.3	65.3	31.3	0.0		13.2	67.4	19.2	0.3		46.4	43.8	9.8	0.0		
PHF	0.750	0.932	0.625	0.000	0.912	0.625	0.817	0.839	0.000	0.893	0.750	0.878	0.771	0.250	0.877	0.683	0.838	0.625	0.000	0.869	0.937
Cars	12	218	5	0	235	5	98	47	0	150	51	258	73	1	383	71	66	15	0	152	920
Cars %	100.0	99.1	100.0	0.0	99.2	100.0	100.0	100.0	0.0	100.0	100.0	99.2	98.6	100.0	99.2	100.0	98.5	100.0	0.0	99.3	99.4
Heavy Vehicles	0	2	0	0	2	0	0	0	0	0	0	2	1	0	3	0	1	0	0	1	6
Heavy Vehicles %	0.0	0.9	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.8	1.4	0.0	0.8	0.0	1.5	0.0	0.0	0.7	0.6
Cars Enter Leg	12	218	5	0	235	5	98	47	0	150	51	258	73	1	383	71	66	15	0	152	920
Heavy Enter Leg	0	2	0	0	2	0	0	0	0	0	0	2	1	0	3	0	1	0	0	1	6
Total Entering Leg	12	220	5	0	237	5	98	47	0	150	51	260	74	1	386	71	67	15	0	153	926
Cars Exiting Leg					278					122					337					183	920
Heavy Exiting Leg					2					1					2					1	6
Total Exiting Leg					280					123					339					184	926

PDI File #: **175958 EE**
Location: **N: Corey Road S: Corey Road**
Location: **E: Summit Avenue W: Summit Avenue**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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

	Corey Road from North					Summit Avenue from East					Corey Road from South					Summit Avenue 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	6	62	1	0	69	1	25	7	0	33	10	63	15	0	88	18	7	5	0	30	220
4:15 PM	2	34	1	0	37	2	18	9	0	29	8	59	18	0	85	7	9	4	0	20	171
4:30 PM	4	46	1	0	51	2	17	12	0	31	8	52	15	0	75	14	8	5	0	27	184
4:45 PM	4	49	2	0	55	2	30	15	0	47	12	54	17	0	83	24	10	6	0	40	225
Total	16	191	5	0	212	7	90	43	0	140	38	228	65	0	331	63	34	20	0	117	800
5:00 PM	2	50	1	0	53	1	30	9	0	40	12	60	17	0	89	26	16	2	0	44	226
5:15 PM	4	56	0	0	60	2	26	14	0	42	10	60	14	0	84	20	15	3	0	38	224
5:30 PM	4	58	2	0	64	2	24	11	0	37	17	73	19	0	109	13	15	6	0	34	244
5:45 PM	2	54	2	0	58	0	18	13	0	31	12	65	23	1	101	12	20	4	0	36	226
Total	12	218	5	0	235	5	98	47	0	150	51	258	73	1	383	71	66	15	0	152	920
Grand Total	28	409	10	0	447	12	188	90	0	290	89	486	138	1	714	134	100	35	0	269	1720
Approach %	6.3	91.5	2.2	0.0		4.1	64.8	31.0	0.0		12.5	68.1	19.3	0.1		49.8	37.2	13.0	0.0		
Total %	1.6	23.8	0.6	0.0	26.0	0.7	10.9	5.2	0.0	16.9	5.2	28.3	8.0	0.1	41.5	7.8	5.8	2.0	0.0	15.6	
Exiting Leg Total					533					199					634					354	1720

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

5:00 PM	Corey Road from North					Summit Avenue from East					Corey Road from South					Summit Avenue 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	2	50	1	0	53	1	30	9	0	40	12	60	17	0	89	26	16	2	0	44	226
5:15 PM	4	56	0	0	60	2	26	14	0	42	10	60	14	0	84	20	15	3	0	38	224
5:30 PM	4	58	2	0	64	2	24	11	0	37	17	73	19	0	109	13	15	6	0	34	244
5:45 PM	2	54	2	0	58	0	18	13	0	31	12	65	23	1	101	12	20	4	0	36	226
Total Volume	12	218	5	0	235	5	98	47	0	150	51	258	73	1	383	71	66	15	0	152	920
% Approach Total	5.1	92.8	2.1	0.0		3.3	65.3	31.3	0.0		13.3	67.4	19.1	0.3		46.7	43.4	9.9	0.0		
PHF	0.750	0.940	0.625	0.000	0.918	0.625	0.817	0.839	0.000	0.893	0.750	0.884	0.793	0.250	0.878	0.683	0.825	0.625	0.000	0.864	0.943
Entering Leg	12	218	5	0	235	5	98	47	0	150	51	258	73	1	383	71	66	15	0	152	920
Exiting Leg					278					122					337					183	920
Total					513					272					720					335	1840

PDI File #: **175958 EE**
Location: **N: Corey Road S: Corey Road**
Location: **E: Summit Avenue W: Summit Avenue**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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 (Combined-Large Trucks and Buses)

	Corey Road from North					Summit Avenue from East					Corey Road from South					Summit Avenue 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	3	0	0	3	0	0	1	0	1	5
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
4:30 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	3
4:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
Total	0	2	0	0	2	0	0	0	0	0	1	4	1	0	6	1	0	1	0	2	10
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	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	3
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	2
Total	0	2	0	0	2	0	0	0	0	0	0	2	1	0	3	0	1	0	0	1	6
Grand Total	0	4	0	0	4	0	0	0	0	0	1	6	2	0	9	1	1	1	0	3	16
Approach %	0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		11.1	66.7	22.2	0.0		33.3	33.3	33.3	0.0		
Total %	0.0	25.0	0.0	0.0	25.0	0.0	0.0	0.0	0.0	0.0	6.3	37.5	12.5	0.0	56.3	6.3	6.3	6.3	0.0	18.8	
Exiting Leg Total					7					2					5					2	16
Large Trucks	0	4	0	0	4	0	0	0	0	0	0	4	1	0	5	1	1	1	0	3	12
% Large Trucks	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	66.7	50.0	0.0	55.6	100.0	100.0	100.0	0.0	100.0	75.0
Exiting Leg Total					5					1					5					1	12
Buses	0	0	0	0	0	0	0	0	0	0	1	2	1	0	4	0	0	0	0	0	4
% Buses	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	33.3	50.0	0.0	44.4	0.0	0.0	0.0	0.0	0.0	25.0
Exiting Leg Total					2					1					0					1	4

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

4:00 PM	Corey Road from North					Summit Avenue from East					Corey Road from South					Summit Avenue 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	3	0	0	3	0	0	1	0	1	5
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
4:30 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	3
4:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
Total Volume	0	2	0	0	2	0	0	0	0	0	1	4	1	0	6	1	0	1	0	2	10
% Approach Total	0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		16.7	66.7	16.7	0.0		50.0	0.0	50.0	0.0		
PHF	0.000	0.500	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.250	0.333	0.250	0.000	0.500	0.250	0.000	0.250	0.000	0.500	0.500
Large Trucks	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	1	0	1	0	2	6
Large Trucks %	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	33.3	100.0	0.0	100.0	0.0	100.0	60.0
Buses	0	0	0	0	0	0	0	0	0	0	1	2	1	0	4	0	0	0	0	0	4
Buses %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	50.0	100.0	0.0	66.7	0.0	0.0	0.0	0.0	0.0	40.0
Trucks Enter Leg	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	1	0	1	0	2	6
Bus Enter Leg	0	0	0	0	0	0	0	0	0	0	1	2	1	0	4	0	0	0	0	0	4
Total Entering Leg	0	2	0	0	2	0	0	0	0	0	1	4	1	0	6	1	0	1	0	2	10
Trucks Exiting Leg					3					0					3					0	6
Buses Exiting Leg					2					1					0					1	4
Total Exiting Leg					5					1					3					1	10

PDI File #: **175958 EE**
Location: **N: Corey Road S: Corey Road**
Location: **E: Summit Avenue W: Summit Avenue**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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

Large Trucks

	Corey Road from North					Summit Avenue from East					Corey Road from South					Summit Avenue 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	2	0	0	2	0	0	1	0	1	4
4:15 PM	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	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	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	2	0	0	2	0	0	0	0	0	0	2	0	0	2	1	0	1	0	2	6
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	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	3
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	2
Total	0	2	0	0	2	0	0	0	0	0	0	2	1	0	3	0	1	0	0	1	6
Grand Total	0	4	0	0	4	0	0	0	0	0	0	4	1	0	5	1	1	1	0	3	12
Approach %	0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	80.0	20.0	0.0		33.3	33.3	33.3	0.0		
Total %	0.0	33.3	0.0	0.0	33.3	0.0	0.0	0.0	0.0	0.0	0.0	33.3	8.3	0.0	41.7	8.3	8.3	8.3	0.0	25.0	
Exiting Leg Total					5					1					5					1	12

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

4:00 PM	Corey Road from North					Summit Avenue from East					Corey Road from South					Summit Avenue 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	2	0	0	2	0	0	1	0	1	4
4:15 PM	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	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	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	2	0	0	2	0	0	0	0	0	0	2	0	0	2	1	0	1	0	2	6
% 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		50.0	0.0	50.0	0.0		
PHF	0.000	0.500	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.250	0.250	0.000	0.250	0.000	0.500	0.375
Entering Leg	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	1	0	1	0	2	6
Exiting Leg					3					0					3					0	6
Total					5					0					5					2	12

PDI File #: **175958 EE**
Location: **N: Corey Road S: Corey Road**
Location: **E: Summit Avenue W: Summit Avenue**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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**

	Corey Road from North					Summit Avenue from East					Corey Road from South					Summit Avenue 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	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	0	1	0	1	0	0	0	0	0	1
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	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	1	2	1	0	4	0	0	0	0	0	4
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	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	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	1	2	1	0	4	0	0	0	0	0	4
Approach %	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		25.0	50.0	25.0	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	0.0	0.0	0.0	25.0	50.0	25.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total					2					1					0					1	4

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

4:00 PM	Corey Road from North					Summit Avenue from East					Corey Road from South					Summit Avenue 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	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	0	1	0	1	0	0	0	0	0	1
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	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
Total Volume	0	0	0	0	0	0	0	0	0	0	1	2	1	0	4	0	0	0	0	0	4
% Approach Total	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		25.0	50.0	25.0	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	0.250	0.500	0.250	0.000	1.000	0.000	0.000	0.000	0.000	0.000	1.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	1	2	1	0	4	0	0	0	0	0	4
Exiting Leg					2					1					0					1	4
Total					2					1					4					1	8

PDI File #: **175958 EE**
Location: **N: Corey Road S: Corey Road**
Location: **E: Summit Avenue W: Summit Avenue**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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)

	Corey Road from North							Summit Avenue from East							Corey Road from South							Summit Avenue 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	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:15 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
4:30 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
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	1	0	0	0	0	1	1
Total	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	0	0	0	0	1	0	1	0	0	0	0	1	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	0	0	0	0	1	0	1	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	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	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	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	1	3
Grand Total	0	1	0	0	0	0	1	0	1	0	0	0	0	1	0	2	0	0	0	0	2	0	1	0	0	1	0	2	6
Approach %	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	0.0	0.0	0.0	0.0		0.0	50.0	0.0	0.0	50.0	0.0		
Total %	0.0	16.7	0.0	0.0	0.0	0.0	16.7	0.0	16.7	0.0	0.0	0.0	0.0	16.7	0.0	33.3	0.0	0.0	0.0	0.0	33.3	0.0	16.7	0.0	0.0	16.7	0.0	33.3	
Exiting Leg Total							2							1							1							2	6

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

4:00 PM	Corey Road from North							Summit Avenue from East							Corey Road from South							Summit Avenue 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	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:15 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
4:30 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
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	1	0	0	0	0	1	1
Total Volume	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	0	0	0	0	1	0	1	0	0	0	0	1	3
% 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	100.0	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	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.000	0.000	0.000	0.250	0.750
Entering Leg	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	0	0	0	0	1	0	1	0	0	0	0	1	3
Exiting Leg							1							1							0							1	3
Total							1							2							1							2	6

PDI File #: **175958 EE**
Location: **N: Corey Road S: Corey Road**
Location: **E: Summit Avenue W: Summit Avenue**
City, State: **Brighton, MA**
Client: **VHB/ C. Dube**
Site Code: **13399.00**
Count Date: **Wednesday, November 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

	Corey Road from North							Summit Avenue from East							Corey Road from South							Summit Avenue 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	1	0	1	0	0	0	0	1	0	1	0	0	0	0	1	0	1	0	0	0	0	3	3	6	9
4:15 PM	0	0	0	0	0	1	1	0	0	0	0	0	2	2	0	0	0	0	0	2	2	0	0	0	0	0	1	1	6
4:30 PM	0	0	0	0	0	1	1	0	0	0	0	2	5	7	0	0	0	0	2	1	3	0	0	0	0	2	2	4	15
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	2	2	4	0	0	0	0	2	1	3	0	0	0	0	1	1	2	9
Total	0	0	0	0	1	2	3	0	0	0	0	5	9	14	0	0	0	0	5	4	9	0	0	0	0	6	7	13	39
5:00 PM	0	0	0	0	2	1	3	0	0	0	0	2	2	4	0	0	0	0	2	1	3	0	0	0	0	1	4	5	15
5:15 PM	0	0	0	0	2	2	4	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2	3	5	10
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	9	10	0	0	0	0	0	3	3	0	0	0	0	8	5	13	26
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	2	2	4	0	0	0	0	1	1	2	0	0	0	0	5	5	10	16
Total	0	0	0	0	4	3	7	0	0	0	0	5	13	18	0	0	0	0	3	6	9	0	0	0	0	16	17	33	67
Grand Total	0	0	0	0	5	5	10	0	0	0	0	10	22	32	0	0	0	0	8	10	18	0	0	0	0	22	24	46	106
Approach %	0.0	0.0	0.0	0.0	50.0	50.0		0.0	0.0	0.0	0.0	31.3	68.8		0.0	0.0	0.0	0.0	44.4	55.6		0.0	0.0	0.0	0.0	47.8	52.2		
Total %	0.0	0.0	0.0	0.0	4.7	4.7	9.4	0.0	0.0	0.0	0.0	9.4	20.8	30.2	0.0	0.0	0.0	0.0	7.5	9.4	17.0	0.0	0.0	0.0	0.0	20.8	22.6	43.4	
Exiting Leg Total							10							32							18							46	106

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

5:00 PM	Corey Road from North							Summit Avenue from East							Corey Road from South							Summit Avenue 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	2	1	3	0	0	0	0	2	2	4	0	0	0	0	2	1	3	0	0	0	0	1	4	5	15
5:15 PM	0	0	0	0	2	2	4	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2	3	5	10
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	9	10	0	0	0	0	0	3	3	0	0	0	0	8	5	13	26
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	2	2	4	0	0	0	0	1	1	2	0	0	0	0	5	5	10	16
Total Volume	0	0	0	0	4	3	7	0	0	0	0	5	13	18	0	0	0	0	3	6	9	0	0	0	0	16	17	33	67
% Approach Total	0.0	0.0	0.0	0.0	57.1	42.9		0.0	0.0	0.0	0.0	27.8	72.2		0.0	0.0	0.0	0.0	33.3	66.7		0.0	0.0	0.0	0.0	48.5	51.5		
PHF	0.000	0.000	0.000	0.000	0.500	0.375	0.438	0.000	0.000	0.000	0.000	0.625	0.361	0.450	0.000	0.000	0.000	0.000	0.375	0.500	0.750	0.000	0.000	0.000	0.000	0.500	0.850	0.635	0.644
Entering Leg	0	0	0	0	4	3	7	0	0	0	0	5	13	18	0	0	0	0	3	6	9	0	0	0	0	16	17	33	67
Exiting Leg							7							18							9							33	67
Total							14							36							18							66	134

Washington Street
west or Corey Road
City, State: Brighton, MA
Client: VHB/ S. Wetmore

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

165024 A Volume
Site Code: TBA

Start Time	04-May-16		05-May-16		06-May-16		07-May-16		08-May-16		09-May-16		10-May-16		Week Average	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
12:00 AM	70	66	84	84	104	83	128	146	*	*	*	*	*	*	96	95
01:00	44	29	45	51	68	74	95	111	*	*	*	*	*	*	63	66
02:00	21	21	27	37	51	42	82	67	*	*	*	*	*	*	45	42
03:00	21	21	12	14	25	15	53	38	*	*	*	*	*	*	28	22
04:00	21	21	23	22	16	22	26	29	*	*	*	*	*	*	22	24
05:00	69	84	69	86	55	85	30	38	*	*	*	*	*	*	56	73
06:00	240	236	249	234	278	215	83	107	*	*	*	*	*	*	212	198
07:00	**530**	440	497	380	488	413	202	174	*	*	*	*	*	*	429	352
08:00	519	**442**	**559**	**445**	**511**	**432**	288	274	*	*	*	*	*	*	**469**	**398**
09:00	465	402	429	370	461	381	355	307	*	*	*	*	*	*	428	365
10:00	398	361	408	362	400	344	428	394	*	*	*	*	*	*	408	365
11:00	443	394	445	396	435	369	**485**	**408**	*	*	*	*	*	*	452	392
12:00 PM	424	395	445	389	412	380	505	430	*	*	*	*	*	*	446	398
01:00	426	395	455	420	459	406	495	429	*	*	*	*	*	*	459	412
02:00	481	443	467	436	461	435	509	404	*	*	*	*	*	*	480	430
03:00	504	**474**	467	421	549	**453**	**540**	**459**	*	*	*	*	*	*	515	452
04:00	524	456	538	**489**	568	451	500	434	*	*	*	*	*	*	532	**458**
05:00	**607**	438	**642**	449	593	448	482	429	*	*	*	*	*	*	**581**	441
06:00	606	412	594	449	**605**	412	486	358	*	*	*	*	*	*	573	408
07:00	500	380	534	381	504	433	446	348	*	*	*	*	*	*	496	386
08:00	375	340	395	311	412	296	357	290	*	*	*	*	*	*	385	309
09:00	301	310	308	302	295	277	322	279	*	*	*	*	*	*	306	292
10:00	214	207	257	238	319	264	277	232	*	*	*	*	*	*	267	235
11:00	133	118	200	176	223	223	217	211	*	*	*	*	*	*	193	182
Total	7936	6885	8149	6942	8292	6953	7391	6396	0	0	0	0	0	0	7941	6795
Day	14821		15091		15245		13787		0		0		0		14736	
AM Peak	07:00	08:00	08:00	08:00	08:00	08:00	11:00	11:00	-	-	-	-	-	-	08:00	08:00
Vol.	530	442	559	445	511	432	485	408	-	-	-	-	-	-	469	398
PM Peak	17:00	15:00	17:00	16:00	18:00	15:00	15:00	15:00	-	-	-	-	-	-	17:00	16:00
Vol.	607	474	642	489	605	453	540	459	-	-	-	-	-	-	581	458

Comb. Total	14821	15091	15245	13787	0	0	0	14736
ADT	ADT 12,420	AADT 12,420					

Washington Street
west or Corey Road
City, State: Brighton, MA
Client: VHB/ S. Wetmore

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

165024 A Volume
Site Code: TBA

Start	EB				WB				Combined				04-May-16
Time	A.M.		P.M.		A.M.		P.M.		A.M.		P.M.		Wed
12:00	17		104		19		81		36		185		
12:15	18		105		18		105		36		210		
12:30	20		113		18		112		38		225		
12:45	15	70	102	424	11	66	97	395	26	136	199	819	
01:00	18		97		5		93		23		190		
01:15	8		115		6		99		14		214		
01:30	10		99		10		96		20		195		
01:45	8	44	115	426	8	29	107	395	16	73	222	821	
02:00	5		122		4		90		9		212		
02:15	8		111		5		107		13		218		
02:30	5		124		7		129		12		253		
02:45	3	21	124	481	5	21	117	443	8	42	241	924	
03:00	3		113		7		121		10		234		
03:15	8		115		5		130		13		245		
03:30	4		144		6		113		10		257		
03:45	6	21	132	504	3	21	110	474	9	42	242	978	
04:00	5		128		5		105		10		233		
04:15	4		136		3		116		7		252		
04:30	7		127		7		112		14		239		
04:45	5	21	133	524	6	21	123	456	11	42	256	980	
05:00	4		157		15		120		19		277		
05:15	14		152		19		97		33		249		
05:30	18		150		19		113		37		263		
05:45	33	69	148	607	31	84	108	438	64	153	256	1045	
06:00	32		167		41		111		73		278		
06:15	51		147		40		110		91		257		
06:30	67		149		75		93		142		242		
06:45	90	240	143	606	80	236	98	412	170	476	241	1018	
07:00	99		144		85		111		184		255		
07:15	143		130		113		90		256		220		
07:30	133		110		106		89		239		199		
07:45	155	530	116	500	136	440	90	380	291	970	206	880	
08:00	125		94		114		86		239		180		
08:15	128		91		110		80		238		171		
08:30	131		104		103		103		234		207		
08:45	135	519	86	375	115	442	71	340	250	961	157	715	
09:00	127		80		123		84		250		164		
09:15	103		84		102		86		205		170		
09:30	120		70		83		64		203		134		
09:45	115	465	67	301	94	402	76	310	209	867	143	611	
10:00	109		68		88		60		197		128		
10:15	103		51		97		57		200		108		
10:30	97		55		80		54		177		109		
10:45	89	398	40	214	96	361	36	207	185	759	76	421	
11:00	116		33		102		31		218		64		
11:15	103		35		91		30		194		65		
11:30	101		48		100		29		201		77		
11:45	123	443	17	133	101	394	28	118	224	837	45	251	
Total	2841		5095		2517		4368		5358		9463		
Percent	53.0%		53.8%		47.0%		46.2%						
Day Total		7936				6885				14821			
Peak	07:15	-	05:15	-	07:15	-	02:30	-	07:15	-	05:30	-	-	-
Vol.	556	-	617	-	469	-	497	-	1025	-	1054	-	-	-
P.H.F.	0.897		0.924		0.862		0.956		0.881		0.948			

Washington Street
west or Corey Road
City, State: Brighton, MA
Client: VHB/ S. Wetmore

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

165024 A Volume
Site Code: TBA

Start	EB				WB				Combined				05-May-16
Time	A.M.		P.M.		A.M.		P.M.		A.M.		P.M.		Thu
12:00	25		132		25		99		50		231		
12:15	26		109		16		100		42		209		
12:30	13		113		25		96		38		209		
12:45	20	84	91	445	18	84	94	389	38	168	185	834	
01:00	15		120		13		117		28		237		
01:15	5		116		16		94		21		210		
01:30	14		105		13		107		27		212		
01:45	11	45	114	455	9	51	102	420	20	96	216	875	
02:00	4		124		14		114		18		238		
02:15	9		117		9		118		18		235		
02:30	7		124		8		111		15		235		
02:45	7	27	102	467	6	37	93	436	13	64	195	903	
03:00	4		110		6		110		10		220		
03:15	3		122		2		95		5		217		
03:30	4		122		3		113		7		235		
03:45	1	12	113	467	3	14	103	421	4	26	216	888	
04:00	4		137		2		116		6		253		
04:15	8		127		3		130		11		257		
04:30	6		127		6		114		12		241		
04:45	5	23	147	538	11	22	129	489	16	45	276	1027	
05:00	6		155		11		98		17		253		
05:15	17		167		12		124		29		291		
05:30	18		180		24		119		42		299		
05:45	28	69	140	642	39	86	108	449	67	155	248	1091	
06:00	39		148		41		112		80		260		
06:15	50		161		48		123		98		284		
06:30	68		143		71		102		139		245		
06:45	92	249	142	594	74	234	112	449	166	483	254	1043	
07:00	96		140		94		90		190		230		
07:15	134		144		99		87		233		231		
07:30	129		126		84		98		213		224		
07:45	138	497	124	534	103	380	106	381	241	877	230	915	
08:00	141		105		102		84		243		189		
08:15	133		99		127		79		260		178		
08:30	126		89		110		84		236		173		
08:45	159	559	102	395	106	445	64	311	265	1004	166	706	
09:00	107		77		105		87		212		164		
09:15	100		72		85		85		185		157		
09:30	115		79		81		58		196		137		
09:45	107	429	80	308	99	370	72	302	206	799	152	610	
10:00	98		71		93		66		191		137		
10:15	91		76		95		61		186		137		
10:30	100		59		82		60		182		119		
10:45	119	408	51	257	92	362	51	238	211	770	102	495	
11:00	98		52		88		57		186		109		
11:15	116		48		95		41		211		89		
11:30	109		59		99		38		208		97		
11:45	122	445	41	200	114	396	40	176	236	841	81	376	
Total	2847		5302		2481		4461		5328		9763		
Percent	53.4%		54.3%		46.6%		45.7%						
Day Total		8149				6942				15091			
Peak	08:00	-	04:45	-	08:15	-	04:00	-	08:00	-	04:45	-	-	-
Vol.	559	-	649	-	448	-	489	-	1004	-	1119	-	-	-
P.H.F.	0.879		0.901		0.882		0.940		0.947		0.936			

Washington Street
west or Corey Road
City, State: Brighton, MA
Client: VHB/ S. Wetmore

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

165024 A Volume
Site Code: TBA

Start	EB				WB				Combined				06-May-16
Time	A.M.		P.M.		A.M.		P.M.		A.M.		P.M.		Fri
12:00	28		102		20		105		48		207		
12:15	26		93		24		92		50		185		
12:30	23		111		20		90		43		201		
12:45	27	104	106	412	19	83	93	380	46	187	199	792	
01:00	24		125		23		103		47		228		
01:15	20		107		17		104		37		211		
01:30	13		112		18		89		31		201		
01:45	11	68	115	459	16	74	110	406	27	142	225	865	
02:00	20		102		18		109		38		211		
02:15	12		130		8		98		20		228		
02:30	11		112		8		118		19		230		
02:45	8	51	117	461	8	42	110	435	16	93	227	896	
03:00	5		125		4		97		9		222		
03:15	6		124		2		133		8		257		
03:30	5		149		6		95		11		244		
03:45	9	25	151	549	3	15	128	453	12	40	279	1002	
04:00	6		139		5		116		11		255		
04:15	1		148		5		119		6		267		
04:30	3		132		5		118		8		250		
04:45	6	16	149	568	7	22	98	451	13	38	247	1019	
05:00	9		148		13		110		22		258		
05:15	14		160		21		122		35		282		
05:30	14		139		22		102		36		241		
05:45	18	55	146	593	29	85	114	448	47	140	260	1041	
06:00	39		173		41		111		80		284		
06:15	81		148		34		91		115		239		
06:30	75		140		61		115		136		255		
06:45	83	278	144	605	79	215	95	412	162	493	239	1017	
07:00	97		127		96		114		193		241		
07:15	140		125		96		107		236		232		
07:30	128		122		102		109		230		231		
07:45	123	488	130	504	119	413	103	433	242	901	233	937	
08:00	123		110		110		79		233		189		
08:15	141		104		101		85		242		189		
08:30	125		94		117		73		242		167		
08:45	122	511	104	412	104	432	59	296	226	943	163	708	
09:00	103		68		105		72		208		140		
09:15	127		77		98		67		225		144		
09:30	123		73		89		70		212		143		
09:45	108	461	77	295	89	381	68	277	197	842	145	572	
10:00	100		96		90		86		190		182		
10:15	94		73		82		54		176		127		
10:30	103		73		85		63		188		136		
10:45	103	400	77	319	87	344	61	264	190	744	138	583	
11:00	104		50		91		62		195		112		
11:15	103		72		91		61		194		133		
11:30	105		61		93		52		198		113		
11:45	123	435	40	223	94	369	48	223	217	804	88	446	
Total	2892		5400		2475		4478		5367		9878		
Percent	53.9%		54.7%		46.1%		45.3%						
Day Total		8292				6953				15245			
Peak	07:30	-	05:15	-	07:45	-	03:45	-	07:45	-	05:15	-	-	-
Vol.	515	-	618	-	447	-	481	-	959	-	1067	-	-	-
P.H.F.	0.913		0.893		0.939		0.939		0.991		0.939			

Washington Street
west or Corey Road
City, State: Brighton, MA
Client: VHB/ S. Wetmore

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

165024 A Volume
Site Code: TBA

Start	EB				WB				Combined				07-May-16
Time	A.M.		P.M.		A.M.		P.M.		A.M.		P.M.		Sat
12:00	31		112		38		112		69		224		
12:15	30		139		31		114		61		253		
12:30	32		125		37		111		69		236		
12:45	35	128	129	505	40	146	93	430	75	274	222	935	
01:00	24		144		26		105		50		249		
01:15	25		112		33		111		58		223		
01:30	22		113		31		116		53		229		
01:45	24	95	126	495	21	111	97	429	45	206	223	924	
02:00	21		119		23		89		44		208		
02:15	24		126		20		112		44		238		
02:30	24		125		14		103		38		228		
02:45	13	82	139	509	10	67	100	404	23	149	239	913	
03:00	23		129		8		108		31		237		
03:15	12		150		12		124		24		274		
03:30	9		136		10		116		19		252		
03:45	9	53	125	540	8	38	111	459	17	91	236	999	
04:00	3		120		10		114		13		234		
04:15	4		127		8		95		12		222		
04:30	10		113		7		114		17		227		
04:45	9	26	140	500	4	29	111	434	13	55	251	934	
05:00	7		128		4		106		11		234		
05:15	10		111		5		111		15		222		
05:30	8		122		13		108		21		230		
05:45	5	30	121	482	16	38	104	429	21	68	225	911	
06:00	10		139		15		96		25		235		
06:15	21		134		19		95		40		229		
06:30	26		108		35		87		61		195		
06:45	26	83	105	486	38	107	80	358	64	190	185	844	
07:00	25		132		29		100		54		232		
07:15	52		111		37		80		89		191		
07:30	60		104		62		83		122		187		
07:45	65	202	99	446	46	174	85	348	111	376	184	794	
08:00	58		83		55		71		113		154		
08:15	68		94		64		67		132		161		
08:30	65		94		70		83		135		177		
08:45	97	288	86	357	85	274	69	290	182	562	155	647	
09:00	71		84		66		77		137		161		
09:15	86		99		80		82		166		181		
09:30	82		70		72		59		154		129		
09:45	116	355	69	322	89	307	61	279	205	662	130	601	
10:00	99		77		100		59		199		136		
10:15	107		72		95		63		202		135		
10:30	100		60		111		55		211		115		
10:45	122	428	68	277	88	394	55	232	210	822	123	509	
11:00	97		68		99		56		196		124		
11:15	130		55		101		57		231		112		
11:30	125		56		114		49		239		105		
11:45	133	485	38	217	94	408	49	211	227	893	87	428	
Total	2255		5136		2093		4303		4348		9439		
Percent	51.9%		54.4%		48.1%		45.6%						
Day Total		7391				6396				13787			
Peak	11:00	-	02:45	-	11:00	-	03:15	-	11:00	-	02:45	-	-	-
Vol.	485	-	554	-	408	-	465	-	893	-	1002	-	-	-
P.H.F.	0.912		0.923		0.895		0.938		0.934		0.914			

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

Washington Street
west or Corey Road
City, State: Brighton, MA
Client: VHB/ S. Wetmore

165024 A Class
Site Code: TBA

EB

Start Time	Cars	Medium Heavy	Large Heavy											Total
05/04/1														
6	70	0	0	0	0	0	0	0	0	0	0	0	0	70
01:00	44	0	0	0	0	0	0	0	0	0	0	0	0	44
02:00	20	1	0	0	0	0	0	0	0	0	0	0	0	21
03:00	19	1	1	0	0	0	0	0	0	0	0	0	0	21
04:00	20	1	0	0	0	0	0	0	0	0	0	0	0	21
05:00	67	1	1	0	0	0	0	0	0	0	0	0	0	69
06:00	222	18	0	0	0	0	0	0	0	0	0	0	0	240
07:00	499	31	0	0	0	0	0	0	0	0	0	0	0	530
08:00	492	27	0	0	0	0	0	0	0	0	0	0	0	519
09:00	441	24	0	0	0	0	0	0	0	0	0	0	0	465
10:00	368	28	2	0	0	0	0	0	0	0	0	0	0	398
11:00	422	20	1	0	0	0	0	0	0	0	0	0	0	443
12 PM	406	18	0	0	0	0	0	0	0	0	0	0	0	424
13:00	401	25	0	0	0	0	0	0	0	0	0	0	0	426
14:00	458	23	0	0	0	0	0	0	0	0	0	0	0	481
15:00	492	11	1	0	0	0	0	0	0	0	0	0	0	504
16:00	510	14	0	0	0	0	0	0	0	0	0	0	0	524
17:00	600	7	0	0	0	0	0	0	0	0	0	0	0	607
18:00	599	7	0	0	0	0	0	0	0	0	0	0	0	606
19:00	497	3	0	0	0	0	0	0	0	0	0	0	0	500
20:00	374	1	0	0	0	0	0	0	0	0	0	0	0	375
21:00	301	0	0	0	0	0	0	0	0	0	0	0	0	301
22:00	214	0	0	0	0	0	0	0	0	0	0	0	0	214
23:00	133	0	0	0	0	0	0	0	0	0	0	0	0	133
Total	7669	261	6	0	0	0	0	0	0	0	0	0	0	7936
Percent	96.6%	3.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	07:00	07:00	10:00											07:00
Vol.	499	31	2											530
PM Peak	17:00	13:00	15:00											17:00
Vol.	600	25	1											607

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

Washington Street
west or Corey Road
City, State: Brighton, MA
Client: VHB/ S. Wetmore

165024 A Class
Site Code: TBA

EB

Start Time	Cars	Medium Heavy	Large Heavy											Total
05/05/1														
6	83	1	0	0	0	0	0	0	0	0	0	0	0	84
01:00	45	0	0	0	0	0	0	0	0	0	0	0	0	45
02:00	26	1	0	0	0	0	0	0	0	0	0	0	0	27
03:00	12	0	0	0	0	0	0	0	0	0	0	0	0	12
04:00	23	0	0	0	0	0	0	0	0	0	0	0	0	23
05:00	67	2	0	0	0	0	0	0	0	0	0	0	0	69
06:00	231	17	1	0	0	0	0	0	0	0	0	0	0	249
07:00	465	31	1	0	0	0	0	0	0	0	0	0	0	497
08:00	536	23	0	0	0	0	0	0	0	0	0	0	0	559
09:00	400	29	0	0	0	0	0	0	0	0	0	0	0	429
10:00	393	14	1	0	0	0	0	0	0	0	0	0	0	408
11:00	423	21	1	0	0	0	0	0	0	0	0	0	0	445
12 PM	428	17	0	0	0	0	0	0	0	0	0	0	0	445
13:00	434	19	2	0	0	0	0	0	0	0	0	0	0	455
14:00	451	16	0	0	0	0	0	0	0	0	0	0	0	467
15:00	450	17	0	0	0	0	0	0	0	0	0	0	0	467
16:00	520	18	0	0	0	0	0	0	0	0	0	0	0	538
17:00	634	8	0	0	0	0	0	0	0	0	0	0	0	642
18:00	585	9	0	0	0	0	0	0	0	0	0	0	0	594
19:00	532	2	0	0	0	0	0	0	0	0	0	0	0	534
20:00	393	2	0	0	0	0	0	0	0	0	0	0	0	395
21:00	307	1	0	0	0	0	0	0	0	0	0	0	0	308
22:00	257	0	0	0	0	0	0	0	0	0	0	0	0	257
23:00	200	0	0	0	0	0	0	0	0	0	0	0	0	200
Total	7895	248	6	0	0	0	0	0	0	0	0	0	0	8149
Percent	96.9%	3.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	07:00	06:00											08:00
Vol.	536	31	1											559
PM Peak	17:00	13:00	13:00											17:00
Vol.	634	19	2											642

Washington Street
west or Corey Road
City, State: Brighton, MA
Client: VHB/ S. Wetmore

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

165024 A Class
Site Code: TBA

EB

Start Time	Cars	Medium Heavy	Large Heavy											Total
05/06/1														
6	104	0	0	0	0	0	0	0	0	0	0	0	0	104
01:00	68	0	0	0	0	0	0	0	0	0	0	0	0	68
02:00	51	0	0	0	0	0	0	0	0	0	0	0	0	51
03:00	24	1	0	0	0	0	0	0	0	0	0	0	0	25
04:00	16	0	0	0	0	0	0	0	0	0	0	0	0	16
05:00	51	4	0	0	0	0	0	0	0	0	0	0	0	55
06:00	249	29	0	0	0	0	0	0	0	0	0	0	0	278
07:00	461	27	0	0	0	0	0	0	0	0	0	0	0	488
08:00	485	25	1	0	0	0	0	0	0	0	0	0	0	511
09:00	430	31	0	0	0	0	0	0	0	0	0	0	0	461
10:00	384	15	1	0	0	0	0	0	0	0	0	0	0	400
11:00	411	23	1	0	0	0	0	0	0	0	0	0	0	435
12 PM	403	9	0	0	0	0	0	0	0	0	0	0	0	412
13:00	434	23	2	0	0	0	0	0	0	0	0	0	0	459
14:00	436	24	1	0	0	0	0	0	0	0	0	0	0	461
15:00	526	22	1	0	0	0	0	0	0	0	0	0	0	549
16:00	554	14	0	0	0	0	0	0	0	0	0	0	0	568
17:00	585	8	0	0	0	0	0	0	0	0	0	0	0	593
18:00	598	7	0	0	0	0	0	0	0	0	0	0	0	605
19:00	500	4	0	0	0	0	0	0	0	0	0	0	0	504
20:00	410	2	0	0	0	0	0	0	0	0	0	0	0	412
21:00	291	4	0	0	0	0	0	0	0	0	0	0	0	295
22:00	319	0	0	0	0	0	0	0	0	0	0	0	0	319
23:00	222	1	0	0	0	0	0	0	0	0	0	0	0	223
Total	8012	273	7	0	0	0	0	0	0	0	0	0	0	8292
Percent	96.6%	3.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	09:00	08:00											08:00
Vol.	485	31	1											511
PM Peak	18:00	14:00	13:00											18:00
Vol.	598	24	2											605

Washington Street
west or Corey Road
City, State: Brighton, MA
Client: VHB/ S. Wetmore

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

165024 A Class
Site Code: TBA

EB

Start Time	Cars	Medium Heavy	Large Heavy											Total
05/07/1														
6	128	0	0	0	0	0	0	0	0	0	0	0	0	128
01:00	95	0	0	0	0	0	0	0	0	0	0	0	0	95
02:00	82	0	0	0	0	0	0	0	0	0	0	0	0	82
03:00	53	0	0	0	0	0	0	0	0	0	0	0	0	53
04:00	25	1	0	0	0	0	0	0	0	0	0	0	0	26
05:00	30	0	0	0	0	0	0	0	0	0	0	0	0	30
06:00	76	6	1	0	0	0	0	0	0	0	0	0	0	83
07:00	196	5	1	0	0	0	0	0	0	0	0	0	0	202
08:00	278	10	0	0	0	0	0	0	0	0	0	0	0	288
09:00	349	5	1	0	0	0	0	0	0	0	0	0	0	355
10:00	424	4	0	0	0	0	0	0	0	0	0	0	0	428
11:00	475	10	0	0	0	0	0	0	0	0	0	0	0	485
12 PM	499	6	0	0	0	0	0	0	0	0	0	0	0	505
13:00	488	7	0	0	0	0	0	0	0	0	0	0	0	495
14:00	503	6	0	0	0	0	0	0	0	0	0	0	0	509
15:00	537	3	0	0	0	0	0	0	0	0	0	0	0	540
16:00	497	3	0	0	0	0	0	0	0	0	0	0	0	500
17:00	480	2	0	0	0	0	0	0	0	0	0	0	0	482
18:00	483	3	0	0	0	0	0	0	0	0	0	0	0	486
19:00	446	0	0	0	0	0	0	0	0	0	0	0	0	446
20:00	356	1	0	0	0	0	0	0	0	0	0	0	0	357
21:00	321	1	0	0	0	0	0	0	0	0	0	0	0	322
22:00	275	2	0	0	0	0	0	0	0	0	0	0	0	277
23:00	217	0	0	0	0	0	0	0	0	0	0	0	0	217
Total	7313	75	3	0	0	0	0	0	0	0	0	0	0	7391
Percent	98.9%	1.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	11:00	08:00	06:00											11:00
Vol.	475	10	1											485
PM Peak	15:00	13:00												15:00
Vol.	537	7												540

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

Washington Street
west or Corey Road
City, State: Brighton, MA
Client: VHB/ S. Wetmore

165024 A Class
Site Code: TBA

WB

Start Time	Cars	Medium Heavy	Large Heavy											Total
05/04/1														
6	64	2	0	0	0	0	0	0	0	0	0	0	0	66
01:00	28	1	0	0	0	0	0	0	0	0	0	0	0	29
02:00	21	0	0	0	0	0	0	0	0	0	0	0	0	21
03:00	21	0	0	0	0	0	0	0	0	0	0	0	0	21
04:00	19	2	0	0	0	0	0	0	0	0	0	0	0	21
05:00	80	4	0	0	0	0	0	0	0	0	0	0	0	84
06:00	230	6	0	0	0	0	0	0	0	0	0	0	0	236
07:00	417	23	0	0	0	0	0	0	0	0	0	0	0	440
08:00	418	24	0	0	0	0	0	0	0	0	0	0	0	442
09:00	378	24	0	0	0	0	0	0	0	0	0	0	0	402
10:00	346	15	0	0	0	0	0	0	0	0	0	0	0	361
11:00	375	18	1	0	0	0	0	0	0	0	0	0	0	394
12 PM	379	15	1	0	0	0	0	0	0	0	0	0	0	395
13:00	377	18	0	0	0	0	0	0	0	0	0	0	0	395
14:00	427	16	0	0	0	0	0	0	0	0	0	0	0	443
15:00	459	15	0	0	0	0	0	0	0	0	0	0	0	474
16:00	436	19	1	0	0	0	0	0	0	0	0	0	0	456
17:00	424	14	0	0	0	0	0	0	0	0	0	0	0	438
18:00	399	13	0	0	0	0	0	0	0	0	0	0	0	412
19:00	377	3	0	0	0	0	0	0	0	0	0	0	0	380
20:00	338	2	0	0	0	0	0	0	0	0	0	0	0	340
21:00	309	1	0	0	0	0	0	0	0	0	0	0	0	310
22:00	203	4	0	0	0	0	0	0	0	0	0	0	0	207
23:00	118	0	0	0	0	0	0	0	0	0	0	0	0	118
Total	6643	239	3	0	0	0	0	0	0	0	0	0	0	6885
Percent	96.5%	3.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	08:00	11:00											08:00
Vol.	418	24	1											442
PM Peak	15:00	16:00	12:00											15:00
Vol.	459	19	1											474

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

Washington Street
west or Corey Road
City, State: Brighton, MA
Client: VHB/ S. Wetmore

165024 A Class
Site Code: TBA

WB

Start Time	Cars	Medium Heavy	Large Heavy											Total
05/05/1														
6	83	1	0	0	0	0	0	0	0	0	0	0	0	84
01:00	50	1	0	0	0	0	0	0	0	0	0	0	0	51
02:00	37	0	0	0	0	0	0	0	0	0	0	0	0	37
03:00	14	0	0	0	0	0	0	0	0	0	0	0	0	14
04:00	20	2	0	0	0	0	0	0	0	0	0	0	0	22
05:00	83	3	0	0	0	0	0	0	0	0	0	0	0	86
06:00	225	8	1	0	0	0	0	0	0	0	0	0	0	234
07:00	356	24	0	0	0	0	0	0	0	0	0	0	0	380
08:00	423	21	1	0	0	0	0	0	0	0	0	0	0	445
09:00	349	21	0	0	0	0	0	0	0	0	0	0	0	370
10:00	347	15	0	0	0	0	0	0	0	0	0	0	0	362
11:00	385	10	1	0	0	0	0	0	0	0	0	0	0	396
12 PM	375	14	0	0	0	0	0	0	0	0	0	0	0	389
13:00	402	15	3	0	0	0	0	0	0	0	0	0	0	420
14:00	422	14	0	0	0	0	0	0	0	0	0	0	0	436
15:00	398	22	1	0	0	0	0	0	0	0	0	0	0	421
16:00	470	19	0	0	0	0	0	0	0	0	0	0	0	489
17:00	432	17	0	0	0	0	0	0	0	0	0	0	0	449
18:00	439	10	0	0	0	0	0	0	0	0	0	0	0	449
19:00	378	3	0	0	0	0	0	0	0	0	0	0	0	381
20:00	308	3	0	0	0	0	0	0	0	0	0	0	0	311
21:00	298	4	0	0	0	0	0	0	0	0	0	0	0	302
22:00	237	1	0	0	0	0	0	0	0	0	0	0	0	238
23:00	176	0	0	0	0	0	0	0	0	0	0	0	0	176
Total	6707	228	7	0	0	0	0	0	0	0	0	0	0	6942
Percent	96.6%	3.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	07:00	06:00											08:00
Vol.	423	24	1											445
PM Peak	16:00	15:00	13:00											16:00
Vol.	470	22	3											489

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

Washington Street
west or Corey Road
City, State: Brighton, MA
Client: VHB/ S. Wetmore

165024 A Class
Site Code: TBA

WB

Start Time	Cars	Medium Heavy	Large Heavy											Total
05/06/1														
6	83	0	0	0	0	0	0	0	0	0	0	0	0	83
01:00	74	0	0	0	0	0	0	0	0	0	0	0	0	74
02:00	40	2	0	0	0	0	0	0	0	0	0	0	0	42
03:00	15	0	0	0	0	0	0	0	0	0	0	0	0	15
04:00	20	2	0	0	0	0	0	0	0	0	0	0	0	22
05:00	82	3	0	0	0	0	0	0	0	0	0	0	0	85
06:00	211	4	0	0	0	0	0	0	0	0	0	0	0	215
07:00	391	22	0	0	0	0	0	0	0	0	0	0	0	413
08:00	412	20	0	0	0	0	0	0	0	0	0	0	0	432
09:00	351	29	1	0	0	0	0	0	0	0	0	0	0	381
10:00	331	13	0	0	0	0	0	0	0	0	0	0	0	344
11:00	351	17	1	0	0	0	0	0	0	0	0	0	0	369
12 PM	368	12	0	0	0	0	0	0	0	0	0	0	0	380
13:00	389	16	1	0	0	0	0	0	0	0	0	0	0	406
14:00	422	12	1	0	0	0	0	0	0	0	0	0	0	435
15:00	436	17	0	0	0	0	0	0	0	0	0	0	0	453
16:00	436	14	1	0	0	0	0	0	0	0	0	0	0	451
17:00	438	10	0	0	0	0	0	0	0	0	0	0	0	448
18:00	407	5	0	0	0	0	0	0	0	0	0	0	0	412
19:00	428	5	0	0	0	0	0	0	0	0	0	0	0	433
20:00	292	4	0	0	0	0	0	0	0	0	0	0	0	296
21:00	277	0	0	0	0	0	0	0	0	0	0	0	0	277
22:00	264	0	0	0	0	0	0	0	0	0	0	0	0	264
23:00	223	0	0	0	0	0	0	0	0	0	0	0	0	223
Total	6741	207	5	0	0	0	0	0	0	0	0	0	0	6953
Percent	97.0%	3.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	09:00	09:00											08:00
Vol.	412	29	1											432
PM Peak	17:00	15:00	13:00											15:00
Vol.	438	17	1											453

Washington Street
west or Corey Road
City, State: Brighton, MA
Client: VHB/ S. Wetmore

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

165024 A Class
Site Code: TBA

WB

Start Time	Cars	Medium Heavy	Large Heavy											Total
05/07/1														
6	144	2	0	0	0	0	0	0	0	0	0	0	0	146
01:00	111	0	0	0	0	0	0	0	0	0	0	0	0	111
02:00	65	2	0	0	0	0	0	0	0	0	0	0	0	67
03:00	38	0	0	0	0	0	0	0	0	0	0	0	0	38
04:00	27	2	0	0	0	0	0	0	0	0	0	0	0	29
05:00	36	2	0	0	0	0	0	0	0	0	0	0	0	38
06:00	105	2	0	0	0	0	0	0	0	0	0	0	0	107
07:00	166	7	1	0	0	0	0	0	0	0	0	0	0	174
08:00	269	5	0	0	0	0	0	0	0	0	0	0	0	274
09:00	301	6	0	0	0	0	0	0	0	0	0	0	0	307
10:00	388	6	0	0	0	0	0	0	0	0	0	0	0	394
11:00	401	6	1	0	0	0	0	0	0	0	0	0	0	408
12 PM	423	7	0	0	0	0	0	0	0	0	0	0	0	430
13:00	417	12	0	0	0	0	0	0	0	0	0	0	0	429
14:00	396	7	1	0	0	0	0	0	0	0	0	0	0	404
15:00	455	4	0	0	0	0	0	0	0	0	0	0	0	459
16:00	429	5	0	0	0	0	0	0	0	0	0	0	0	434
17:00	425	4	0	0	0	0	0	0	0	0	0	0	0	429
18:00	357	1	0	0	0	0	0	0	0	0	0	0	0	358
19:00	347	1	0	0	0	0	0	0	0	0	0	0	0	348
20:00	289	1	0	0	0	0	0	0	0	0	0	0	0	290
21:00	277	2	0	0	0	0	0	0	0	0	0	0	0	279
22:00	231	1	0	0	0	0	0	0	0	0	0	0	0	232
23:00	209	2	0	0	0	0	0	0	0	0	0	0	0	211
Total	6306	87	3	0	0	0	0	0	0	0	0	0	0	6396
Percent	98.6%	1.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	11:00	07:00	07:00											11:00
Vol.	401	7	1											408
PM Peak	15:00	13:00	14:00											15:00
Vol.	455	12	1											459

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Brighton, MA | COUNT DATE : Nov-17

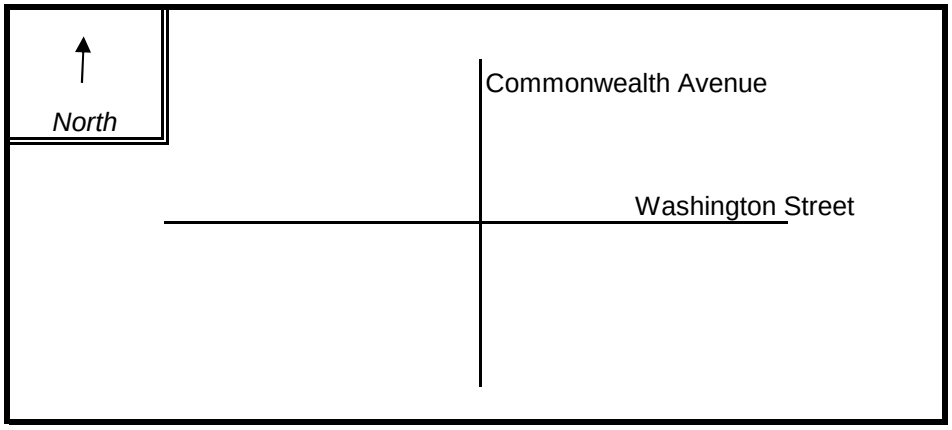
DISTRICT : 6 | UNSIGNALIZED : | SIGNALIZED : x

~ INTERSECTION DATA ~

MAJOR STREET : Commonwealth Ave

MINOR STREET(S) : Washington Street

INTERSECTION DIAGRAM (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	SB	WB	NB	EB		
PEAK HOURLY VOLUMES (AM/PM) :	470	420	860	415		**2,165**

" K " FACTOR : **0.090** | INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **24,056**

TOTAL # OF CRASHES : 6 | # OF YEARS : 5 | AVERAGE # OF CRASHES PER YEAR (**A**) : **1.20**

CRASH RATE CALCULATION : **0.14**

$$\text{RATE} = \frac{(A * 1{,}000{,}000)}{(V * 365)}$$

Comments :

Project Title & Date: 15 Washington Street 11/21/2017

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Brighton, MA | COUNT DATE : Nov-17

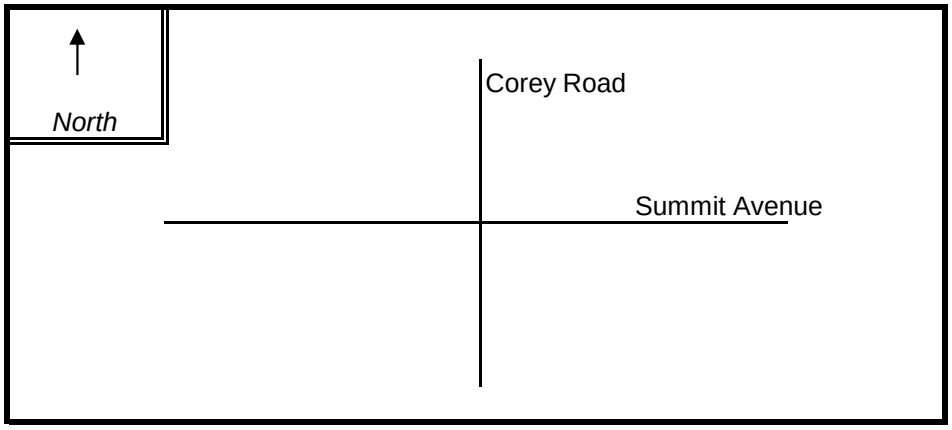
DISTRICT : 6 | UNSIGNALIZED : | SIGNALIZED : x

~ INTERSECTION DATA ~

MAJOR STREET : Corey Road

MINOR STREET(S) : Summit Avenue

INTERSECTION DIAGRAM (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	SB	WB	NB	EB		
PEAK HOURLY VOLUMES (AM/PM) :	165	115	475	125		**880**

" K " FACTOR : **0.090**

INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **9,778**

TOTAL # OF CRASHES : 1

OF YEARS : 5

AVERAGE # OF CRASHES PER YEAR (**A**) : **0.20**

CRASH RATE CALCULATION : **0.06**

$$\text{RATE} = \frac{(A * 1{,}000{,}000)}{(V * 365)}$$

Comments :

Project Title & Date: 15 Washington Street 11/21/2017

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Brighton, MA | COUNT DATE : Nov-17

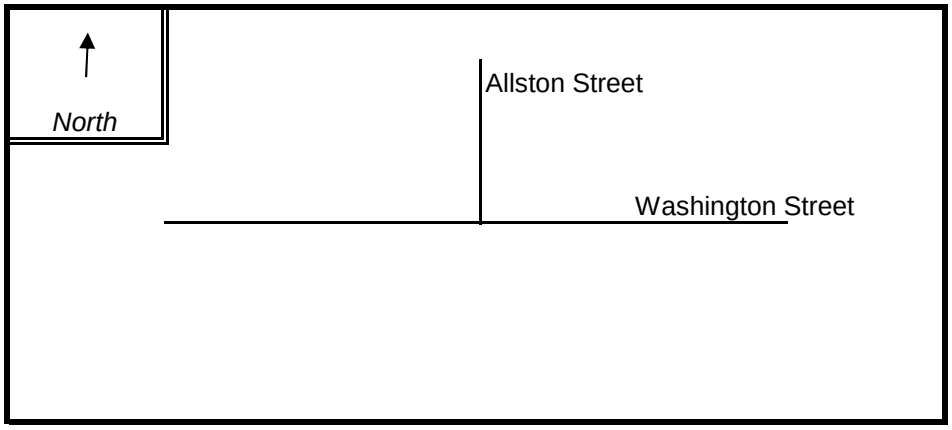
DISTRICT : 6 | UNSIGNALIZED : x | SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Washington Street

MINOR STREET(S) : Allston Street

INTERSECTION DIAGRAM (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	SB	WB	NB	EB		
PEAK HOURLY VOLUMES (AM/PM) :	75	440	0	555		**1,070**

" K " FACTOR : **0.090** | INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **11,889**

TOTAL # OF CRASHES : 3 | # OF YEARS : 5 | AVERAGE # OF CRASHES PER YEAR (**A**) : **0.60**

CRASH RATE CALCULATION : **0.14**

$$\text{RATE} = \frac{(A * 1{,}000{,}000)}{(V * 365)}$$

Comments :

Project Title & Date: 15 Washington Street 11/21/2017

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Brighton, MA | COUNT DATE : Nov-17

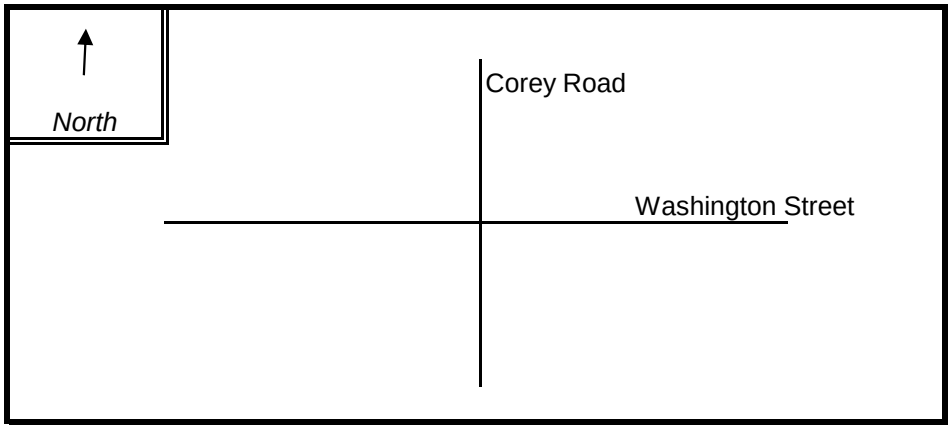
DISTRICT : 6 | UNSIGNALIZED : | SIGNALIZED : x

~ INTERSECTION DATA ~

MAJOR STREET : Washington Street

MINOR STREET(S) : Corey Road

INTERSECTION DIAGRAM (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	SB	WB	NB	EB		
PEAK HOURLY VOLUMES (AM/PM) :	215	520	290	595		**1,620**

" K " FACTOR :	**0.090**	INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME :			**18,000**
TOTAL # OF CRASHES :	2	# OF YEARS :	5	AVERAGE # OF CRASHES PER YEAR (**A**) :	**0.40**

CRASH RATE CALCULATION : **0.06**

$$\text{RATE} = \frac{(A * 1{,}000{,}000)}{(V * 365)}$$

Comments :

Project Title & Date: 15 Washington Street 11/21/2017

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Brighton, MA COUNT DATE : Nov-17

DISTRICT : 6 UNSIGNALIZED : x SIGNALIZED :

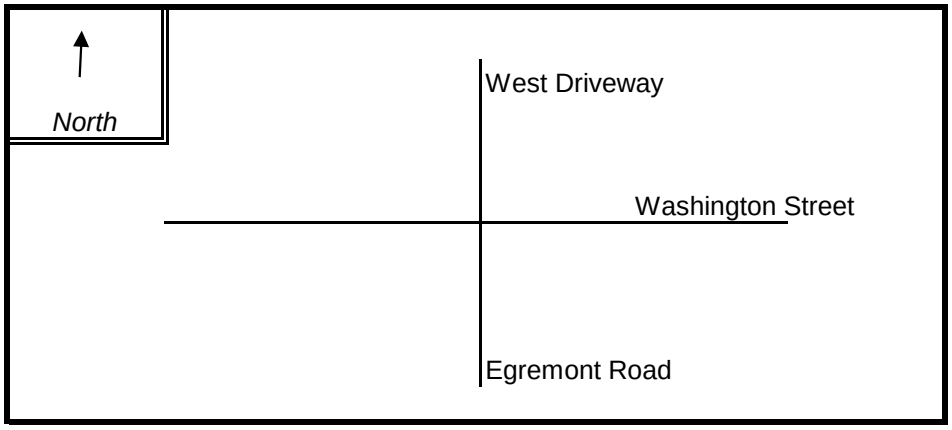
~ INTERSECTION DATA ~

MAJOR STREET : Washington Street

MINOR STREET(S) : Egremont Street

West Driveway (Whole Foods)

INTERSECTION DIAGRAM (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	SB	WB	NB	EB		
PEAK HOURLY VOLUMES (AM/PM) :	30	415	0	570		**1,015**

" K " FACTOR : **0.090**

INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **11,278**

TOTAL # OF CRASHES : 2

OF YEARS : 5

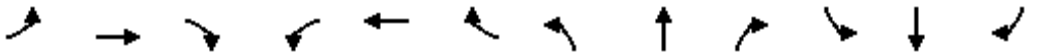
AVERAGE # OF CRASHES PER YEAR (**A**) : **0.40**

CRASH RATE CALCULATION : **0.10**

$$\text{RATE} = \frac{(A * 1{,}000{,}000)}{(V * 365)}$$

Comments :

Project Title & Date: 15 Washington Street 11/21/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	340	20	55	290	75	0	810	50	120	350	0
Future Volume (vph)	55	340	20	55	290	75	0	810	50	120	350	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	10	12	12
Storage Length (ft)	25		0	0		0	0		0	130		0
Storage Lanes	1		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			70		
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	1.00
Ped Bike Factor	0.90	0.99			0.93			0.98		0.90		
Frt		0.992			0.976			0.991				
Flt Protected	0.950				0.994					0.950		
Satd. Flow (prot)	1562	1592	0	0	1507	0	0	3124	0	1417	3185	0
Flt Permitted	0.424				0.720					0.950		
Satd. Flow (perm)	626	1592	0	0	1085	0	0	3124	0	1277	3185	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			11			5				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		267			303			379			331	
Travel Time (s)		6.1			6.9			8.6			7.5	
Confl. Peds. (#/hr)	189		63	63		189	84		86	86		84
Confl. Bikes (#/hr)			8			6						
Peak Hour Factor	0.87	0.87	0.87	0.96	0.96	0.96	0.96	0.96	0.96	0.88	0.88	0.88
Heavy Vehicles (%)	4%	6%	0%	2%	4%	3%	0%	1%	0%	7%	2%	0%
Adj. Flow (vph)	63	391	23	57	302	78	0	844	52	136	398	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	63	414	0	0	437	0	0	896	0	136	398	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)		12			12			45			45	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.25	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2			2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100			100		20	100	
Trailing Detector (ft)	0	0		0	0			0		0	0	
Detector 1 Position(ft)	0	0		0	0			0		0	0	
Detector 1 Size(ft)	20	6		20	6			6		20	6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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	Ø1	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		

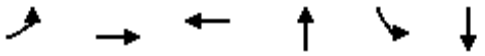
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA			NA		Prot	NA	
Protected Phases		5			5			1 2		6	1 6	
Permitted Phases	5			5								
Detector Phase	5	5		5	5			1 2		6	1 6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0					6.0		
Minimum Split (s)	25.0	25.0		25.0	25.0					20.0		
Total Split (s)	56.0	56.0		56.0	56.0					21.0		
Total Split (%)	46.7%	46.7%		46.7%	46.7%					17.5%		
Maximum Green (s)	47.0	47.0		47.0	47.0					15.0		
Yellow Time (s)	3.0	3.0		3.0	3.0					3.0		
All-Red Time (s)	6.0	6.0		6.0	6.0					3.0		
Lost Time Adjust (s)	0.0	0.0			0.0					0.0		
Total Lost Time (s)	9.0	9.0			9.0					6.0		
Lead/Lag	Lead	Lead		Lead	Lead					Lag		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes					Yes		
Vehicle Extension (s)	2.0	2.0		2.0	2.0					2.0		
Recall Mode	None	None		None	None					None		
Walk Time (s)	7.0	7.0		7.0	7.0					7.0		
Flash Dont Walk (s)	9.0	9.0		9.0	9.0					7.0		
Pedestrian Calls (#/hr)	63	63		63	63					69		
Act Effct Green (s)	47.0	47.0			47.0			37.8		14.2	38.0	
Actuated g/C Ratio	0.39	0.39			0.39			0.32		0.12	0.32	
v/c Ratio	0.26	0.66			1.01			0.91		0.81	0.39	
Control Delay	28.3	36.0			83.1			53.4		85.4	33.5	
Queue Delay	0.0	0.0			0.0			0.0		0.0	0.0	
Total Delay	28.3	36.0			83.1			53.4		85.4	33.5	
LOS	C	D			F			D		F	C	
Approach Delay		35.0			83.1			53.4			46.7	
Approach LOS		C			F			D			D	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 37 (31%), Referenced to phase 1:NBSB, Start of Yellow			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.01			
Intersection Signal Delay: 53.6		Intersection LOS: D	
Intersection Capacity Utilization 107.6%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 1: Comm Ave SB/Commonwealth Ave SB & Washington St

Lane Group	Ø1	Ø2
Detector 2 Channel		
Detector 2 Extend (s)		
Turn Type		
Protected Phases	1	2
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	8.0	5.0
Minimum Split (s)	21.0	20.0
Total Split (s)	23.0	20.0
Total Split (%)	19%	17%
Maximum Green (s)	17.0	14.0
Yellow Time (s)	3.0	3.0
All-Red Time (s)	3.0	3.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	2.0	4.0
Recall Mode	C-Max	None
Walk Time (s)	8.0	7.0
Flash Dont Walk (s)	7.0	7.0
Pedestrian Calls (#/hr)	43	16
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		

Intersection Summary

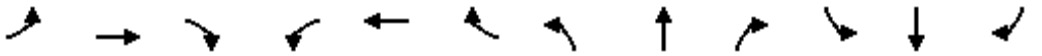


Lane Group	EBL	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	63	414	437	896	136	398
v/c Ratio	0.26	0.66	1.01	0.91	0.81	0.39
Control Delay	28.3	36.0	83.1	53.4	85.4	33.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.3	36.0	83.1	53.4	85.4	33.5
Queue Length 50th (ft)	33	258	~339	351	103	126
Queue Length 95th (ft)	67	356	#558	#479	#199	168
Internal Link Dist (ft)		187	223	299		251
Turn Bay Length (ft)	25				130	
Base Capacity (vph)	245	625	431	987	177	965
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	0.26	0.66	1.01	0.91	0.77	0.41

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

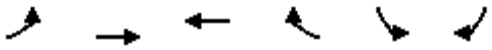
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	340	20	55	290	75	0	810	50	120	350	0
Future Volume (vph)	55	340	20	55	290	75	0	810	50	120	350	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	10	12	12
Total Lost time (s)	9.0	9.0			9.0			6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00			1.00			0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99			0.94			0.98		1.00	1.00	
Flpb, ped/bikes	0.90	1.00			0.99			1.00		1.00	1.00	
Frt	1.00	0.99			0.98			0.99		1.00	1.00	
Flt Protected	0.95	1.00			0.99			1.00		0.95	1.00	
Satd. Flow (prot)	1402	1591			1497			3125		1417	3185	
Flt Permitted	0.42	1.00			0.72			1.00		0.95	1.00	
Satd. Flow (perm)	626	1591			1084			3125		1417	3185	
Peak-hour factor, PHF	0.87	0.87	0.87	0.96	0.96	0.96	0.96	0.96	0.96	0.88	0.88	0.88
Adj. Flow (vph)	63	391	23	57	302	78	0	844	52	136	398	0
RTOR Reduction (vph)	0	2	0	0	7	0	0	3	0	0	0	0
Lane Group Flow (vph)	63	412	0	0	430	0	0	893	0	136	398	0
Confl. Peds. (#/hr)	189		63	63		189	84		86	86		84
Confl. Bikes (#/hr)			8			6						
Heavy Vehicles (%)	4%	6%	0%	2%	4%	3%	0%	1%	0%	7%	2%	0%
Turn Type	Perm	NA		Perm	NA			NA		Prot	NA	
Protected Phases		5			5			1 2		6	1 6	
Permitted Phases	5			5								
Actuated Green, G (s)	47.0	47.0			47.0			37.8		14.2	38.0	
Effective Green, g (s)	47.0	47.0			47.0			37.8		14.2	38.0	
Actuated g/C Ratio	0.39	0.39			0.39			0.31		0.12	0.32	
Clearance Time (s)	9.0	9.0			9.0					6.0		
Vehicle Extension (s)	2.0	2.0			2.0					2.0		
Lane Grp Cap (vph)	245	623			424			984		167	1008	
v/s Ratio Prot		0.26						c0.29		c0.10	0.12	
v/s Ratio Perm	0.10				c0.40							
v/c Ratio	0.26	0.66			1.01			0.91		0.81	0.39	
Uniform Delay, d1	24.7	30.0			36.5			39.4		51.6	32.0	
Progression Factor	1.00	1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2	0.2	2.1			47.5			11.9		24.1	0.1	
Delay (s)	24.9	32.0			84.0			51.4		75.8	32.1	
Level of Service	C	C			F			D		E	C	
Approach Delay (s)		31.1			84.0			51.4			43.2	
Approach LOS		C			F			D			D	

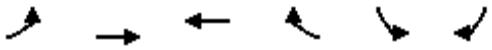
Intersection Summary			
HCM 2000 Control Delay	51.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	27.0
Intersection Capacity Utilization	107.6%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	30	520	450	35	50	25
Future Volume (vph)	30	520	450	35	50	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.990		0.955	
Flt Protected		0.997			0.968	
Satd. Flow (prot)	0	1673	1614	0	1540	0
Flt Permitted		0.997			0.968	
Satd. Flow (perm)	0	1673	1614	0	1540	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		303	142		425	
Travel Time (s)		6.9	3.2		9.7	
Confl. Peds. (#/hr)	70			70	37	
Confl. Bikes (#/hr)				7		
Peak Hour Factor	0.96	0.96	0.94	0.94	0.63	0.63
Heavy Vehicles (%)	10%	5%	5%	3%	2%	4%
Adj. Flow (vph)	31	542	479	37	79	40
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	573	516	0	119	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.10	1.10	1.14	1.14	1.14	1.14
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 69.1%		ICU Level of Service C	
Analysis Period (min) 15			

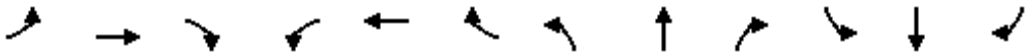


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	30	520	450	35	50	25
Future Volume (Veh/h)	30	520	450	35	50	25
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.96	0.96	0.94	0.94	0.63	0.63
Hourly flow rate (vph)	31	542	479	37	79	40
Pedestrians			37		70	
Lane Width (ft)			12.0		12.0	
Walking Speed (ft/s)			3.5		3.5	
Percent Blockage			4		7	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		303	499			
pX, platoon unblocked					0.80	
vC, conflicting volume	586				1208	568
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	586				1134	568
tC, single (s)	4.2				*4.5	*4.5
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.3
p0 queue free %	97				72	94
cM capacity (veh/h)	887				284	637

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	573	516	119
Volume Left	31	0	79
Volume Right	0	37	40
cSH	887	1700	349
Volume to Capacity	0.03	0.30	0.34
Queue Length 95th (ft)	3	0	37
Control Delay (s)	0.9	0.0	20.6
Lane LOS	A		C
Approach Delay (s)	0.9	0.0	20.6
Approach LOS			C

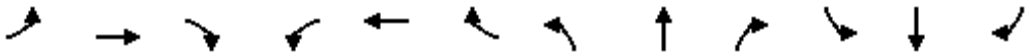
Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	69.1%	ICU Level of Service	C
Analysis Period (min)	15		

* User Entered Value



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	570	0	5	410	0	0	0	0	5	5	20
Future Volume (vph)	0	570	0	5	410	0	0	0	0	5	5	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	12	12	12	13	13	13	14	14	14
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											0.908	
Flt Protected					0.999						0.992	
Satd. Flow (prot)	0	1683	0	0	1598	0	0	0	0	0	1643	0
Flt Permitted					0.999						0.992	
Satd. Flow (perm)	0	1683	0	0	1598	0	0	0	0	0	1643	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		142			229			376			127	
Travel Time (s)		3.2			5.2			8.5			2.9	
Confl. Peds. (#/hr)	52		52	52		52	5		46	46		5
Confl. Bikes (#/hr)						2						
Peak Hour Factor	0.91	0.91	0.91	0.88	0.88	0.88	0.92	0.92	0.92	0.78	0.78	0.78
Heavy Vehicles (%)	0%	5%	0%	0%	7%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	626	0	6	466	0	0	0	0	6	6	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	626	0	0	472	0	0	0	0	0	38	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	1.10	1.10	1.10	1.14	1.14	1.14	1.10	1.10	1.10	1.05	1.05	1.05
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

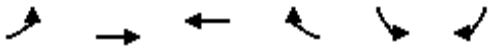
Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 51.2%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	570	0	5	410	0	0	0	0	5	5	20
Future Volume (Veh/h)	0	570	0	5	410	0	0	0	0	5	5	20
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.88	0.88	0.88	0.92	0.92	0.92	0.78	0.78	0.78
Hourly flow rate (vph)	0	626	0	6	466	0	0	0	0	6	6	26
Pedestrians		5			46			52			52	
Lane Width (ft)		13.0			12.0			0.0			14.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		1			4			0			6	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		445			357							
pX, platoon unblocked				0.81			0.81	0.81	0.81	0.81	0.81	
vC, conflicting volume	518			678			1190	1208	724	1202	1208	523
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	518			481			1116	1138	538	1131	1138	523
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 %	100			99			100	100	100	95	96	95
cM capacity (veh/h)	997			881			131	153	422	126	153	523

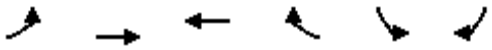
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	626	472	38
Volume Left	0	6	6
Volume Right	0	0	26
cSH	997	881	279
Volume to Capacity	0.00	0.01	0.14
Queue Length 95th (ft)	0	1	12
Control Delay (s)	0.0	0.2	20.0
Lane LOS		A	C
Approach Delay (s)	0.0	0.2	20.0
Approach LOS			C

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	5	570	400	45	25	5
Future Volume (vph)	5	570	400	45	25	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	12	12	11	11
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.986		0.977	
Flt Protected					0.960	
Satd. Flow (prot)	0	1683	1597	0	1550	0
Flt Permitted					0.960	
Satd. Flow (perm)	0	1683	1597	0	1550	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		229	128		153	
Travel Time (s)		5.2	2.9		3.5	
Confl. Peds. (#/hr)	33			33	10	4
Confl. Bikes (#/hr)				2		
Peak Hour Factor	0.91	0.91	0.93	0.93	0.52	0.52
Heavy Vehicles (%)	0%	5%	6%	2%	0%	0%
Adj. Flow (vph)	5	626	430	48	48	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	631	478	0	58	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	1.10	1.10	1.14	1.14	1.19	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	49.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	570	400	45	25	5
Future Volume (Veh/h)	5	570	400	45	25	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.91	0.91	0.93	0.93	0.52	0.52
Hourly flow rate (vph)	5	626	430	48	48	10
Pedestrians		4	10		33	
Lane Width (ft)		13.0	12.0		11.0	
Walking Speed (ft/s)		3.5	3.5		3.5	
Percent Blockage		0	1		3	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		674	128			
pX, platoon unblocked	0.77				0.86	0.77
vC, conflicting volume	511				1133	491
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	212				594	186
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				88	98
cM capacity (veh/h)	1022				388	640

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	631	478	58
Volume Left	5	0	48
Volume Right	0	48	10
cSH	1022	1700	416
Volume to Capacity	0.00	0.28	0.14
Queue Length 95th (ft)	0	0	12
Control Delay (s)	0.1	0.0	15.1
Lane LOS	A		C
Approach Delay (s)	0.1	0.0	15.1
Approach LOS			C

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	49.0%	ICU Level of Service	A
Analysis Period (min)	15		

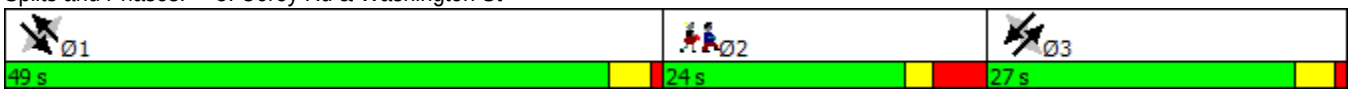
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	45	460	90	10	350	160	80	195	15	45	155	15
Future Volume (vph)	45	460	90	10	350	160	80	195	15	45	155	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	16	16	16	13	13	13	13	13	13
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		0.99			0.98			0.99			0.99	
Frt		0.980			0.958			0.993			0.991	
Flt Protected		0.996			0.999			0.986			0.990	
Satd. Flow (prot)	0	1623	0	0	1736	0	0	1692	0	0	1713	0
Flt Permitted		0.931			0.988			0.727			0.804	
Satd. Flow (perm)	0	1515	0	0	1716	0	0	1239	0	0	1387	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		128			214			198			219	
Travel Time (s)		2.9			4.9			4.5			5.0	
Confl. Peds. (#/hr)	47		34	34		47	24		15	15		24
Confl. Bikes (#/hr)			13			7						
Peak Hour Factor	0.91	0.91	0.91	0.88	0.88	0.88	0.90	0.90	0.90	0.78	0.78	0.78
Heavy Vehicles (%)	5%	6%	1%	0%	6%	1%	1%	2%	7%	0%	1%	0%
Adj. Flow (vph)	49	505	99	11	398	182	89	217	17	58	199	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	653	0	0	591	0	0	323	0	0	276	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	1.10	1.10	1.10	0.97	0.97	0.97	1.10	1.10	1.10	1.10	1.10	1.10
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	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	

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 (%)	
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)	
Turn Type	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Protected Phases		1			1			3			3	
Permitted Phases	1			1			3			3		
Detector Phase	1	1		1	1		3	3		3	3	
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)	49.0	49.0		49.0	49.0		27.0	27.0		27.0	27.0	
Total Split (%)	49.0%	49.0%		49.0%	49.0%		27.0%	27.0%		27.0%	27.0%	
Maximum Green (s)	45.0	45.0		45.0	45.0		23.0	23.0		23.0	23.0	
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?	Yes	Yes		Yes	Yes							
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		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		45.8			45.8			23.4			23.4	
Actuated g/C Ratio		0.51			0.51			0.26			0.26	
v/c Ratio		0.85			0.68			1.01			0.77	
Control Delay		35.4			24.6			90.8			49.9	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		35.4			24.6			90.8			49.9	
LOS		D			C			F			D	
Approach Delay		35.4			24.6			90.8			49.9	
Approach LOS		D			C			F			D	

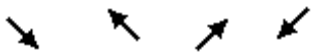
Intersection Summary			
Area Type:	CBD		
Cycle Length: 100			
Actuated Cycle Length: 90.4			
Natural Cycle: 100			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.01			
Intersection Signal Delay: 43.8		Intersection LOS: D	
Intersection Capacity Utilization 93.4%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 5: Corey Rd & Washington St



Lane Group	Ø2
Protected Phases	2
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	24.0
Total Split (s)	24.0
Total Split (%)	24%
Maximum Green (s)	18.0
Yellow Time (s)	2.0
All-Red Time (s)	4.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lag
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	10.0
Flash Dont Walk (s)	8.0
Pedestrian Calls (#/hr)	30
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	SET	NWT	NET	SWT
Lane Group Flow (vph)	653	591	323	276
v/c Ratio	0.85	0.68	1.01	0.77
Control Delay	35.4	24.6	90.8	49.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	35.4	24.6	90.8	49.9
Queue Length 50th (ft)	391	307	~241	170
Queue Length 95th (ft)	#633	434	#410	#245
Internal Link Dist (ft)	48	134	118	139
Turn Bay Length (ft)				
Base Capacity (vph)	767	870	320	359
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	0.85	0.68	1.01	0.77

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	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	45	460	90	10	350	160	80	195	15	45	155	15
Future Volume (vph)	45	460	90	10	350	160	80	195	15	45	155	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	13	13	16	16	16	13	13	13	13	13	13
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			1.00	
Flpb, ped/bikes		1.00			1.00			0.99			1.00	
Frt		0.98			0.96			0.99			0.99	
Flt Protected		1.00			1.00			0.99			0.99	
Satd. Flow (prot)		1622			1739			1681			1707	
Flt Permitted		0.93			0.99			0.73			0.80	
Satd. Flow (perm)		1516			1719			1239			1388	
Peak-hour factor, PHF	0.91	0.91	0.91	0.88	0.88	0.88	0.90	0.90	0.90	0.78	0.78	0.78
Adj. Flow (vph)	49	505	99	11	398	182	89	217	17	58	199	19
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	653	0	0	591	0	0	323	0	0	276	0
Confl. Peds. (#/hr)	47		34	34		47	24		15	15		24
Confl. Bikes (#/hr)			13			7						
Heavy Vehicles (%)	5%	6%	1%	0%	6%	1%	1%	2%	7%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		1			1			3			3	
Permitted Phases	1			1			3			3		
Actuated Green, G (s)		45.8			45.8			23.4			23.4	
Effective Green, g (s)		45.8			45.8			23.4			23.4	
Actuated g/C Ratio		0.49			0.49			0.25			0.25	
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)		746			846			311			349	
v/s Ratio Prot												
v/s Ratio Perm		c0.43			0.34			c0.26			0.20	
v/c Ratio		0.88			0.70			1.04			0.79	
Uniform Delay, d1		21.1			18.3			34.8			32.5	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		13.6			4.8			61.4			10.8	
Delay (s)		34.7			23.0			96.2			43.4	
Level of Service		C			C			F			D	
Approach Delay (s)		34.7			23.0			96.2			43.4	
Approach LOS		C			C			F			D	

Intersection Summary			
HCM 2000 Control Delay	43.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	93.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	93.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	10	510	515	10	5	5
Future Volume (vph)	10	510	515	10	5	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	16	12	11	11
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.998		0.932	
Flt Protected		0.999			0.976	
Satd. Flow (prot)	0	1683	1861	0	1504	0
Flt Permitted		0.999			0.976	
Satd. Flow (perm)	0	1683	1861	0	1504	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		214	124		137	
Travel Time (s)		4.9	2.8		3.1	
Confl. Peds. (#/hr)	40			40	1	
Confl. Bikes (#/hr)				8		
Peak Hour Factor	0.89	0.89	0.88	0.88	0.42	0.42
Heavy Vehicles (%)	0%	5%	4%	0%	0%	0%
Adj. Flow (vph)	11	573	585	11	12	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	584	596	0	24	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	1.10	1.10	0.97	1.14	1.19	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 48.7%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (veh/h)	10	510	515	10	5	5
Future Volume (Veh/h)	10	510	515	10	5	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.89	0.89	0.88	0.88	0.42	0.42
Hourly flow rate (vph)	11	573	585	11	12	12
Pedestrians			1		40	
Lane Width (ft)			16.0		11.0	
Walking Speed (ft/s)			3.5		3.5	
Percent Blockage			0		3	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		214				
pX, platoon unblocked					0.68	
vC, conflicting volume	636				1226	630
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	636				1099	630
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				92	97
cM capacity (veh/h)	924				154	468

Direction, Lane #	SE 1	NW 1	SW 1
Volume Total	584	596	24
Volume Left	11	0	12
Volume Right	0	11	12
cSH	924	1700	232
Volume to Capacity	0.01	0.35	0.10
Queue Length 95th (ft)	1	0	9
Control Delay (s)	0.3	0.0	22.3
Lane LOS	A		C
Approach Delay (s)	0.3	0.0	22.3
Approach LOS			C

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	48.7%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	0	0	0	5	0	5	5	395	0	0	210	15
Future Volume (vph)	0	0	0	5	0	5	5	395	0	0	210	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	12	16	12	12	12	13	13	12	12	13	13
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						0.991	
Flt Protected					0.976			0.999				
Satd. Flow (prot)	0	0	0	0	1525	0	0	1731	0	0	1711	0
Flt Permitted					0.976			0.999				
Satd. Flow (perm)	0	0	0	0	1525	0	0	1731	0	0	1711	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		135			90			219			653	
Travel Time (s)		3.1			2.0			5.0			14.8	
Confl. Peds. (#/hr)	4		1	1		4	20		13	13		20
Peak Hour Factor	0.25	0.25	0.25	0.44	0.44	0.44	0.83	0.83	0.83	0.89	0.89	0.89
Heavy Vehicles (%)	0%	2%	0%	2%	2%	2%	0%	2%	0%	0%	2%	7%
Adj. Flow (vph)	0	0	0	11	0	11	6	476	0	0	236	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	22	0	0	482	0	0	253	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	0.97	1.14	0.97	1.14	1.14	1.14	1.10	1.10	1.14	1.14	1.10	1.10
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 41.0%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	5	0	5	5	395	0	0	210	15
Future Volume (Veh/h)	0	0	0	5	0	5	5	395	0	0	210	15
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.25	0.25	0.44	0.44	0.44	0.83	0.83	0.83	0.89	0.89	0.89
Hourly flow rate (vph)	0	0	0	11	0	11	6	476	0	0	236	17
Pedestrians		20			13			1			4	
Lane Width (ft)		0.0			12.0			13.0			13.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		0			1			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								219			653	
pX, platoon unblocked	0.86	0.86		0.86	0.86	0.86				0.86		
vC, conflicting volume	768	766	266	746	774	493	273			489		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	651	649	266	627	659	333	273			329		
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	100	100	97	100	98	100			100		
cM capacity (veh/h)	320	330	777	333	326	601	1302			1059		

Direction, Lane #	WB 1	NE 1	SW 1
Volume Total	22	482	253
Volume Left	11	6	0
Volume Right	11	0	17
cSH	429	1302	1059
Volume to Capacity	0.05	0.00	0.00
Queue Length 95th (ft)	4	0	0
Control Delay (s)	13.9	0.1	0.0
Lane LOS	B	A	
Approach Delay (s)	13.9	0.1	0.0
Approach LOS	B		

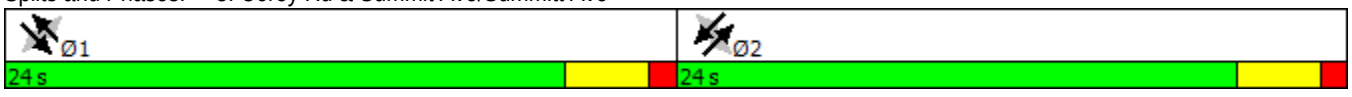
Intersection Summary				
Average Delay	0.5			
Intersection Capacity Utilization	41.0%	ICU Level of Service	A	
Analysis Period (min)	15			

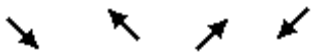
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	30	40	55	35	60	20	80	345	50	5	150	10
Future Volume (vph)	30	40	55	35	60	20	80	345	50	5	150	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	13	13	13	13	13	13	13	13	13
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		0.99			1.00			0.99			1.00	
Frt		0.941			0.977			0.986			0.992	
Flt Protected		0.988			0.985			0.992			0.998	
Satd. Flow (prot)	0	1590	0	0	1694	0	0	1693	0	0	1729	0
Flt Permitted		0.920			0.896			0.900			0.983	
Satd. Flow (perm)	0	1480	0	0	1539	0	0	1532	0	0	1702	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		188			176			653			281	
Travel Time (s)		4.3			4.0			14.8			6.4	
Confl. Peds. (#/hr)	1		3	3		1	18		29	29		18
Confl. Bikes (#/hr)						1			1			
Peak Hour Factor	0.89	0.89	0.89	0.71	0.71	0.71	0.83	0.83	0.83	0.63	0.63	0.63
Heavy Vehicles (%)	3%	2%	2%	0%	0%	0%	3%	1%	2%	0%	1%	0%
Adj. Flow (vph)	34	45	62	49	85	28	96	416	60	8	238	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	141	0	0	162	0	0	572	0	0	262	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	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
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	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2			2		
Detector Phase	1	1		1	1		2	2		2	2	
Switch Phase												
Minimum Initial (s)	14.0	14.0		14.0	14.0		14.0	14.0		14.0	14.0	
Minimum Split (s)	22.0	22.0		22.0	22.0		22.0	22.0		22.0	22.0	
Total Split (s)	24.0	24.0		24.0	24.0		24.0	24.0		24.0	24.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
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		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
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)	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	
Pedestrian Calls (#/hr)	12	12		12	12		1	1		1	1	
Act Effct Green (s)		20.0			20.0			20.0			20.0	
Actuated g/C Ratio		0.42			0.42			0.42			0.42	
v/c Ratio		0.23			0.25			0.90			0.37	
Control Delay		10.3			10.5			34.6			11.6	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		10.3			10.5			34.6			11.6	
LOS		B			B			C			B	
Approach Delay		10.3			10.5			34.6			11.6	
Approach LOS		B			B			C			B	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 48			
Actuated Cycle Length: 48			
Natural Cycle: 55			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay: 22.9		Intersection LOS: C	
Intersection Capacity Utilization 68.7%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 8: Corey Rd & Summit Ave/Summitt Ave





Lane Group	SET	NWT	NET	SWT
Lane Group Flow (vph)	141	162	572	262
v/c Ratio	0.23	0.25	0.90	0.37
Control Delay	10.3	10.5	34.6	11.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	10.3	10.5	34.6	11.6
Queue Length 50th (ft)	24	28	140	47
Queue Length 95th (ft)	52	44	#269	58
Internal Link Dist (ft)	108	96	573	201
Turn Bay Length (ft)				
Base Capacity (vph)	616	641	638	709
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	0.23	0.25	0.90	0.37

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	30	40	55	35	60	20	80	345	50	5	150	10
Future Volume (vph)	30	40	55	35	60	20	80	345	50	5	150	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	13	13	13	13	13	13	13	13	13	13	13
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			1.00			0.99			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.94			0.98			0.99			0.99	
Flt Protected		0.99			0.99			0.99			1.00	
Satd. Flow (prot)		1589			1692			1688			1729	
Flt Permitted		0.92			0.90			0.90			0.98	
Satd. Flow (perm)		1479			1538			1532			1702	
Peak-hour factor, PHF	0.89	0.89	0.89	0.71	0.71	0.71	0.83	0.83	0.83	0.63	0.63	0.63
Adj. Flow (vph)	34	45	62	49	85	28	96	416	60	8	238	16
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	141	0	0	162	0	0	572	0	0	262	0
Confl. Peds. (#/hr)	1		3	3		1	18		29	29		18
Confl. Bikes (#/hr)						1			1			
Heavy Vehicles (%)	3%	2%	2%	0%	0%	0%	3%	1%	2%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2			2		
Actuated Green, G (s)		20.0			20.0			20.0			20.0	
Effective Green, g (s)		20.0			20.0			20.0			20.0	
Actuated g/C Ratio		0.42			0.42			0.42			0.42	
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)		616			640			638			709	
v/s Ratio Prot												
v/s Ratio Perm		0.10			c0.11			c0.37			0.15	
v/c Ratio		0.23			0.25			0.90			0.37	
Uniform Delay, d1		9.0			9.1			13.0			9.7	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.9			1.0			17.7			1.5	
Delay (s)		9.9			10.1			30.7			11.1	
Level of Service		A			B			C			B	
Approach Delay (s)		9.9			10.1			30.7			11.1	
Approach LOS		A			B			C			B	

Intersection Summary			
HCM 2000 Control Delay	20.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	48.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

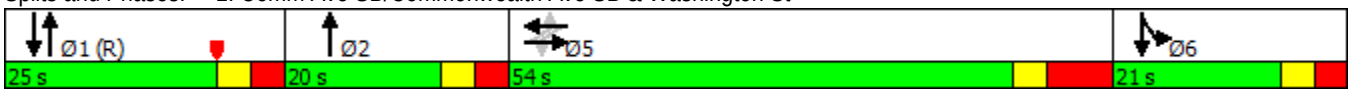
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	385	20	55	270	60	0	475	25	155	635	0
Future Volume (vph)	40	385	20	55	270	60	0	475	25	155	635	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	10	12	12
Storage Length (ft)	25		0	0		0	0		0	130		0
Storage Lanes	1		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			70		
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	1.00
Ped Bike Factor	0.90	0.99			0.94			0.98		0.81		
Frt		0.993			0.979			0.993				
Flt Protected	0.950				0.993					0.950		
Satd. Flow (prot)	1624	1638	0	0	1495	0	0	3157	0	1486	3217	0
Flt Permitted	0.440				0.671					0.950		
Satd. Flow (perm)	675	1638	0	0	1005	0	0	3157	0	1208	3217	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			9			5				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		267			303			379			331	
Travel Time (s)		6.1			6.9			8.6			7.5	
Confl. Peds. (#/hr)	179		64	64		179	58		105	105		58
Confl. Bikes (#/hr)			9			2						
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.86	0.86	0.86	0.80	0.80	0.80
Heavy Vehicles (%)	0%	3%	0%	2%	7%	2%	0%	0%	0%	2%	1%	0%
Adj. Flow (vph)	44	423	22	60	297	66	0	552	29	194	794	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	44	445	0	0	423	0	0	581	0	194	794	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)		12			12			45			45	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.25	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2			2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100			100		20	100	
Trailing Detector (ft)	0	0		0	0			0		0	0	
Detector 1 Position(ft)	0	0		0	0			0		0	0	
Detector 1 Size(ft)	20	6		20	6			6		20	6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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	Ø1	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			NA		Prot	NA	
Protected Phases		5			5			1 2		6	1 6	
Permitted Phases	5			5								
Detector Phase	5	5		5	5			1 2		6	1 6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0					6.0		
Minimum Split (s)	25.0	25.0		25.0	25.0					20.0		
Total Split (s)	54.0	54.0		54.0	54.0					21.0		
Total Split (%)	45.0%	45.0%		45.0%	45.0%					17.5%		
Maximum Green (s)	45.0	45.0		45.0	45.0					15.0		
Yellow Time (s)	3.0	3.0		3.0	3.0					3.0		
All-Red Time (s)	6.0	6.0		6.0	6.0					3.0		
Lost Time Adjust (s)	0.0	0.0			0.0					0.0		
Total Lost Time (s)	9.0	9.0			9.0					6.0		
Lead/Lag	Lead	Lead		Lead	Lead					Lag		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes					Yes		
Vehicle Extension (s)	2.0	2.0		2.0	2.0					2.0		
Recall Mode	None	None		None	None					None		
Walk Time (s)	7.0	7.0		7.0	7.0					7.0		
Flash Dont Walk (s)	9.0	9.0		9.0	9.0					7.0		
Pedestrian Calls (#/hr)	109	109		109	109					60		
Act Effct Green (s)	47.9	47.9			47.9			36.1		15.0	40.0	
Actuated g/C Ratio	0.40	0.40			0.40			0.30		0.12	0.33	
v/c Ratio	0.16	0.68			1.04			0.61		1.05	0.74	
Control Delay	26.5	36.6			91.4			38.5		130.3	40.4	
Queue Delay	0.0	0.0			0.0			0.0		0.0	0.0	
Total Delay	26.5	36.6			91.4			38.5		130.3	40.4	
LOS	C	D			F			D		F	D	
Approach Delay		35.7			91.4			38.5			58.1	
Approach LOS		D			F			D			E	

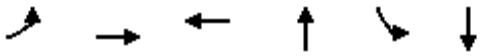
Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 23 (19%), Referenced to phase 1:NBSB, Start of Yellow			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.05			
Intersection Signal Delay: 54.7		Intersection LOS: D	
Intersection Capacity Utilization 98.8%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 1: Comm Ave SB/Commonwealth Ave SB & Washington St



Lane Group	Ø1	Ø2
Detector 2 Channel		
Detector 2 Extend (s)		
Turn Type		
Protected Phases	1	2
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	8.0	5.0
Minimum Split (s)	21.0	20.0
Total Split (s)	25.0	20.0
Total Split (%)	21%	17%
Maximum Green (s)	19.0	14.0
Yellow Time (s)	3.0	3.0
All-Red Time (s)	3.0	3.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	2.0	4.0
Recall Mode	C-Max	None
Walk Time (s)	8.0	7.0
Flash Dont Walk (s)	7.0	7.0
Pedestrian Calls (#/hr)	41	16
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	EBL	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	44	445	423	581	194	794
v/c Ratio	0.16	0.68	1.04	0.61	1.05	0.74
Control Delay	26.5	36.6	91.4	38.5	130.3	40.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.5	36.6	91.4	38.5	130.3	40.4
Queue Length 50th (ft)	21	276	~345	202	~163	285
Queue Length 95th (ft)	52	420	#573	238	#261	306
Internal Link Dist (ft)		187	223	299		251
Turn Bay Length (ft)	25				130	
Base Capacity (vph)	269	655	406	1029	185	1072
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	0.16	0.68	1.04	0.56	1.05	0.74

Intersection Summary

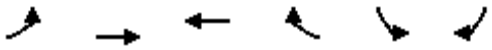
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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	385	20	55	270	60	0	475	25	155	635	0
Future Volume (vph)	40	385	20	55	270	60	0	475	25	155	635	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	10	12	12
Total Lost time (s)	9.0	9.0			9.0			6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00			1.00			0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99			0.95			0.98		1.00	1.00	
Flpb, ped/bikes	0.89	1.00			0.99			1.00		1.00	1.00	
Frt	1.00	0.99			0.98			0.99		1.00	1.00	
Flt Protected	0.95	1.00			0.99			1.00		0.95	1.00	
Satd. Flow (prot)	1449	1637			1486			3155		1486	3217	
Flt Permitted	0.44	1.00			0.67			1.00		0.95	1.00	
Satd. Flow (perm)	671	1637			1004			3155		1486	3217	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.86	0.86	0.86	0.80	0.80	0.80
Adj. Flow (vph)	44	423	22	60	297	66	0	552	29	194	794	0
RTOR Reduction (vph)	0	1	0	0	5	0	0	3	0	0	0	0
Lane Group Flow (vph)	44	444	0	0	418	0	0	578	0	194	794	0
Confl. Peds. (#/hr)	179		64	64		179	58		105	105		58
Confl. Bikes (#/hr)			9			2						
Heavy Vehicles (%)	0%	3%	0%	2%	7%	2%	0%	0%	0%	2%	1%	0%
Turn Type	Perm	NA		Perm	NA			NA		Prot	NA	
Protected Phases		5			5			1 2		6	1 6	
Permitted Phases	5			5								
Actuated Green, G (s)	47.9	47.9			47.9			36.1		15.0	40.0	
Effective Green, g (s)	47.9	47.9			47.9			36.1		15.0	40.0	
Actuated g/C Ratio	0.40	0.40			0.40			0.30		0.12	0.33	
Clearance Time (s)	9.0	9.0			9.0					6.0		
Vehicle Extension (s)	2.0	2.0			2.0					2.0		
Lane Grp Cap (vph)	267	653			400			949		185	1072	
v/s Ratio Prot		0.27						c0.18		c0.13	c0.25	
v/s Ratio Perm	0.07				c0.42							
v/c Ratio	0.16	0.68			1.04			0.61		1.05	0.74	
Uniform Delay, d1	23.2	29.7			36.0			35.9		52.5	35.4	
Progression Factor	1.00	1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2	0.1	2.2			56.9			1.3		79.6	2.4	
Delay (s)	23.3	31.9			93.0			37.2		132.1	37.9	
Level of Service	C	C			F			D		F	D	
Approach Delay (s)		31.2			93.0			37.2			56.4	
Approach LOS		C			F			D			E	

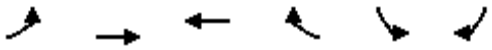
Intersection Summary			
HCM 2000 Control Delay	53.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	27.0
Intersection Capacity Utilization	98.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	20	585	370	30	110	5
Future Volume (vph)	20	585	370	30	110	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.990		0.994	
Flt Protected		0.998			0.954	
Satd. Flow (prot)	0	1727	1615	0	1622	0
Flt Permitted		0.998			0.954	
Satd. Flow (perm)	0	1727	1615	0	1622	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		303	142		425	
Travel Time (s)		6.9	3.2		9.7	
Confl. Peds. (#/hr)	140			140	54	
Confl. Bikes (#/hr)				10		1
Peak Hour Factor	0.90	0.90	0.95	0.95	0.67	0.67
Heavy Vehicles (%)	5%	2%	5%	3%	0%	0%
Adj. Flow (vph)	22	650	389	32	164	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	672	421	0	171	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.10	1.10	1.14	1.14	1.14	1.14
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 65.9%		ICU Level of Service C	
Analysis Period (min) 15			

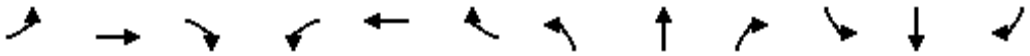


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	20	585	370	30	110	5
Future Volume (Veh/h)	20	585	370	30	110	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.95	0.95	0.67	0.67
Hourly flow rate (vph)	22	650	389	32	164	7
Pedestrians			54		140	
Lane Width (ft)			12.0		12.0	
Walking Speed (ft/s)			3.5		3.5	
Percent Blockage			5		13	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		303	499			
pX, platoon unblocked					0.78	
vC, conflicting volume	561				1293	545
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	561				1236	545
tC, single (s)	4.1				*4.5	*4.5
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				31	99
cM capacity (veh/h)	863				237	608

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	672	421	171
Volume Left	22	0	164
Volume Right	0	32	7
cSH	863	1700	243
Volume to Capacity	0.03	0.25	0.70
Queue Length 95th (ft)	2	0	117
Control Delay (s)	0.7	0.0	48.9
Lane LOS	A		E
Approach Delay (s)	0.7	0.0	48.9
Approach LOS			E

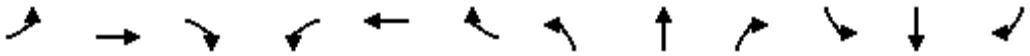
Intersection Summary			
Average Delay	7.0		
Intersection Capacity Utilization	65.9%	ICU Level of Service	C
Analysis Period (min)	15		

* User Entered Value



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	575	70	10	355	5	0	0	0	15	10	45
Future Volume (vph)	50	575	70	10	355	5	0	0	0	15	10	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	12	12	12	13	13	13	14	14	14
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			0.998						0.913	
Flt Protected		0.996			0.999						0.989	
Satd. Flow (prot)	0	1693	0	0	1612	0	0	0	0	0	1626	0
Flt Permitted		0.996			0.999						0.989	
Satd. Flow (perm)	0	1693	0	0	1612	0	0	0	0	0	1626	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		142			229			376			127	
Travel Time (s)		3.2			5.2			8.5			2.9	
Confl. Peds. (#/hr)	42		41	41		42	5		33	33		5
Confl. Bikes (#/hr)						3						
Peak Hour Factor	0.93	0.93	0.93	0.88	0.88	0.88	0.92	0.92	0.92	0.81	0.81	0.81
Heavy Vehicles (%)	0%	3%	0%	0%	6%	0%	0%	0%	0%	0%	0%	2%
Adj. Flow (vph)	54	618	75	11	403	6	0	0	0	19	12	56
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	747	0	0	420	0	0	0	0	0	87	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	1.10	1.10	1.10	1.14	1.14	1.14	1.10	1.10	1.10	1.05	1.05	1.05
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

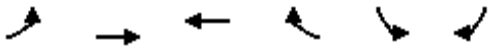
Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 83.7%		ICU Level of Service E	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	575	70	10	355	5	0	0	0	15	10	45
Future Volume (Veh/h)	50	575	70	10	355	5	0	0	0	15	10	45
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.88	0.88	0.88	0.92	0.92	0.92	0.81	0.81	0.81
Hourly flow rate (vph)	54	618	75	11	403	6	0	0	0	19	12	56
Pedestrians		5			33			41			42	
Lane Width (ft)		13.0			12.0			0.0			14.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		1			3			0			5	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		445			357							
pX, platoon unblocked				0.80			0.80	0.80	0.80	0.80	0.80	
vC, conflicting volume	451			734			1300	1278	730	1266	1312	453
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	451			541			1249	1221	535	1208	1265	453
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			99			100	100	100	83	90	90
cM capacity (veh/h)	1068			829			92	129	425	109	122	575

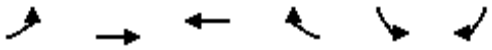
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	747	420	87
Volume Left	54	11	19
Volume Right	75	6	56
cSH	1068	829	235
Volume to Capacity	0.05	0.01	0.37
Queue Length 95th (ft)	4	1	40
Control Delay (s)	1.3	0.4	29.0
Lane LOS	A	A	D
Approach Delay (s)	1.3	0.4	29.0
Approach LOS			D

Intersection Summary				
Average Delay	2.9			
Intersection Capacity Utilization	83.7%	ICU Level of Service	E	
Analysis Period (min)	15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	10	580	365	80	70	5
Future Volume (vph)	10	580	365	80	70	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	12	12	11	11
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.976		0.991	
Flt Protected		0.999			0.956	
Satd. Flow (prot)	0	1712	1591	0	1566	0
Flt Permitted		0.999			0.956	
Satd. Flow (perm)	0	1712	1591	0	1566	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		229	128		153	
Travel Time (s)		5.2	2.9		3.5	
Confl. Peds. (#/hr)	35			35	3	5
Confl. Bikes (#/hr)				4		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.75	0.75
Heavy Vehicles (%)	11%	3%	6%	0%	0%	0%
Adj. Flow (vph)	11	630	397	87	93	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	641	484	0	100	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	1.10	1.10	1.14	1.14	1.19	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 55.5%		ICU Level of Service B	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	10	580	365	80	70	5
Future Volume (Veh/h)	10	580	365	80	70	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.75	0.75
Hourly flow rate (vph)	11	630	397	87	93	7
Pedestrians		5	3		35	
Lane Width (ft)		13.0	12.0		11.0	
Walking Speed (ft/s)		3.5	3.5		3.5	
Percent Blockage		1	0		3	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		674	128			
pX, platoon unblocked	0.79				0.86	0.79
vC, conflicting volume	519				1130	480
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	252				684	203
tC, single (s)	4.2				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.3
p0 queue free %	99				73	99
cM capacity (veh/h)	962				343	639

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	641	484	100
Volume Left	11	0	93
Volume Right	0	87	7
cSH	962	1700	354
Volume to Capacity	0.01	0.28	0.28
Queue Length 95th (ft)	1	0	28
Control Delay (s)	0.3	0.0	19.1
Lane LOS	A		C
Approach Delay (s)	0.3	0.0	19.1
Approach LOS			C

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		

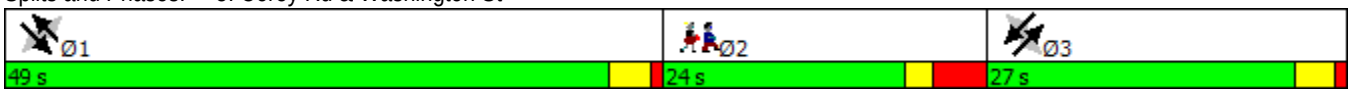
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	50	465	135	15	345	115	55	180	15	40	215	45
Future Volume (vph)	50	465	135	15	345	115	55	180	15	40	215	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	16	16	16	13	13	13	13	13	13
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			0.98			0.99			0.98	
Frt		0.972			0.967			0.992			0.980	
Flt Protected		0.996			0.998			0.989			0.993	
Satd. Flow (prot)	0	1652	0	0	1746	0	0	1676	0	0	1677	0
Flt Permitted		0.932			0.975			0.741			0.888	
Satd. Flow (perm)	0	1543	0	0	1705	0	0	1244	0	0	1498	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		128			214			198			219	
Travel Time (s)		2.9			4.9			4.5			5.0	
Confl. Peds. (#/hr)	56		35	35		56	46		11	11		46
Confl. Bikes (#/hr)			10			9						
Peak Hour Factor	0.96	0.96	0.96	0.86	0.86	0.86	0.84	0.84	0.84	0.93	0.93	0.93
Heavy Vehicles (%)	0%	3%	0%	0%	6%	2%	8%	2%	0%	0%	1%	0%
Adj. Flow (vph)	52	484	141	17	401	134	65	214	18	43	231	48
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	677	0	0	552	0	0	297	0	0	322	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	1.10	1.10	1.10	0.97	0.97	0.97	1.10	1.10	1.10	1.10	1.10	1.10
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	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	

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 (%)	
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)	
Turn Type	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Protected Phases		1			1			3			3	
Permitted Phases	1			1			3			3		
Detector Phase	1	1		1	1		3	3		3	3	
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)	49.0	49.0		49.0	49.0		27.0	27.0		27.0	27.0	
Total Split (%)	49.0%	49.0%		49.0%	49.0%		27.0%	27.0%		27.0%	27.0%	
Maximum Green (s)	45.0	45.0		45.0	45.0		23.0	23.0		23.0	23.0	
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?	Yes	Yes		Yes	Yes							
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		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		45.8			45.8			23.4			23.4	
Actuated g/C Ratio		0.51			0.51			0.26			0.26	
v/c Ratio		0.87			0.64			0.92			0.83	
Control Delay		36.6			23.3			71.2			54.3	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		36.6			23.3			71.2			54.3	
LOS		D			C			E			D	
Approach Delay		36.6			23.3			71.2			54.3	
Approach LOS		D			C			E			D	

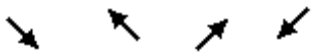
Intersection Summary			
Area Type:	CBD		
Cycle Length: 100			
Actuated Cycle Length: 90.4			
Natural Cycle: 100			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.92			
Intersection Signal Delay: 41.3		Intersection LOS: D	
Intersection Capacity Utilization 93.0%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 5: Corey Rd & Washington St



Lane Group	Ø2
Protected Phases	2
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	24.0
Total Split (s)	24.0
Total Split (%)	24%
Maximum Green (s)	18.0
Yellow Time (s)	2.0
All-Red Time (s)	4.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lag
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	10.0
Flash Dont Walk (s)	8.0
Pedestrian Calls (#/hr)	37
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	SET	NWT	NET	SWT
Lane Group Flow (vph)	677	552	297	322
v/c Ratio	0.87	0.64	0.92	0.83
Control Delay	36.6	23.3	71.2	54.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	36.6	23.3	71.2	54.3
Queue Length 50th (ft)	410	278	~205	202
Queue Length 95th (ft)	#659	379	#332	#369
Internal Link Dist (ft)	48	134	118	139
Turn Bay Length (ft)				
Base Capacity (vph)	782	864	322	388
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	0.64	0.92	0.83

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	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	50	465	135	15	345	115	55	180	15	40	215	45
Future Volume (vph)	50	465	135	15	345	115	55	180	15	40	215	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	13	13	16	16	16	13	13	13	13	13	13
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			0.98	
Flpb, ped/bikes		1.00			1.00			0.99			1.00	
Frt		0.97			0.97			0.99			0.98	
Flt Protected		1.00			1.00			0.99			0.99	
Satd. Flow (prot)		1650			1749			1661			1677	
Flt Permitted		0.93			0.98			0.74			0.89	
Satd. Flow (perm)		1544			1708			1244			1500	
Peak-hour factor, PHF	0.96	0.96	0.96	0.86	0.86	0.86	0.84	0.84	0.84	0.93	0.93	0.93
Adj. Flow (vph)	52	484	141	17	401	134	65	214	18	43	231	48
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	677	0	0	552	0	0	297	0	0	322	0
Confl. Peds. (#/hr)	56		35	35		56	46		11	11		46
Confl. Bikes (#/hr)			10			9						
Heavy Vehicles (%)	0%	3%	0%	0%	6%	2%	8%	2%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		1			1			3			3	
Permitted Phases	1			1			3			3		
Actuated Green, G (s)		45.8			45.8			23.4			23.4	
Effective Green, g (s)		45.8			45.8			23.4			23.4	
Actuated g/C Ratio		0.49			0.49			0.25			0.25	
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)		760			841			313			377	
v/s Ratio Prot												
v/s Ratio Perm		c0.44			0.32			c0.24			0.21	
v/c Ratio		0.89			0.66			0.95			0.85	
Uniform Delay, d1		21.3			17.7			34.2			33.2	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		14.8			4.0			36.7			16.3	
Delay (s)		36.2			21.7			70.9			49.5	
Level of Service		D			C			E			D	
Approach Delay (s)		36.2			21.7			70.9			49.5	
Approach LOS		D			C			E			D	

Intersection Summary			
HCM 2000 Control Delay	39.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	93.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	93.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

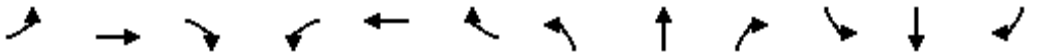
Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	15	510	475	10	5	0
Future Volume (vph)	15	510	475	10	5	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	16	12	11	11
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.997			
Flt Protected		0.999			0.950	
Satd. Flow (prot)	0	1715	1842	0	1570	0
Flt Permitted		0.999			0.950	
Satd. Flow (perm)	0	1715	1842	0	1570	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		214	124		137	
Travel Time (s)		4.9	2.8		3.1	
Confl. Peds. (#/hr)	65			65		
Confl. Bikes (#/hr)				13		
Peak Hour Factor	0.90	0.90	0.89	0.89	0.50	0.50
Heavy Vehicles (%)	0%	3%	5%	0%	0%	0%
Adj. Flow (vph)	17	567	534	11	10	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	584	545	0	10	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	1.10	1.10	0.97	1.14	1.19	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 53.3%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (veh/h)	15	510	475	10	5	0
Future Volume (Veh/h)	15	510	475	10	5	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.89	0.89	0.50	0.50
Hourly flow rate (vph)	17	567	534	11	10	0
Pedestrians					65	
Lane Width (ft)					11.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					6	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		214				
pX, platoon unblocked					0.68	
vC, conflicting volume	610				1206	604
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	610				1066	604
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				94	100
cM capacity (veh/h)	923				156	473

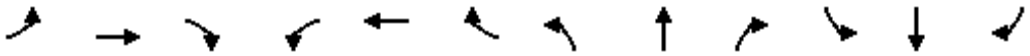
Direction, Lane #	SE 1	NW 1	SW 1
Volume Total	584	545	10
Volume Left	17	0	10
Volume Right	0	11	0
cSH	923	1700	156
Volume to Capacity	0.02	0.32	0.06
Queue Length 95th (ft)	1	0	5
Control Delay (s)	0.5	0.0	29.6
Lane LOS	A		D
Approach Delay (s)	0.5	0.0	29.6
Approach LOS			D

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	53.3%	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)	0	0	0	5	0	0	5	330	10	5	295	25
Future Volume (vph)	0	0	0	5	0	0	5	330	10	5	295	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	12	16	12	12	12	13	13	12	12	13	13
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			0.990	
Flt Protected					0.950			0.999			0.999	
Satd. Flow (prot)	0	0	0	0	1624	0	0	1742	0	0	1748	0
Flt Permitted					0.950			0.999			0.999	
Satd. Flow (perm)	0	0	0	0	1624	0	0	1742	0	0	1748	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		135			108			219			653	
Travel Time (s)		3.1			2.5			5.0			14.8	
Confl. Peds. (#/hr)	7					7	13		6	6		13
Confl. Bikes (#/hr)									2			1
Peak Hour Factor	0.25	0.25	0.25	0.44	0.44	0.44	0.94	0.94	0.94	0.89	0.89	0.89
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%
Adj. Flow (vph)	0	0	0	11	0	0	5	351	11	6	331	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	11	0	0	367	0	0	365	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	0.97	1.14	0.97	1.14	1.14	1.14	1.10	1.10	1.14	1.14	1.10	1.10
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 35.1%		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)	0	0	0	5	0	0	5	330	10	5	295	25
Future Volume (Veh/h)	0	0	0	5	0	0	5	330	10	5	295	25
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.25	0.25	0.44	0.44	0.44	0.94	0.94	0.94	0.89	0.89	0.89
Hourly flow rate (vph)	0	0	0	11	0	0	5	351	11	6	331	28
Pedestrians		13			6						7	
Lane Width (ft)		0.0			12.0						13.0	
Walking Speed (ft/s)		3.5			3.5						3.5	
Percent Blockage		0			1						1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								219			653	
pX, platoon unblocked	0.89	0.89	0.99	0.89	0.89	0.88	0.99			0.88		
vC, conflicting volume	744	748	358	730	756	370	372			368		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	627	632	348	611	641	220	362			219		
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	100	100	97	100	100	100			99		
cM capacity (veh/h)	348	350	694	357	346	719	1197			1197		

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	11	367	365
Volume Left	11	5	6
Volume Right	0	11	28
cSH	357	1197	1197
Volume to Capacity	0.03	0.00	0.01
Queue Length 95th (ft)	2	0	0
Control Delay (s)	15.4	0.2	0.2
Lane LOS	C	A	A
Approach Delay (s)	15.4	0.2	0.2
Approach LOS	C		

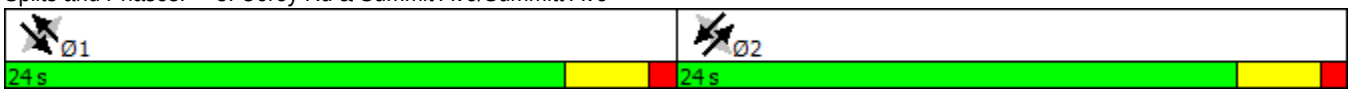
Intersection Summary				
Average Delay	0.4			
Intersection Capacity Utilization	35.1%	ICU Level of Service	A	
Analysis Period (min)	15			

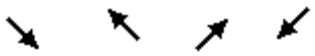
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	15	65	70	45	100	5	75	260	50	5	220	10
Future Volume (vph)	15	65	70	45	100	5	75	260	50	5	220	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	13	13	13	13	13	13	13	13	13
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			1.00			0.99			1.00	
Frt		0.937			0.995			0.982			0.994	
Flt Protected		0.995			0.985			0.990			0.999	
Satd. Flow (prot)	0	1616	0	0	1730	0	0	1693	0	0	1733	0
Flt Permitted		0.971			0.887			0.891			0.992	
Satd. Flow (perm)	0	1576	0	0	1554	0	0	1515	0	0	1721	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		188			176			653			281	
Travel Time (s)		4.3			4.0			14.8			6.4	
Confl. Peds. (#/hr)	7		9	9		7	34		18	18		34
Confl. Bikes (#/hr)									1			1
Peak Hour Factor	0.87	0.87	0.87	0.89	0.89	0.89	0.88	0.88	0.88	0.91	0.91	0.91
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	1%	1%	0%	0%	1%	0%
Adj. Flow (vph)	17	75	80	51	112	6	85	295	57	5	242	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	172	0	0	169	0	0	437	0	0	258	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	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
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	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2			2		
Detector Phase	1	1		1	1		2	2		2	2	
Switch Phase												
Minimum Initial (s)	14.0	14.0		14.0	14.0		14.0	14.0		14.0	14.0	
Minimum Split (s)	22.0	22.0		22.0	22.0		22.0	22.0		22.0	22.0	
Total Split (s)	24.0	24.0		24.0	24.0		24.0	24.0		24.0	24.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
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		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
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)	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	
Pedestrian Calls (#/hr)	13	13		13	13		4	4		4	4	
Act Effct Green (s)		20.0			20.0			20.0			20.0	
Actuated g/C Ratio		0.42			0.42			0.42			0.42	
v/c Ratio		0.26			0.26			0.69			0.36	
Control Delay		10.6			10.6			19.1			11.5	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		10.6			10.6			19.1			11.5	
LOS		B			B			B			B	
Approach Delay		10.6			10.6			19.1			11.5	
Approach LOS		B			B			B			B	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 48			
Actuated Cycle Length: 48			
Natural Cycle: 45			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay: 14.4		Intersection LOS: B	
Intersection Capacity Utilization 68.1%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 8: Corey Rd & Summit Ave/Summitt Ave





Lane Group	SET	NWT	NET	SWT
Lane Group Flow (vph)	172	169	437	258
v/c Ratio	0.26	0.26	0.69	0.36
Control Delay	10.6	10.6	19.1	11.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	10.6	10.6	19.1	11.5
Queue Length 50th (ft)	30	29	94	47
Queue Length 95th (ft)	60	61	#181	90
Internal Link Dist (ft)	108	96	573	201
Turn Bay Length (ft)				
Base Capacity (vph)	656	647	631	717
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	0.26	0.69	0.36

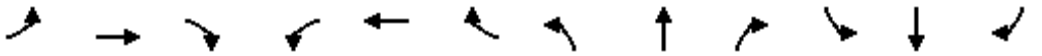
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	15	65	70	45	100	5	75	260	50	5	220	10
Future Volume (vph)	15	65	70	45	100	5	75	260	50	5	220	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	13	13	13	13	13	13	13	13	13	13	13
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			1.00			0.99			1.00	
Flpb, ped/bikes		1.00			1.00			0.99			1.00	
Frt		0.94			1.00			0.98			0.99	
Flt Protected		1.00			0.99			0.99			1.00	
Satd. Flow (prot)		1615			1726			1685			1734	
Flt Permitted		0.97			0.89			0.89			0.99	
Satd. Flow (perm)		1576			1554			1516			1722	
Peak-hour factor, PHF	0.87	0.87	0.87	0.89	0.89	0.89	0.88	0.88	0.88	0.91	0.91	0.91
Adj. Flow (vph)	17	75	80	51	112	6	85	295	57	5	242	11
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	172	0	0	169	0	0	437	0	0	258	0
Confl. Peds. (#/hr)	7		9	9		7	34		18	18		34
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	1%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2			2		
Actuated Green, G (s)		20.0			20.0			20.0			20.0	
Effective Green, g (s)		20.0			20.0			20.0			20.0	
Actuated g/C Ratio		0.42			0.42			0.42			0.42	
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)		656			647			631			717	
v/s Ratio Prot												
v/s Ratio Perm		c0.11			0.11			c0.29			0.15	
v/c Ratio		0.26			0.26			0.69			0.36	
Uniform Delay, d1		9.2			9.2			11.5			9.6	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.0			1.0			6.2			1.4	
Delay (s)		10.1			10.1			17.6			11.0	
Level of Service		B			B			B			B	
Approach Delay (s)		10.1			10.1			17.6			11.0	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	13.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	48.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



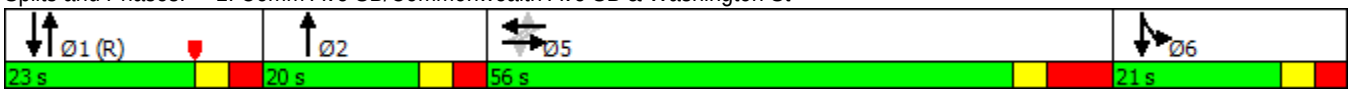
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	67	381	40	64	315	81	0	843	54	126	374	0
Future Volume (vph)	67	381	40	64	315	81	0	843	54	126	374	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	10	12	12
Storage Length (ft)	25		0	0		0	0		0	130		0
Storage Lanes	1		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			70		
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	1.00
Ped Bike Factor	0.91	0.99			0.94			0.98		0.91		
Frt		0.986			0.976			0.991				
Flt Protected	0.950				0.993					0.950		
Satd. Flow (prot)	1562	1576	0	0	1507	0	0	3121	0	1417	3185	0
Flt Permitted	0.399				0.576					0.950		
Satd. Flow (perm)	598	1576	0	0	874	0	0	3121	0	1284	3185	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			10			6				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		267			303			379			331	
Travel Time (s)		6.1			6.9			8.6			7.5	
Confl. Peds. (#/hr)	189		63	63		189	84		86	86		84
Confl. Bikes (#/hr)			8			6						
Peak Hour Factor	0.87	0.87	0.87	0.96	0.96	0.96	0.96	0.96	0.96	0.88	0.88	0.88
Heavy Vehicles (%)	4%	6%	0%	2%	4%	3%	0%	1%	0%	7%	2%	0%
Adj. Flow (vph)	77	438	46	67	328	84	0	878	56	143	425	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	77	484	0	0	479	0	0	934	0	143	425	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)		12			12			45			45	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.25	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2			2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100			100		20	100	
Trailing Detector (ft)	0	0		0	0			0		0	0	
Detector 1 Position(ft)	0	0		0	0			0		0	0	
Detector 1 Size(ft)	20	6		20	6			6		20	6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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	Ø1	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			NA		Prot	NA	
Protected Phases		5			5			1 2		6	1 6	
Permitted Phases	5			5								
Detector Phase	5	5		5	5			1 2		6	1 6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0					6.0		
Minimum Split (s)	25.0	25.0		25.0	25.0					20.0		
Total Split (s)	56.0	56.0		56.0	56.0					21.0		
Total Split (%)	46.7%	46.7%		46.7%	46.7%					17.5%		
Maximum Green (s)	47.0	47.0		47.0	47.0					15.0		
Yellow Time (s)	3.0	3.0		3.0	3.0					3.0		
All-Red Time (s)	6.0	6.0		6.0	6.0					3.0		
Lost Time Adjust (s)	0.0	0.0			0.0					0.0		
Total Lost Time (s)	9.0	9.0			9.0					6.0		
Lead/Lag	Lead	Lead		Lead	Lead					Lag		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes					Yes		
Vehicle Extension (s)	2.0	2.0		2.0	2.0					2.0		
Recall Mode	None	None		None	None					None		
Walk Time (s)	7.0	7.0		7.0	7.0					7.0		
Flash Dont Walk (s)	9.0	9.0		9.0	9.0					7.0		
Pedestrian Calls (#/hr)	63	63		63	63					69		
Act Effct Green (s)	47.0	47.0			47.0			37.5		14.5	38.0	
Actuated g/C Ratio	0.39	0.39			0.39			0.31		0.12	0.32	
v/c Ratio	0.33	0.78			1.38			0.95		0.84	0.42	
Control Delay	30.5	42.0			217.2			60.2		88.4	33.9	
Queue Delay	0.0	0.0			0.0			0.0		0.0	0.0	
Total Delay	30.5	42.0			217.2			60.2		88.4	33.9	
LOS	C	D			F			E		F	C	
Approach Delay		40.4			217.2			60.2			47.6	
Approach LOS		D			F			E			D	

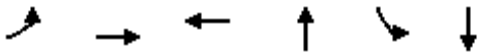
Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 37 (31%), Referenced to phase 1:NBSB, Start of Yellow			
Natural Cycle: 140			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.38			
Intersection Signal Delay: 82.6		Intersection LOS: F	
Intersection Capacity Utilization 115.5%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 1: Comm Ave SB/Commonwealth Ave SB & Washington St



Lane Group	Ø1	Ø2
Detector 2 Channel		
Detector 2 Extend (s)		
Turn Type		
Protected Phases	1	2
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	8.0	5.0
Minimum Split (s)	21.0	20.0
Total Split (s)	23.0	20.0
Total Split (%)	19%	17%
Maximum Green (s)	17.0	14.0
Yellow Time (s)	3.0	3.0
All-Red Time (s)	3.0	3.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	2.0	4.0
Recall Mode	C-Max	None
Walk Time (s)	8.0	7.0
Flash Dont Walk (s)	7.0	7.0
Pedestrian Calls (#/hr)	43	16
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		

Intersection Summary

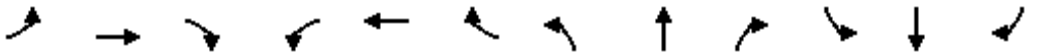


Lane Group	EBL	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	77	484	479	934	143	425
v/c Ratio	0.33	0.78	1.38	0.95	0.84	0.42
Control Delay	30.5	42.0	217.2	60.2	88.4	33.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.5	42.0	217.2	60.2	88.4	33.9
Queue Length 50th (ft)	41	322	~490	372	109	136
Queue Length 95th (ft)	82	438	#701	#513	#214	180
Internal Link Dist (ft)		187	223	299		251
Turn Bay Length (ft)	25				130	
Base Capacity (vph)	234	620	348	979	177	990
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	0.33	0.78	1.38	0.95	0.81	0.43

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

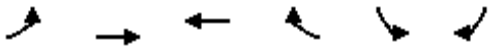
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	67	381	40	64	315	81	0	843	54	126	374	0
Future Volume (vph)	67	381	40	64	315	81	0	843	54	126	374	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	10	12	12
Total Lost time (s)	9.0	9.0			9.0			6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00			1.00			0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99			0.94			0.98		1.00	1.00	
Flpb, ped/bikes	0.91	1.00			1.00			1.00		1.00	1.00	
Frt	1.00	0.99			0.98			0.99		1.00	1.00	
Flt Protected	0.95	1.00			0.99			1.00		0.95	1.00	
Satd. Flow (prot)	1424	1575			1508			3121		1417	3185	
Flt Permitted	0.40	1.00			0.58			1.00		0.95	1.00	
Satd. Flow (perm)	597	1575			875			3121		1417	3185	
Peak-hour factor, PHF	0.87	0.87	0.87	0.96	0.96	0.96	0.96	0.96	0.96	0.88	0.88	0.88
Adj. Flow (vph)	77	438	46	67	328	84	0	878	56	143	425	0
RTOR Reduction (vph)	0	3	0	0	6	0	0	4	0	0	0	0
Lane Group Flow (vph)	77	481	0	0	473	0	0	930	0	143	425	0
Confl. Peds. (#/hr)	189		63	63		189	84		86	86		84
Confl. Bikes (#/hr)			8			6						
Heavy Vehicles (%)	4%	6%	0%	2%	4%	3%	0%	1%	0%	7%	2%	0%
Turn Type	Perm	NA		Perm	NA			NA		Prot	NA	
Protected Phases		5			5			1 2		6	1 6	
Permitted Phases	5			5								
Actuated Green, G (s)	47.0	47.0			47.0			37.5		14.5	38.0	
Effective Green, g (s)	47.0	47.0			47.0			37.5		14.5	38.0	
Actuated g/C Ratio	0.39	0.39			0.39			0.31		0.12	0.32	
Clearance Time (s)	9.0	9.0			9.0					6.0		
Vehicle Extension (s)	2.0	2.0			2.0					2.0		
Lane Grp Cap (vph)	233	616			342			975		171	1008	
v/s Ratio Prot		0.31						c0.30		c0.10	0.13	
v/s Ratio Perm	0.13				c0.54							
v/c Ratio	0.33	0.78			1.38			0.95		0.84	0.42	
Uniform Delay, d1	25.5	32.0			36.5			40.4		51.6	32.3	
Progression Factor	1.00	1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2	0.3	5.9			189.5			18.7		27.2	0.1	
Delay (s)	25.8	37.9			226.0			59.1		78.8	32.4	
Level of Service	C	D			F			E		E	C	
Approach Delay (s)		36.2			226.0			59.1			44.1	
Approach LOS		D			F			E			D	

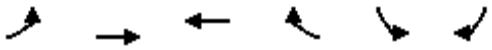
Intersection Summary			
HCM 2000 Control Delay	82.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	27.0
Intersection Capacity Utilization	115.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	31	570	445	36	51	26
Future Volume (vph)	31	570	445	36	51	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.990		0.955	
Flt Protected		0.997			0.968	
Satd. Flow (prot)	0	1674	1615	0	1540	0
Flt Permitted		0.997			0.968	
Satd. Flow (perm)	0	1674	1615	0	1540	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		303	142		425	
Travel Time (s)		6.9	3.2		9.7	
Confl. Peds. (#/hr)	70			70	37	
Confl. Bikes (#/hr)				7		
Peak Hour Factor	0.96	0.96	0.94	0.94	0.63	0.63
Heavy Vehicles (%)	10%	5%	5%	3%	2%	4%
Adj. Flow (vph)	32	594	473	38	81	41
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	626	511	0	122	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.10	1.10	1.14	1.14	1.14	1.14
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 73.0%		ICU Level of Service D	
Analysis Period (min) 15			

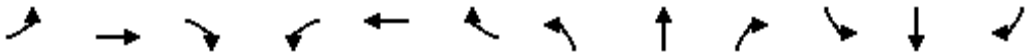


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	31	570	445	36	51	26
Future Volume (Veh/h)	31	570	445	36	51	26
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.96	0.96	0.94	0.94	0.63	0.63
Hourly flow rate (vph)	32	594	473	38	81	41
Pedestrians			37		70	
Lane Width (ft)			12.0		12.0	
Walking Speed (ft/s)			3.5		3.5	
Percent Blockage			4		7	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		303	499			
pX, platoon unblocked					0.74	
vC, conflicting volume	581				1257	562
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	581				1174	562
tC, single (s)	4.2				*4.5	*4.5
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.3
p0 queue free %	96				68	94
cM capacity (veh/h)	891				256	640

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	626	511	122
Volume Left	32	0	81
Volume Right	0	38	41
cSH	891	1700	321
Volume to Capacity	0.04	0.30	0.38
Queue Length 95th (ft)	3	0	43
Control Delay (s)	1.0	0.0	22.9
Lane LOS	A		C
Approach Delay (s)	1.0	0.0	22.9
Approach LOS			C

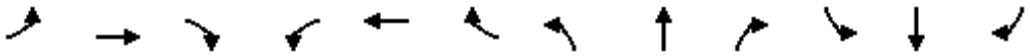
Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	73.0%	ICU Level of Service	D
Analysis Period (min)	15		

* User Entered Value



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	621	0	5	450	0	0	0	0	5	5	21
Future Volume (vph)	0	621	0	5	450	0	0	0	0	5	5	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	12	12	12	13	13	13	14	14	14
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											0.907	
Flt Protected					0.999						0.992	
Satd. Flow (prot)	0	1683	0	0	1598	0	0	0	0	0	1641	0
Flt Permitted					0.999						0.992	
Satd. Flow (perm)	0	1683	0	0	1598	0	0	0	0	0	1641	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		142			229			376			127	
Travel Time (s)		3.2			5.2			8.5			2.9	
Confl. Peds. (#/hr)	52		52	52		52	5		46	46		5
Confl. Bikes (#/hr)						2						
Peak Hour Factor	0.91	0.91	0.91	0.88	0.88	0.88	0.92	0.92	0.92	0.78	0.78	0.78
Heavy Vehicles (%)	0%	5%	0%	0%	7%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	682	0	6	511	0	0	0	0	6	6	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	682	0	0	517	0	0	0	0	0	39	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	1.10	1.10	1.10	1.14	1.14	1.14	1.10	1.10	1.10	1.05	1.05	1.05
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

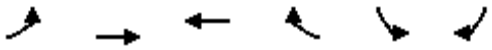
Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 54.2%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	621	0	5	450	0	0	0	0	5	5	21
Future Volume (Veh/h)	0	621	0	5	450	0	0	0	0	5	5	21
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.88	0.88	0.88	0.92	0.92	0.92	0.78	0.78	0.78
Hourly flow rate (vph)	0	682	0	6	511	0	0	0	0	6	6	27
Pedestrians		5			46			52			52	
Lane Width (ft)		13.0			12.0			0.0			14.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		1			4			0			6	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		445			357							
pX, platoon unblocked				0.76			0.76	0.76	0.76	0.76	0.76	
vC, conflicting volume	563			734			1292	1309	780	1303	1309	568
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	563			488			1225	1248	549	1240	1248	568
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 %	100			99			100	100	100	94	95	95
cM capacity (veh/h)	960			822			102	124	390	100	124	493

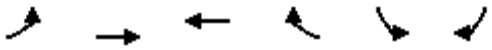
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	682	517	39
Volume Left	0	6	6
Volume Right	0	0	27
cSH	960	822	239
Volume to Capacity	0.00	0.01	0.16
Queue Length 95th (ft)	0	1	14
Control Delay (s)	0.0	0.2	23.0
Lane LOS		A	C
Approach Delay (s)	0.0	0.2	23.0
Approach LOS			C

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	5	621	440	46	26	5
Future Volume (vph)	5	621	440	46	26	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	12	12	11	11
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.987		0.977	
Flt Protected					0.960	
Satd. Flow (prot)	0	1683	1598	0	1550	0
Flt Permitted					0.960	
Satd. Flow (perm)	0	1683	1598	0	1550	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		229	128		153	
Travel Time (s)		5.2	2.9		3.5	
Confl. Peds. (#/hr)	33			33	10	4
Confl. Bikes (#/hr)				2		
Peak Hour Factor	0.91	0.91	0.93	0.93	0.52	0.52
Heavy Vehicles (%)	0%	5%	6%	2%	0%	0%
Adj. Flow (vph)	5	682	473	49	50	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	687	522	0	60	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	1.10	1.10	1.14	1.14	1.19	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 52.0%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	621	440	46	26	5
Future Volume (Veh/h)	5	621	440	46	26	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.91	0.91	0.93	0.93	0.52	0.52
Hourly flow rate (vph)	5	682	473	49	50	10
Pedestrians		4	10		33	
Lane Width (ft)		13.0	12.0		11.0	
Walking Speed (ft/s)		3.5	3.5		3.5	
Percent Blockage		0	1		3	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		674	128			
pX, platoon unblocked	0.75				0.86	0.75
vC, conflicting volume	555				1232	534
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	235				588	207
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				87	98
cM capacity (veh/h)	975				392	605

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	687	522	60
Volume Left	5	0	50
Volume Right	0	49	10
cSH	975	1700	417
Volume to Capacity	0.01	0.31	0.14
Queue Length 95th (ft)	0	0	12
Control Delay (s)	0.1	0.0	15.1
Lane LOS	A		C
Approach Delay (s)	0.1	0.0	15.1
Approach LOS			C

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	52.0%	ICU Level of Service	A
Analysis Period (min)	15		

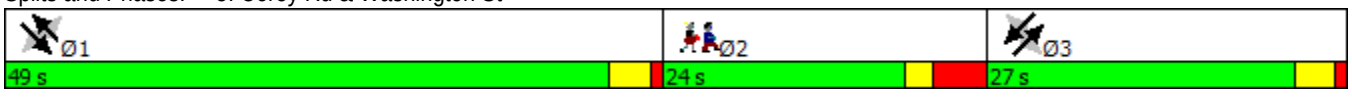
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	60	492	95	10	369	169	83	203	15	55	165	34
Future Volume (vph)	60	492	95	10	369	169	83	203	15	55	165	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	16	16	16	13	13	13	13	13	13
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		0.99			0.98			0.99			0.99	
Frt		0.980			0.958			0.993			0.982	
Flt Protected		0.995			0.999			0.986			0.989	
Satd. Flow (prot)	0	1622	0	0	1735	0	0	1692	0	0	1689	0
Flt Permitted		0.894			0.987			0.683			0.773	
Satd. Flow (perm)	0	1455	0	0	1714	0	0	1165	0	0	1316	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		128			214			198			219	
Travel Time (s)		2.9			4.9			4.5			5.0	
Confl. Peds. (#/hr)	47		34	34		47	24		15	15		24
Confl. Bikes (#/hr)			13			7						
Peak Hour Factor	0.91	0.91	0.91	0.88	0.88	0.88	0.90	0.90	0.90	0.78	0.78	0.78
Heavy Vehicles (%)	5%	6%	1%	0%	6%	1%	1%	2%	7%	0%	1%	0%
Adj. Flow (vph)	66	541	104	11	419	192	92	226	17	71	212	44
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	711	0	0	622	0	0	335	0	0	327	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	1.10	1.10	1.10	0.97	0.97	0.97	1.10	1.10	1.10	1.10	1.10	1.10
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	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	

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 (%)	
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)	
Turn Type	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Protected Phases		1			1			3			3	
Permitted Phases	1			1			3			3		
Detector Phase	1	1		1	1		3	3		3	3	
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)	49.0	49.0		49.0	49.0		27.0	27.0		27.0	27.0	
Total Split (%)	49.0%	49.0%		49.0%	49.0%		27.0%	27.0%		27.0%	27.0%	
Maximum Green (s)	45.0	45.0		45.0	45.0		23.0	23.0		23.0	23.0	
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?	Yes	Yes		Yes	Yes							
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		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		45.8			45.8			23.4			23.4	
Actuated g/C Ratio		0.51			0.51			0.26			0.26	
v/c Ratio		0.96			0.72			1.11			0.96	
Control Delay		52.0			26.1			121.3			77.5	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		52.0			26.1			121.3			77.5	
LOS		D			C			F			E	
Approach Delay		52.0			26.1			121.3			77.5	
Approach LOS		D			C			F			E	

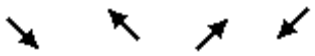
Intersection Summary			
Area Type:	CBD		
Cycle Length: 100			
Actuated Cycle Length: 90.4			
Natural Cycle: 130			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.11			
Intersection Signal Delay: 59.8		Intersection LOS: E	
Intersection Capacity Utilization 106.5%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 5: Corey Rd & Washington St



Lane Group	Ø2
Protected Phases	2
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	24.0
Total Split (s)	24.0
Total Split (%)	24%
Maximum Green (s)	18.0
Yellow Time (s)	2.0
All-Red Time (s)	4.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lag
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	10.0
Flash Dont Walk (s)	8.0
Pedestrian Calls (#/hr)	30
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	SET	NWT	NET	SWT
Lane Group Flow (vph)	711	622	335	327
v/c Ratio	0.96	0.72	1.11	0.96
Control Delay	52.0	26.1	121.3	77.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	52.0	26.1	121.3	77.5
Queue Length 50th (ft)	~512	332	~268	~234
Queue Length 95th (ft)	#733	469	#440	#324
Internal Link Dist (ft)	48	134	118	139
Turn Bay Length (ft)				
Base Capacity (vph)	737	868	301	340
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	0.72	1.11	0.96

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	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	60	492	95	10	369	169	83	203	15	55	165	34
Future Volume (vph)	60	492	95	10	369	169	83	203	15	55	165	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	13	13	16	16	16	13	13	13	13	13	13
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		1.00			1.00			0.99			1.00	
Frt		0.98			0.96			0.99			0.98	
Flt Protected		1.00			1.00			0.99			0.99	
Satd. Flow (prot)		1622			1739			1684			1685	
Flt Permitted		0.89			0.99			0.68			0.77	
Satd. Flow (perm)		1457			1718			1166			1317	
Peak-hour factor, PHF	0.91	0.91	0.91	0.88	0.88	0.88	0.90	0.90	0.90	0.78	0.78	0.78
Adj. Flow (vph)	66	541	104	11	419	192	92	226	17	71	212	44
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	711	0	0	622	0	0	335	0	0	327	0
Confl. Peds. (#/hr)	47		34	34		47	24		15	15		24
Confl. Bikes (#/hr)			13			7						
Heavy Vehicles (%)	5%	6%	1%	0%	6%	1%	1%	2%	7%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		1			1			3			3	
Permitted Phases	1			1			3			3		
Actuated Green, G (s)		45.8			45.8			23.4			23.4	
Effective Green, g (s)		45.8			45.8			23.4			23.4	
Actuated g/C Ratio		0.49			0.49			0.25			0.25	
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)		717			846			293			331	
v/s Ratio Prot												
v/s Ratio Perm		c0.49			0.36			c0.29			0.25	
v/c Ratio		0.99			0.74			1.14			0.99	
Uniform Delay, d1		23.4			18.8			34.8			34.7	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		31.6			5.6			97.1			45.6	
Delay (s)		55.1			24.4			131.9			80.3	
Level of Service		E			C			F			F	
Approach Delay (s)		55.1			24.4			131.9			80.3	
Approach LOS		E			C			F			F	

Intersection Summary			
HCM 2000 Control Delay	62.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	93.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	106.5%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	10	550	543	10	5	5
Future Volume (vph)	10	550	543	10	5	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	16	12	11	11
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.998		0.932	
Flt Protected		0.999			0.976	
Satd. Flow (prot)	0	1683	1861	0	1504	0
Flt Permitted		0.999			0.976	
Satd. Flow (perm)	0	1683	1861	0	1504	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		214	124		137	
Travel Time (s)		4.9	2.8		3.1	
Confl. Peds. (#/hr)	40			40	1	
Confl. Bikes (#/hr)				8		
Peak Hour Factor	0.89	0.89	0.88	0.88	0.42	0.42
Heavy Vehicles (%)	0%	5%	4%	0%	0%	0%
Adj. Flow (vph)	11	618	617	11	12	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	629	628	0	24	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	1.10	1.10	0.97	1.14	1.19	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 51.1%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (veh/h)	10	550	543	10	5	5
Future Volume (Veh/h)	10	550	543	10	5	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.89	0.89	0.88	0.88	0.42	0.42
Hourly flow rate (vph)	11	618	617	11	12	12
Pedestrians			1		40	
Lane Width (ft)			16.0		11.0	
Walking Speed (ft/s)			3.5		3.5	
Percent Blockage			0		3	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		214				
pX, platoon unblocked					0.63	
vC, conflicting volume	668				1304	662
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	668				1188	662
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				90	97
cM capacity (veh/h)	899				126	449

Direction, Lane #	SE 1	NW 1	SW 1
Volume Total	629	628	24
Volume Left	11	0	12
Volume Right	0	11	12
cSH	899	1700	196
Volume to Capacity	0.01	0.37	0.12
Queue Length 95th (ft)	1	0	10
Control Delay (s)	0.3	0.0	25.9
Lane LOS	A		D
Approach Delay (s)	0.3	0.0	25.9
Approach LOS			D

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	51.1%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	0	0	0	39	0	11	5	407	20	3	215	15
Future Volume (vph)	0	0	0	39	0	11	5	407	20	3	215	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	12	16	12	12	12	13	13	12	12	13	13
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					0.970			0.994			0.991	
Flt Protected					0.962			0.999			0.999	
Satd. Flow (prot)	0	0	0	0	1564	0	0	1722	0	0	1710	0
Flt Permitted					0.962			0.999			0.999	
Satd. Flow (perm)	0	0	0	0	1564	0	0	1722	0	0	1710	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		135			90			219			653	
Travel Time (s)		3.1			2.0			5.0			14.8	
Confl. Peds. (#/hr)	4		1	1		4	20		13	13		20
Peak Hour Factor	0.25	0.25	0.25	0.44	0.44	0.44	0.83	0.83	0.83	0.89	0.89	0.89
Heavy Vehicles (%)	0%	2%	0%	2%	2%	2%	0%	2%	0%	0%	2%	7%
Adj. Flow (vph)	0	0	0	89	0	25	6	490	24	3	242	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	114	0	0	520	0	0	262	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	0.97	1.14	0.97	1.14	1.14	1.14	1.10	1.10	1.14	1.14	1.10	1.10
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 45.4%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	39	0	11	5	407	20	3	215	15
Future Volume (Veh/h)	0	0	0	39	0	11	5	407	20	3	215	15
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.25	0.25	0.44	0.44	0.44	0.83	0.83	0.83	0.89	0.89	0.89
Hourly flow rate (vph)	0	0	0	89	0	25	6	490	24	3	242	17
Pedestrians		20			13			1			4	
Lane Width (ft)		0.0			12.0			13.0			13.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		0			1			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								219			653	
pX, platoon unblocked	0.85	0.85		0.85	0.85	0.85				0.85		
vC, conflicting volume	820	816	272	784	812	519	279			527		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	703	699	272	662	695	352	279			361		
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	100	100	71	100	96	100			100		
cM capacity (veh/h)	284	305	771	311	306	581	1295			1020		

Direction, Lane #	WB 1	NE 1	SW 1
Volume Total	114	520	262
Volume Left	89	6	3
Volume Right	25	24	17
cSH	347	1295	1020
Volume to Capacity	0.33	0.00	0.00
Queue Length 95th (ft)	35	0	0
Control Delay (s)	20.4	0.1	0.1
Lane LOS	C	A	A
Approach Delay (s)	20.4	0.1	0.1
Approach LOS	C		

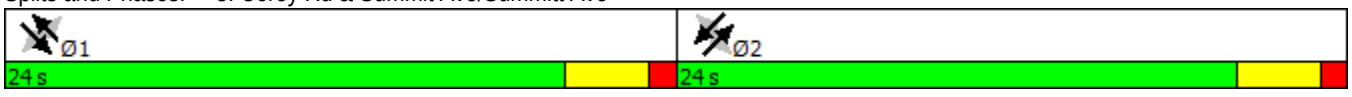
Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	45.4%	ICU Level of Service	A
Analysis Period (min)	15		

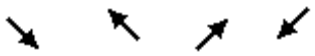
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	31	41	57	36	62	21	83	360	52	5	156	10
Future Volume (vph)	31	41	57	36	62	21	83	360	52	5	156	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	13	13	13	13	13	13	13	13	13
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		0.99			1.00			0.99			1.00	
Frt		0.940			0.976			0.986			0.992	
Flt Protected		0.988			0.985			0.992			0.999	
Satd. Flow (prot)	0	1588	0	0	1692	0	0	1693	0	0	1731	0
Flt Permitted		0.918			0.893			0.902			0.983	
Satd. Flow (perm)	0	1475	0	0	1532	0	0	1536	0	0	1703	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		188			176			653			281	
Travel Time (s)		4.3			4.0			14.8			6.4	
Confl. Peds. (#/hr)	1		3	3		1	18		29	29		18
Confl. Bikes (#/hr)						1			1			
Peak Hour Factor	0.89	0.89	0.89	0.71	0.71	0.71	0.83	0.83	0.83	0.63	0.63	0.63
Heavy Vehicles (%)	3%	2%	2%	0%	0%	0%	3%	1%	2%	0%	1%	0%
Adj. Flow (vph)	35	46	64	51	87	30	100	434	63	8	248	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	145	0	0	168	0	0	597	0	0	272	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	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
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	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2			2		
Detector Phase	1	1		1	1		2	2		2	2	
Switch Phase												
Minimum Initial (s)	14.0	14.0		14.0	14.0		14.0	14.0		14.0	14.0	
Minimum Split (s)	22.0	22.0		22.0	22.0		22.0	22.0		22.0	22.0	
Total Split (s)	24.0	24.0		24.0	24.0		24.0	24.0		24.0	24.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
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		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
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)	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	
Pedestrian Calls (#/hr)	12	12		12	12		1	1		1	1	
Act Effct Green (s)		20.0			20.0			20.0			20.0	
Actuated g/C Ratio		0.42			0.42			0.42			0.42	
v/c Ratio		0.24			0.26			0.93			0.38	
Control Delay		10.4			10.6			40.1			11.7	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		10.4			10.6			40.1			11.7	
LOS		B			B			D			B	
Approach Delay		10.4			10.6			40.1			11.7	
Approach LOS		B			B			D			B	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 48			
Actuated Cycle Length: 48			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.93			
Intersection Signal Delay: 25.7		Intersection LOS: C	
Intersection Capacity Utilization 69.9%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 8: Corey Rd & Summit Ave/Summitt Ave





Lane Group	SET	NWT	NET	SWT
Lane Group Flow (vph)	145	168	597	272
v/c Ratio	0.24	0.26	0.93	0.38
Control Delay	10.4	10.6	40.1	11.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	10.4	10.6	40.1	11.7
Queue Length 50th (ft)	25	29	149	50
Queue Length 95th (ft)	53	46	#284	60
Internal Link Dist (ft)	108	96	573	201
Turn Bay Length (ft)				
Base Capacity (vph)	614	638	640	709
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	0.26	0.93	0.38

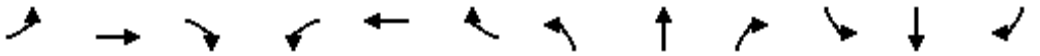
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	31	41	57	36	62	21	83	360	52	5	156	10
Future Volume (vph)	31	41	57	36	62	21	83	360	52	5	156	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	13	13	13	13	13	13	13	13	13	13	13
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			1.00			0.99			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.94			0.98			0.99			0.99	
Flt Protected		0.99			0.99			0.99			1.00	
Satd. Flow (prot)		1589			1690			1688			1730	
Flt Permitted		0.92			0.89			0.90			0.98	
Satd. Flow (perm)		1475			1532			1535			1703	
Peak-hour factor, PHF	0.89	0.89	0.89	0.71	0.71	0.71	0.83	0.83	0.83	0.63	0.63	0.63
Adj. Flow (vph)	35	46	64	51	87	30	100	434	63	8	248	16
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	145	0	0	168	0	0	597	0	0	272	0
Confl. Peds. (#/hr)	1		3	3		1	18		29	29		18
Confl. Bikes (#/hr)						1			1			
Heavy Vehicles (%)	3%	2%	2%	0%	0%	0%	3%	1%	2%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2			2		
Actuated Green, G (s)		20.0			20.0			20.0			20.0	
Effective Green, g (s)		20.0			20.0			20.0			20.0	
Actuated g/C Ratio		0.42			0.42			0.42			0.42	
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)		614			638			639			709	
v/s Ratio Prot												
v/s Ratio Perm		0.10			c0.11			c0.39			0.16	
v/c Ratio		0.24			0.26			0.93			0.38	
Uniform Delay, d1		9.1			9.2			13.4			9.7	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.9			1.0			22.7			1.6	
Delay (s)		10.0			10.2			36.0			11.3	
Level of Service		A			B			D			B	
Approach Delay (s)		10.0			10.2			36.0			11.3	
Approach LOS		A			B			D			B	

Intersection Summary			
HCM 2000 Control Delay	23.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	48.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



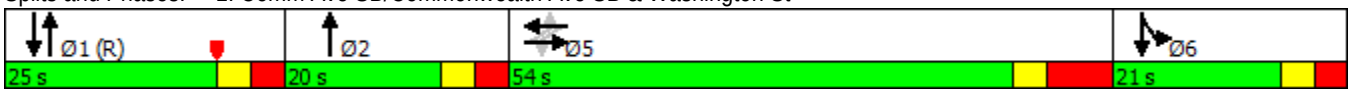
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	427	31	65	317	67	0	511	37	165	675	0
Future Volume (vph)	48	427	31	65	317	67	0	511	37	165	675	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	10	12	12
Storage Length (ft)	25		0	0		0	0		0	130		0
Storage Lanes	1		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			70		
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	1.00
Ped Bike Factor		0.99			0.95			0.97		0.83		
Frt		0.990			0.980			0.990				
Flt Protected	0.950				0.993					0.950		
Satd. Flow (prot)	1624	1629	0	0	1500	0	0	3123	0	1486	3217	0
Flt Permitted	0.392				0.536					0.950		
Satd. Flow (perm)	670	1629	0	0	809	0	0	3123	0	1229	3217	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			8			7				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		267			303			379			331	
Travel Time (s)		6.1			6.9			8.6			7.5	
Confl. Peds. (#/hr)	179		64	64		179	58		105	105		58
Confl. Bikes (#/hr)			9			2						
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.86	0.86	0.86	0.80	0.80	0.80
Heavy Vehicles (%)	0%	3%	0%	2%	7%	2%	0%	0%	0%	2%	1%	0%
Adj. Flow (vph)	53	469	34	71	348	74	0	594	43	206	844	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	53	503	0	0	493	0	0	637	0	206	844	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)		12			12			45			45	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.25	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2			2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100			100		20	100	
Trailing Detector (ft)	0	0		0	0			0		0	0	
Detector 1 Position(ft)	0	0		0	0			0		0	0	
Detector 1 Size(ft)	20	6		20	6			6		20	6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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	Ø1	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			NA		Prot	NA	
Protected Phases		5			5			1 2		6	1 6	
Permitted Phases	5			5								
Detector Phase	5	5		5	5			1 2		6	1 6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0					6.0		
Minimum Split (s)	25.0	25.0		25.0	25.0					20.0		
Total Split (s)	54.0	54.0		54.0	54.0					21.0		
Total Split (%)	45.0%	45.0%		45.0%	45.0%					17.5%		
Maximum Green (s)	45.0	45.0		45.0	45.0					15.0		
Yellow Time (s)	3.0	3.0		3.0	3.0					3.0		
All-Red Time (s)	6.0	6.0		6.0	6.0					3.0		
Lost Time Adjust (s)	0.0	0.0			0.0					0.0		
Total Lost Time (s)	9.0	9.0			9.0					6.0		
Lead/Lag	Lead	Lead		Lead	Lead					Lag		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes					Yes		
Vehicle Extension (s)	2.0	2.0		2.0	2.0					2.0		
Recall Mode	None	None		None	None					None		
Walk Time (s)	7.0	7.0		7.0	7.0					7.0		
Flash Dont Walk (s)	9.0	9.0		9.0	9.0					7.0		
Pedestrian Calls (#/hr)	109	109		109	109					60		
Act Effct Green (s)	47.2	47.2			47.2			36.8		15.0	40.0	
Actuated g/C Ratio	0.39	0.39			0.39			0.31		0.12	0.33	
v/c Ratio	0.20	0.78			1.53			0.66		1.11	0.79	
Control Delay	27.6	42.4			281.2			39.4		148.0	42.5	
Queue Delay	0.0	0.0			0.0			0.0		0.0	0.0	
Total Delay	27.6	42.4			281.2			39.4		148.0	42.5	
LOS	C	D			F			D		F	D	
Approach Delay		41.0			281.2			39.4			63.2	
Approach LOS		D			F			D			E	

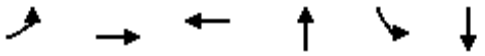
Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 23 (19%), Referenced to phase 1:NBSB, Start of Yellow			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.53			
Intersection Signal Delay: 92.4		Intersection LOS: F	
Intersection Capacity Utilization 108.1%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 1: Comm Ave SB/Commonwealth Ave SB & Washington St



Lane Group	Ø1	Ø2
Detector 2 Channel		
Detector 2 Extend (s)		
Turn Type		
Protected Phases	1	2
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	8.0	5.0
Minimum Split (s)	21.0	20.0
Total Split (s)	25.0	20.0
Total Split (%)	21%	17%
Maximum Green (s)	19.0	14.0
Yellow Time (s)	3.0	3.0
All-Red Time (s)	3.0	3.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	2.0	4.0
Recall Mode	C-Max	None
Walk Time (s)	8.0	7.0
Flash Dont Walk (s)	7.0	7.0
Pedestrian Calls (#/hr)	41	16
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		

Intersection Summary

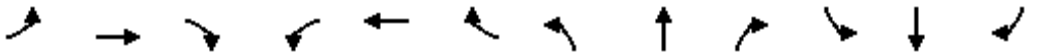


Lane Group	EBL	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	53	503	493	637	206	844
v/c Ratio	0.20	0.78	1.53	0.66	1.11	0.79
Control Delay	27.6	42.4	281.2	39.4	148.0	42.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.6	42.4	281.2	39.4	148.0	42.5
Queue Length 50th (ft)	27	339	~539	221	~182	309
Queue Length 95th (ft)	61	#529	#762	264	#282	330
Internal Link Dist (ft)		187	223	299		251
Turn Bay Length (ft)	25				130	
Base Capacity (vph)	263	642	323	1019	185	1072
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	0.20	0.78	1.53	0.63	1.11	0.79

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

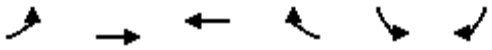
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	427	31	65	317	67	0	511	37	165	675	0
Future Volume (vph)	48	427	31	65	317	67	0	511	37	165	675	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	10	12	12
Total Lost time (s)	9.0	9.0			9.0			6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00			1.00			0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99			0.95			0.97		1.00	1.00	
Flpb, ped/bikes	0.92	1.00			1.00			1.00		1.00	1.00	
Frt	1.00	0.99			0.98			0.99		1.00	1.00	
Flt Protected	0.95	1.00			0.99			1.00		0.95	1.00	
Satd. Flow (prot)	1490	1629			1499			3122		1486	3217	
Flt Permitted	0.39	1.00			0.54			1.00		0.95	1.00	
Satd. Flow (perm)	614	1629			809			3122		1486	3217	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.86	0.86	0.86	0.80	0.80	0.80
Adj. Flow (vph)	53	469	34	71	348	74	0	594	43	206	844	0
RTOR Reduction (vph)	0	2	0	0	5	0	0	5	0	0	0	0
Lane Group Flow (vph)	53	501	0	0	488	0	0	632	0	206	844	0
Confl. Peds. (#/hr)	179		64	64		179	58		105	105		58
Confl. Bikes (#/hr)			9			2						
Heavy Vehicles (%)	0%	3%	0%	2%	7%	2%	0%	0%	0%	2%	1%	0%
Turn Type	Perm	NA		Perm	NA			NA		Prot	NA	
Protected Phases		5			5			1 2		6	1 6	
Permitted Phases	5			5								
Actuated Green, G (s)	47.2	47.2			47.2			36.8		15.0	40.0	
Effective Green, g (s)	47.2	47.2			47.2			36.8		15.0	40.0	
Actuated g/C Ratio	0.39	0.39			0.39			0.31		0.12	0.33	
Clearance Time (s)	9.0	9.0			9.0					6.0		
Vehicle Extension (s)	2.0	2.0			2.0					2.0		
Lane Grp Cap (vph)	241	640			318			957		185	1072	
v/s Ratio Prot		0.31						c0.20		c0.14	c0.26	
v/s Ratio Perm	0.09				c0.60							
v/c Ratio	0.22	0.78			1.54			0.66		1.11	0.79	
Uniform Delay, d1	24.2	31.9			36.4			36.2		52.5	36.2	
Progression Factor	1.00	1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2	0.2	5.8			256.0			1.9		99.9	3.6	
Delay (s)	24.3	37.7			292.4			38.1		152.4	39.7	
Level of Service	C	D			F			D		F	D	
Approach Delay (s)		36.4			292.4			38.1			61.8	
Approach LOS		D			F			D			E	

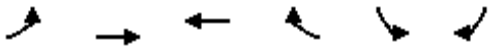
Intersection Summary			
HCM 2000 Control Delay	92.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.24		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	27.0
Intersection Capacity Utilization	108.1%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	21	649	433	31	113	5
Future Volume (vph)	21	649	433	31	113	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.991		0.995	
Flt Protected		0.998			0.954	
Satd. Flow (prot)	0	1727	1616	0	1623	0
Flt Permitted		0.998			0.954	
Satd. Flow (perm)	0	1727	1616	0	1623	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		303	142		425	
Travel Time (s)		6.9	3.2		9.7	
Confl. Peds. (#/hr)	140			140	54	
Confl. Bikes (#/hr)				10		1
Peak Hour Factor	0.90	0.90	0.95	0.95	0.67	0.67
Heavy Vehicles (%)	5%	2%	5%	3%	0%	0%
Adj. Flow (vph)	23	721	456	33	169	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	744	489	0	176	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.10	1.10	1.14	1.14	1.14	1.14
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 70.7%		ICU Level of Service C	
Analysis Period (min) 15			

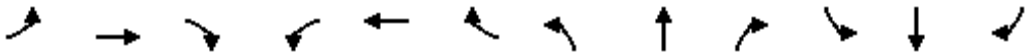


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	21	649	433	31	113	5
Future Volume (Veh/h)	21	649	433	31	113	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.95	0.95	0.67	0.67
Hourly flow rate (vph)	23	721	456	33	169	7
Pedestrians			54		140	
Lane Width (ft)			12.0		12.0	
Walking Speed (ft/s)			3.5		3.5	
Percent Blockage			5		13	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		303	499			
pX, platoon unblocked					0.74	
vC, conflicting volume	629				1434	612
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	629				1410	612
tC, single (s)	4.1				*4.5	*4.5
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				12	99
cM capacity (veh/h)	814				191	575

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	744	489	176
Volume Left	23	0	169
Volume Right	0	33	7
cSH	814	1700	196
Volume to Capacity	0.03	0.29	0.90
Queue Length 95th (ft)	2	0	174
Control Delay (s)	0.7	0.0	89.3
Lane LOS	A		F
Approach Delay (s)	0.7	0.0	89.3
Approach LOS			F

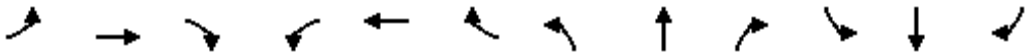
Intersection Summary			
Average Delay	11.6		
Intersection Capacity Utilization	70.7%	ICU Level of Service	C
Analysis Period (min)	15		

* User Entered Value



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	639	72	10	418	5	0	0	0	15	10	46
Future Volume (vph)	51	639	72	10	418	5	0	0	0	15	10	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	12	12	12	13	13	13	14	14	14
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			0.998						0.913	
Flt Protected		0.997			0.999						0.989	
Satd. Flow (prot)	0	1696	0	0	1612	0	0	0	0	0	1626	0
Flt Permitted		0.997			0.999						0.989	
Satd. Flow (perm)	0	1696	0	0	1612	0	0	0	0	0	1626	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		142			229			376			127	
Travel Time (s)		3.2			5.2			8.5			2.9	
Confl. Peds. (#/hr)	42		41	41		42	5		33	33		5
Confl. Bikes (#/hr)						3						
Peak Hour Factor	0.93	0.93	0.93	0.88	0.88	0.88	0.92	0.92	0.92	0.81	0.81	0.81
Heavy Vehicles (%)	0%	3%	0%	0%	6%	0%	0%	0%	0%	0%	0%	2%
Adj. Flow (vph)	55	687	77	11	475	6	0	0	0	19	12	57
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	819	0	0	492	0	0	0	0	0	88	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	1.10	1.10	1.10	1.14	1.14	1.14	1.10	1.10	1.10	1.05	1.05	1.05
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

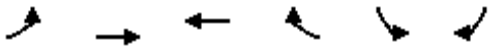
Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 89.8%		ICU Level of Service E	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	639	72	10	418	5	0	0	0	15	10	46
Future Volume (Veh/h)	51	639	72	10	418	5	0	0	0	15	10	46
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.88	0.88	0.88	0.92	0.92	0.92	0.81	0.81	0.81
Hourly flow rate (vph)	55	687	77	11	475	6	0	0	0	19	12	57
Pedestrians		5			33			41			42	
Lane Width (ft)		13.0			12.0			0.0			14.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		1			3			0			5	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		445			357							
pX, platoon unblocked				0.75			0.75	0.75	0.75	0.75	0.75	
vC, conflicting volume	523			805			1444	1422	800	1410	1457	525
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	523			577			1426	1396	570	1381	1443	525
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			99			100	100	100	76	87	89
cM capacity (veh/h)	1005			758			63	95	383	78	89	524

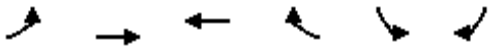
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	819	492	88
Volume Left	55	11	19
Volume Right	77	6	57
cSH	1005	758	181
Volume to Capacity	0.05	0.01	0.49
Queue Length 95th (ft)	4	1	59
Control Delay (s)	1.4	0.4	42.5
Lane LOS	A	A	E
Approach Delay (s)	1.4	0.4	42.5
Approach LOS			E

Intersection Summary				
Average Delay	3.6			
Intersection Capacity Utilization	89.8%	ICU Level of Service	E	
Analysis Period (min)	15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	10	644	428	82	72	5
Future Volume (vph)	10	644	428	82	72	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	12	12	11	11
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.978		0.991	
Flt Protected		0.999			0.955	
Satd. Flow (prot)	0	1712	1592	0	1564	0
Flt Permitted		0.999			0.955	
Satd. Flow (perm)	0	1712	1592	0	1564	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		229	128		153	
Travel Time (s)		5.2	2.9		3.5	
Confl. Peds. (#/hr)	35			35	3	5
Confl. Bikes (#/hr)				4		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.75	0.75
Heavy Vehicles (%)	11%	3%	6%	0%	0%	0%
Adj. Flow (vph)	11	700	465	89	96	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	711	554	0	103	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	1.10	1.10	1.14	1.14	1.19	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 59.3%		ICU Level of Service B	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	10	644	428	82	72	5
Future Volume (Veh/h)	10	644	428	82	72	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.75	0.75
Hourly flow rate (vph)	11	700	465	89	96	7
Pedestrians		5	3		35	
Lane Width (ft)		13.0	12.0		11.0	
Walking Speed (ft/s)		3.5	3.5		3.5	
Percent Blockage		1	0		3	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		674	128			
pX, platoon unblocked	0.75				0.85	0.75
vC, conflicting volume	589				1270	550
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	286				715	233
tC, single (s)	4.2				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.3
p0 queue free %	99				70	99
cM capacity (veh/h)	892				323	587

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	711	554	103
Volume Left	11	0	96
Volume Right	0	89	7
cSH	892	1700	334
Volume to Capacity	0.01	0.33	0.31
Queue Length 95th (ft)	1	0	32
Control Delay (s)	0.3	0.0	20.5
Lane LOS	A		C
Approach Delay (s)	0.3	0.0	20.5
Approach LOS			C

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		

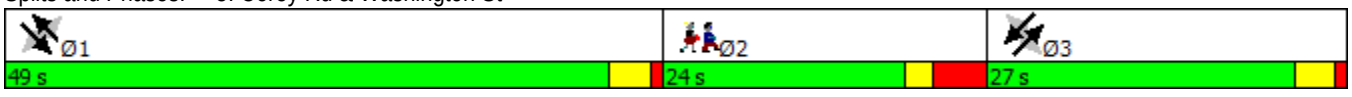
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	88	487	140	15	374	134	59	195	15	55	227	77
Future Volume (vph)	88	487	140	15	374	134	59	195	15	55	227	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	16	16	16	13	13	13	13	13	13
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			0.98			0.99			0.97	
Frt		0.974			0.965			0.992			0.971	
Flt Protected		0.994			0.999			0.989			0.992	
Satd. Flow (prot)	0	1655	0	0	1742	0	0	1676	0	0	1648	0
Flt Permitted		0.834			0.975			0.683			0.833	
Satd. Flow (perm)	0	1385	0	0	1700	0	0	1149	0	0	1382	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		128			214			198			219	
Travel Time (s)		2.9			4.9			4.5			5.0	
Confl. Peds. (#/hr)	56		35	35		56	46		11	11		46
Confl. Bikes (#/hr)			10			9						
Peak Hour Factor	0.96	0.96	0.96	0.86	0.86	0.86	0.84	0.84	0.84	0.93	0.93	0.93
Heavy Vehicles (%)	0%	3%	0%	0%	6%	2%	8%	2%	0%	0%	1%	0%
Adj. Flow (vph)	92	507	146	17	435	156	70	232	18	59	244	83
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	745	0	0	608	0	0	320	0	0	386	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	1.10	1.10	1.10	0.97	0.97	0.97	1.10	1.10	1.10	1.10	1.10	1.10
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	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	

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 (%)	
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)	
Turn Type	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Protected Phases		1			1			3			3	
Permitted Phases	1			1			3			3		
Detector Phase	1	1		1	1		3	3		3	3	
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)	49.0	49.0		49.0	49.0		27.0	27.0		27.0	27.0	
Total Split (%)	49.0%	49.0%		49.0%	49.0%		27.0%	27.0%		27.0%	27.0%	
Maximum Green (s)	45.0	45.0		45.0	45.0		23.0	23.0		23.0	23.0	
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?	Yes	Yes		Yes	Yes							
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		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		45.8			45.8			23.4			23.4	
Actuated g/C Ratio		0.51			0.51			0.26			0.26	
v/c Ratio		1.06			0.71			1.08			1.08	
Control Delay		78.0			25.7			110.6			106.7	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		78.0			25.7			110.6			106.7	
LOS		E			C			F			F	
Approach Delay		78.0			25.7			110.6			106.7	
Approach LOS		E			C			F			F	

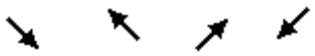
Intersection Summary			
Area Type:	CBD		
Cycle Length: 100			
Actuated Cycle Length: 90.4			
Natural Cycle: 140			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.08			
Intersection Signal Delay: 73.0		Intersection LOS: E	
Intersection Capacity Utilization 114.2%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 5: Corey Rd & Washington St



Lane Group	Ø2
Protected Phases	2
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	24.0
Total Split (s)	24.0
Total Split (%)	24%
Maximum Green (s)	18.0
Yellow Time (s)	2.0
All-Red Time (s)	4.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lag
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	10.0
Flash Dont Walk (s)	8.0
Pedestrian Calls (#/hr)	37
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	SET	NWT	NET	SWT
Lane Group Flow (vph)	745	608	320	386
v/c Ratio	1.06	0.71	1.08	1.08
Control Delay	78.0	25.7	110.6	106.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	78.0	25.7	110.6	106.7
Queue Length 50th (ft)	~578	322	~251	~303
Queue Length 95th (ft)	#802	437	#380	#484
Internal Link Dist (ft)	48	134	118	139
Turn Bay Length (ft)				
Base Capacity (vph)	702	861	297	357
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	1.06	0.71	1.08	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	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	88	487	140	15	374	134	59	195	15	55	227	77
Future Volume (vph)	88	487	140	15	374	134	59	195	15	55	227	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	13	13	16	16	16	13	13	13	13	13	13
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			0.98	
Flpb, ped/bikes		1.00			1.00			0.99			1.00	
Frt		0.97			0.97			0.99			0.97	
Flt Protected		0.99			1.00			0.99			0.99	
Satd. Flow (prot)		1651			1745			1664			1650	
Flt Permitted		0.83			0.98			0.68			0.83	
Satd. Flow (perm)		1386			1703			1149			1385	
Peak-hour factor, PHF	0.96	0.96	0.96	0.86	0.86	0.86	0.84	0.84	0.84	0.93	0.93	0.93
Adj. Flow (vph)	92	507	146	17	435	156	70	232	18	59	244	83
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	745	0	0	608	0	0	320	0	0	386	0
Confl. Peds. (#/hr)	56		35	35		56	46		11	11		46
Confl. Bikes (#/hr)			10			9						
Heavy Vehicles (%)	0%	3%	0%	0%	6%	2%	8%	2%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		1			1			3			3	
Permitted Phases	1			1			3			3		
Actuated Green, G (s)		45.8			45.8			23.4			23.4	
Effective Green, g (s)		45.8			45.8			23.4			23.4	
Actuated g/C Ratio		0.49			0.49			0.25			0.25	
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)		682			838			289			348	
v/s Ratio Prot												
v/s Ratio Perm		c0.54			0.36			0.28			c0.28	
v/c Ratio		1.09			0.73			1.11			1.11	
Uniform Delay, d1		23.6			18.6			34.8			34.8	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		62.4			5.4			84.8			81.0	
Delay (s)		86.0			24.1			119.6			115.8	
Level of Service		F			C			F			F	
Approach Delay (s)		86.0			24.1			119.6			115.8	
Approach LOS		F			C			F			F	

Intersection Summary			
HCM 2000 Control Delay	78.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	93.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	114.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	15	547	523	10	5	0
Future Volume (vph)	15	547	523	10	5	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	16	12	11	11
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.998			
Flt Protected		0.999			0.950	
Satd. Flow (prot)	0	1715	1844	0	1570	0
Flt Permitted		0.999			0.950	
Satd. Flow (perm)	0	1715	1844	0	1570	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		214	124		137	
Travel Time (s)		4.9	2.8		3.1	
Confl. Peds. (#/hr)	65			65		
Confl. Bikes (#/hr)				13		
Peak Hour Factor	0.90	0.90	0.89	0.89	0.50	0.50
Heavy Vehicles (%)	0%	3%	5%	0%	0%	0%
Adj. Flow (vph)	17	608	588	11	10	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	625	599	0	10	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	1.10	1.10	0.97	1.14	1.19	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 55.4%		ICU Level of Service B	
Analysis Period (min) 15			

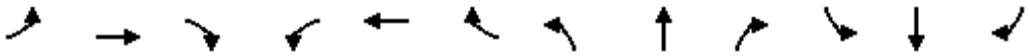
Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (veh/h)	15	547	523	10	5	0
Future Volume (Veh/h)	15	547	523	10	5	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.89	0.89	0.50	0.50
Hourly flow rate (vph)	17	608	588	11	10	0
Pedestrians					65	
Lane Width (ft)					11.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					6	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		214				
pX, platoon unblocked					0.62	
vC, conflicting volume	664				1300	658
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	664				1180	658
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				92	100
cM capacity (veh/h)	882				122	441

Direction, Lane #	SE 1	NW 1	SW 1
Volume Total	625	599	10
Volume Left	17	0	10
Volume Right	0	11	0
cSH	882	1700	122
Volume to Capacity	0.02	0.35	0.08
Queue Length 95th (ft)	1	0	7
Control Delay (s)	0.5	0.0	37.0
Lane LOS	A		E
Approach Delay (s)	0.5	0.0	37.0
Approach LOS			E

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	55.4%	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)	0	0	0	56	0	8	5	338	73	17	303	26
Future Volume (vph)	0	0	0	56	0	8	5	338	73	17	303	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	12	16	12	12	12	13	13	12	12	13	13
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					0.983			0.976			0.990	
Flt Protected					0.958			0.999			0.998	
Satd. Flow (prot)	0	0	0	0	1610	0	0	1709	0	0	1746	0
Flt Permitted					0.958			0.999			0.998	
Satd. Flow (perm)	0	0	0	0	1610	0	0	1709	0	0	1746	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		135			108			219			653	
Travel Time (s)		3.1			2.5			5.0			14.8	
Confl. Peds. (#/hr)	7					7	13		6	6		13
Confl. Bikes (#/hr)									2			1
Peak Hour Factor	0.25	0.25	0.25	0.44	0.44	0.44	0.94	0.94	0.94	0.89	0.89	0.89
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%
Adj. Flow (vph)	0	0	0	127	0	18	5	360	78	19	340	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	145	0	0	443	0	0	388	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	0.97	1.14	0.97	1.14	1.14	1.14	1.10	1.10	1.14	1.14	1.10	1.10
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	43.8%	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)	0	0	0	56	0	8	5	338	73	17	303	26
Future Volume (Veh/h)	0	0	0	56	0	8	5	338	73	17	303	26
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.25	0.25	0.44	0.44	0.44	0.94	0.94	0.94	0.89	0.89	0.89
Hourly flow rate (vph)	0	0	0	127	0	18	5	360	78	19	340	29
Pedestrians		13			6						7	
Lane Width (ft)		0.0			12.0						13.0	
Walking Speed (ft/s)		3.5			3.5						3.5	
Percent Blockage		0			1						1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								219			653	
pX, platoon unblocked	0.88	0.88	0.98	0.88	0.88	0.87	0.98			0.87		
vC, conflicting volume	840	860	368	808	835	412	382			444		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	687	709	340	650	681	243	355			280		
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	100	100	61	100	97	100			98		
cM capacity (veh/h)	302	309	690	329	320	684	1186			1114		

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	145	443	388
Volume Left	127	5	19
Volume Right	18	78	29
cSH	352	1186	1114
Volume to Capacity	0.41	0.00	0.02
Queue Length 95th (ft)	49	0	1
Control Delay (s)	22.2	0.1	0.6
Lane LOS	C	A	A
Approach Delay (s)	22.2	0.1	0.6
Approach LOS	C		

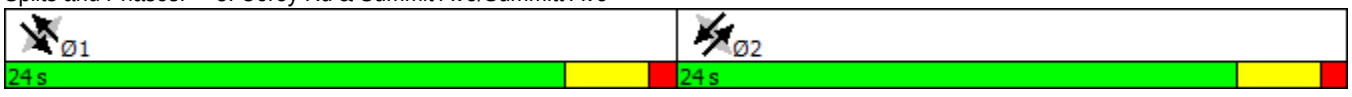
Intersection Summary				
Average Delay	3.6			
Intersection Capacity Utilization	43.8%	ICU Level of Service	A	
Analysis Period (min)	15			

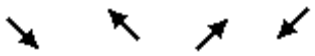
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	15	67	73	47	103	5	78	273	52	5	237	10
Future Volume (vph)	15	67	73	47	103	5	78	273	52	5	237	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	13	13	13	13	13	13	13	13	13
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			1.00			0.99			1.00	
Frt		0.936			0.995			0.983			0.995	
Flt Protected		0.995			0.985			0.990			0.999	
Satd. Flow (prot)	0	1614	0	0	1730	0	0	1695	0	0	1735	0
Flt Permitted		0.971			0.884			0.886			0.993	
Satd. Flow (perm)	0	1574	0	0	1548	0	0	1509	0	0	1725	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		188			176			653			281	
Travel Time (s)		4.3			4.0			14.8			6.4	
Confl. Peds. (#/hr)	7		9	9		7	34		18	18		34
Confl. Bikes (#/hr)									1			1
Peak Hour Factor	0.87	0.87	0.87	0.89	0.89	0.89	0.88	0.88	0.88	0.91	0.91	0.91
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	1%	1%	0%	0%	1%	0%
Adj. Flow (vph)	17	77	84	53	116	6	89	310	59	5	260	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	178	0	0	175	0	0	458	0	0	276	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	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
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	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2			2		
Detector Phase	1	1		1	1		2	2		2	2	
Switch Phase												
Minimum Initial (s)	14.0	14.0		14.0	14.0		14.0	14.0		14.0	14.0	
Minimum Split (s)	22.0	22.0		22.0	22.0		22.0	22.0		22.0	22.0	
Total Split (s)	24.0	24.0		24.0	24.0		24.0	24.0		24.0	24.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
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		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
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)	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	
Pedestrian Calls (#/hr)	13	13		13	13		4	4		4	4	
Act Effct Green (s)		20.0			20.0			20.0			20.0	
Actuated g/C Ratio		0.42			0.42			0.42			0.42	
v/c Ratio		0.27			0.27			0.73			0.38	
Control Delay		10.7			10.7			21.0			11.7	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		10.7			10.7			21.0			11.7	
LOS		B			B			C			B	
Approach Delay		10.7			10.7			21.0			11.7	
Approach LOS		B			B			C			B	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 48			
Actuated Cycle Length: 48			
Natural Cycle: 45			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 15.3		Intersection LOS: B	
Intersection Capacity Utilization 70.3%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 8: Corey Rd & Summit Ave/Summitt Ave





Lane Group	SET	NWT	NET	SWT
Lane Group Flow (vph)	178	175	458	276
v/c Ratio	0.27	0.27	0.73	0.38
Control Delay	10.7	10.7	21.0	11.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	10.7	10.7	21.0	11.7
Queue Length 50th (ft)	31	30	101	50
Queue Length 95th (ft)	61	63	#218	96
Internal Link Dist (ft)	108	96	573	201
Turn Bay Length (ft)				
Base Capacity (vph)	655	645	628	718
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	0.27	0.27	0.73	0.38

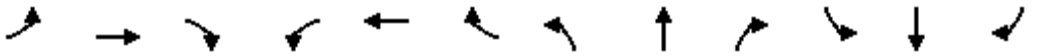
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	15	67	73	47	103	5	78	273	52	5	237	10
Future Volume (vph)	15	67	73	47	103	5	78	273	52	5	237	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	13	13	13	13	13	13	13	13	13	13	13
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			1.00			0.99			1.00	
Flpb, ped/bikes		1.00			1.00			0.99			1.00	
Frt		0.94			1.00			0.98			0.99	
Flt Protected		1.00			0.99			0.99			1.00	
Satd. Flow (prot)		1614			1726			1686			1735	
Flt Permitted		0.97			0.88			0.89			0.99	
Satd. Flow (perm)		1575			1548			1508			1723	
Peak-hour factor, PHF	0.87	0.87	0.87	0.89	0.89	0.89	0.88	0.88	0.88	0.91	0.91	0.91
Adj. Flow (vph)	17	77	84	53	116	6	89	310	59	5	260	11
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	178	0	0	175	0	0	458	0	0	276	0
Confl. Peds. (#/hr)	7		9	9		7	34		18	18		34
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	1%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2			2		
Actuated Green, G (s)		20.0			20.0			20.0			20.0	
Effective Green, g (s)		20.0			20.0			20.0			20.0	
Actuated g/C Ratio		0.42			0.42			0.42			0.42	
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)		656			645			628			717	
v/s Ratio Prot												
v/s Ratio Perm		0.11			c0.11			c0.30			0.16	
v/c Ratio		0.27			0.27			0.73			0.38	
Uniform Delay, d1		9.2			9.2			11.7			9.7	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.0			1.0			7.3			1.6	
Delay (s)		10.2			10.2			19.0			11.3	
Level of Service		B			B			B			B	
Approach Delay (s)		10.2			10.2			19.0			11.3	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	14.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	48.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	70.3%	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)	67	386	40	72	325	89	0	843	57	130	374	0
Future Volume (vph)	67	386	40	72	325	89	0	843	57	130	374	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	10	12	12
Storage Length (ft)	25		0	0		0	0		0	130		0
Storage Lanes	1		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			70		
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	1.00
Ped Bike Factor		0.99			0.94			0.98		0.91		
Frt		0.986			0.975			0.991				
Flt Protected	0.950				0.993					0.950		
Satd. Flow (prot)	1562	1576	0	0	1502	0	0	3118	0	1417	3185	0
Flt Permitted	0.383				0.539					0.950		
Satd. Flow (perm)	630	1576	0	0	815	0	0	3118	0	1284	3185	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			11			6				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		267			303			379			331	
Travel Time (s)		6.1			6.9			8.6			7.5	
Confl. Peds. (#/hr)	189		63	63		189	84		86	86		84
Confl. Bikes (#/hr)			8			6						
Peak Hour Factor	0.87	0.87	0.87	0.96	0.96	0.96	0.96	0.96	0.96	0.88	0.88	0.88
Heavy Vehicles (%)	4%	6%	0%	2%	4%	3%	0%	1%	0%	7%	2%	0%
Adj. Flow (vph)	77	444	46	75	339	93	0	878	59	148	425	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	77	490	0	0	507	0	0	937	0	148	425	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)		12			12			45			45	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.25	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2			2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100			100		20	100	
Trailing Detector (ft)	0	0		0	0			0		0	0	
Detector 1 Position(ft)	0	0		0	0			0		0	0	
Detector 1 Size(ft)	20	6		20	6			6		20	6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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	Ø1	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		

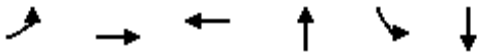
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA			NA		Prot	NA	
Protected Phases		5			5			1 2		6	1 6	
Permitted Phases	5			5								
Detector Phase	5	5		5	5			1 2		6	1 6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0					6.0		
Minimum Split (s)	25.0	25.0		25.0	25.0					20.0		
Total Split (s)	56.0	56.0		56.0	56.0					21.0		
Total Split (%)	46.7%	46.7%		46.7%	46.7%					17.5%		
Maximum Green (s)	47.0	47.0		47.0	47.0					15.0		
Yellow Time (s)	3.0	3.0		3.0	3.0					3.0		
All-Red Time (s)	6.0	6.0		6.0	6.0					3.0		
Lost Time Adjust (s)	0.0	0.0			0.0					0.0		
Total Lost Time (s)	9.0	9.0			9.0					6.0		
Lead/Lag	Lead	Lead		Lead	Lead					Lag		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes					Yes		
Vehicle Extension (s)	2.0	2.0		2.0	2.0					2.0		
Recall Mode	None	None		None	None					None		
Walk Time (s)	7.0	7.0		7.0	7.0					7.0		
Flash Dont Walk (s)	9.0	9.0		9.0	9.0					7.0		
Pedestrian Calls (#/hr)	63	63		63	63					69		
Act Effct Green (s)	47.0	47.0			47.0			37.5		14.5	38.0	
Actuated g/C Ratio	0.39	0.39			0.39			0.31		0.12	0.32	
v/c Ratio	0.31	0.79			1.56			0.96		0.87	0.42	
Control Delay	29.8	42.7			294.8			60.9		93.0	33.9	
Queue Delay	0.0	0.0			0.0			0.0		0.0	0.0	
Total Delay	29.8	42.7			294.8			60.9		93.0	33.9	
LOS	C	D			F			E		F	C	
Approach Delay		40.9			294.8			60.9			49.2	
Approach LOS		D			F			E			D	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 37 (31%), Referenced to phase 1:NBSB, Start of Yellow			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.56			
Intersection Signal Delay: 99.8		Intersection LOS: F	
Intersection Capacity Utilization 117.8%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 1: Comm Ave SB/Commonwealth Ave SB & Washington St

Lane Group	Ø1	Ø2
Detector 2 Channel		
Detector 2 Extend (s)		
Turn Type		
Protected Phases	1	2
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	8.0	5.0
Minimum Split (s)	21.0	20.0
Total Split (s)	23.0	20.0
Total Split (%)	19%	17%
Maximum Green (s)	17.0	14.0
Yellow Time (s)	3.0	3.0
All-Red Time (s)	3.0	3.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	2.0	4.0
Recall Mode	C-Max	None
Walk Time (s)	8.0	7.0
Flash Dont Walk (s)	7.0	7.0
Pedestrian Calls (#/hr)	43	16
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		

Intersection Summary

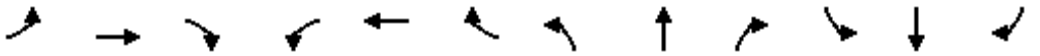


Lane Group	EBL	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	77	490	507	937	148	425
v/c Ratio	0.31	0.79	1.56	0.96	0.87	0.42
Control Delay	29.8	42.7	294.8	60.9	93.0	33.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.8	42.7	294.8	60.9	93.0	33.9
Queue Length 50th (ft)	41	327	~554	374	114	136
Queue Length 95th (ft)	81	446	#770	#516	#223	180
Internal Link Dist (ft)		187	223	299		251
Turn Bay Length (ft)	25				130	
Base Capacity (vph)	246	620	325	978	177	990
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	0.31	0.79	1.56	0.96	0.84	0.43

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

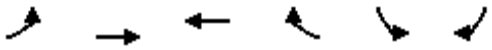
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	67	386	40	72	325	89	0	843	57	130	374	0
Future Volume (vph)	67	386	40	72	325	89	0	843	57	130	374	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	10	12	12
Total Lost time (s)	9.0	9.0			9.0			6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00			1.00			0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99			0.94			0.98		1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00			1.00		1.00	1.00	
Frt	1.00	0.99			0.98			0.99		1.00	1.00	
Flt Protected	0.95	1.00			0.99			1.00		0.95	1.00	
Satd. Flow (prot)	1562	1576			1502			3117		1417	3185	
Flt Permitted	0.38	1.00			0.54			1.00		0.95	1.00	
Satd. Flow (perm)	630	1576			815			3117		1417	3185	
Peak-hour factor, PHF	0.87	0.87	0.87	0.96	0.96	0.96	0.96	0.96	0.96	0.88	0.88	0.88
Adj. Flow (vph)	77	444	46	75	339	93	0	878	59	148	425	0
RTOR Reduction (vph)	0	3	0	0	7	0	0	4	0	0	0	0
Lane Group Flow (vph)	77	487	0	0	500	0	0	933	0	148	425	0
Confl. Peds. (#/hr)	189		63	63		189	84		86	86		84
Confl. Bikes (#/hr)			8			6						
Heavy Vehicles (%)	4%	6%	0%	2%	4%	3%	0%	1%	0%	7%	2%	0%
Turn Type	Perm	NA		Perm	NA			NA		Prot	NA	
Protected Phases		5			5			1 2		6	1 6	
Permitted Phases	5			5								
Actuated Green, G (s)	47.0	47.0			47.0			37.5		14.5	38.0	
Effective Green, g (s)	47.0	47.0			47.0			37.5		14.5	38.0	
Actuated g/C Ratio	0.39	0.39			0.39			0.31		0.12	0.32	
Clearance Time (s)	9.0	9.0			9.0					6.0		
Vehicle Extension (s)	2.0	2.0			2.0					2.0		
Lane Grp Cap (vph)	246	617			319			974		171	1008	
v/s Ratio Prot		0.31						c0.30		c0.10	0.13	
v/s Ratio Perm	0.12				c0.61							
v/c Ratio	0.31	0.79			1.57			0.96		0.87	0.42	
Uniform Delay, d1	25.3	32.1			36.5			40.5		51.8	32.3	
Progression Factor	1.00	1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2	0.3	6.2			270.5			19.3		32.8	0.1	
Delay (s)	25.6	38.3			307.0			59.8		84.6	32.4	
Level of Service	C	D			F			E		F	C	
Approach Delay (s)		36.6			307.0			59.8			45.9	
Approach LOS		D			F			E			D	

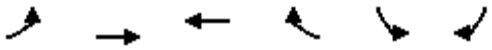
Intersection Summary			
HCM 2000 Control Delay	100.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.31		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	27.0
Intersection Capacity Utilization	117.8%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	41	572	448	85	61	49
Future Volume (vph)	41	572	448	85	61	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.979		0.940	
Flt Protected		0.997			0.973	
Satd. Flow (prot)	0	1672	1599	0	1520	0
Flt Permitted		0.997			0.973	
Satd. Flow (perm)	0	1672	1599	0	1520	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		303	142		132	
Travel Time (s)		6.9	3.2		3.0	
Confl. Peds. (#/hr)	70			70	37	
Confl. Bikes (#/hr)				7		
Peak Hour Factor	0.96	0.96	0.94	0.94	0.63	0.63
Heavy Vehicles (%)	10%	5%	5%	3%	2%	4%
Adj. Flow (vph)	43	596	477	90	97	78
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	639	567	0	175	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.10	1.10	1.14	1.14	1.14	1.14
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 84.7%		ICU Level of Service E	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	41	572	448	85	61	49
Future Volume (Veh/h)	41	572	448	85	61	49
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.96	0.96	0.94	0.94	0.63	0.63
Hourly flow rate (vph)	43	596	477	90	97	78
Pedestrians			37		70	
Lane Width (ft)			12.0		12.0	
Walking Speed (ft/s)			3.5		3.5	
Percent Blockage			4		7	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		303	499			
pX, platoon unblocked					0.74	
vC, conflicting volume	637				1311	592
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	637				1245	592
tC, single (s)	4.2				*4.5	*4.5
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.3
p0 queue free %	95				59	88
cM capacity (veh/h)	849				236	624

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	639	567	175
Volume Left	43	0	97
Volume Right	0	90	78
cSH	849	1700	327
Volume to Capacity	0.05	0.33	0.54
Queue Length 95th (ft)	4	0	75
Control Delay (s)	1.3	0.0	28.0
Lane LOS	A		D
Approach Delay (s)	1.3	0.0	28.0
Approach LOS			D

Intersection Summary			
Average Delay	4.2		
Intersection Capacity Utilization	84.7%	ICU Level of Service	E
Analysis Period (min)	15		

* User Entered Value

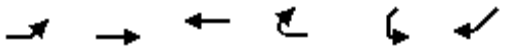
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	628	5	10	523	0	0
Future Volume (vph)	628	5	10	523	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	12	12	13	13
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.999					
Flt Protected				0.999		
Satd. Flow (prot)	1682	0	0	1598	0	0
Flt Permitted				0.999		
Satd. Flow (perm)	1682	0	0	1598	0	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	142			145	376	
Travel Time (s)	3.2			3.3	8.5	
Confl. Peds. (#/hr)		52	52		5	46
Peak Hour Factor	0.91	0.91	0.88	0.88	0.92	0.92
Heavy Vehicles (%)	5%	0%	0%	7%	0%	0%
Adj. Flow (vph)	690	5	11	594	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	695	0	0	605	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	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	1.10	1.10	1.14	1.14	1.10	1.10
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 57.3%		ICU Level of Service B	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	628	5	10	523	0	0
Future Volume (Veh/h)	628	5	10	523	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.88	0.88	0.92	0.92
Hourly flow rate (vph)	690	5	11	594	0	0
Pedestrians	5			46	52	
Lane Width (ft)	13.0			12.0	0.0	
Walking Speed (ft/s)	3.5			3.5	3.5	
Percent Blockage	1			4	0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	445			357		
pX, platoon unblocked			0.75		0.75	0.75
vC, conflicting volume			747		1366	790
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			502		1322	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 %			99		100	100
cM capacity (veh/h)			809		129	384

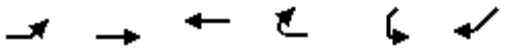
Direction, Lane #	EB 1	WB 1
Volume Total	695	605
Volume Left	0	11
Volume Right	5	0
cSH	1700	809
Volume to Capacity	0.41	0.01
Queue Length 95th (ft)	0	1
Control Delay (s)	0.0	0.4
Lane LOS		A
Approach Delay (s)	0.0	0.4
Approach LOS		

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	12	616	488	27	0	35
Future Volume (vph)	12	616	488	27	0	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.977			0.865
Flt Protected		0.997				
Satd. Flow (prot)	0	1681	1586	0	0	1479
Flt Permitted		0.997				
Satd. Flow (perm)	0	1681	1586	0	0	1479
Link Speed (mph)		30	30		30	
Link Distance (ft)		145	212		118	
Travel Time (s)		3.3	4.8		2.7	
Confl. Peds. (#/hr)	33			33	10	4
Confl. Bikes (#/hr)				2		
Peak Hour Factor	0.25	0.91	0.93	0.25	0.25	0.25
Heavy Vehicles (%)	2%	5%	6%	2%	0%	0%
Adj. Flow (vph)	48	677	525	108	0	140
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	725	633	0	0	140
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	1.10	1.10	1.14	1.14	1.14	1.14
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 58.0%		ICU Level of Service B	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (veh/h)	12	616	488	27	0	35
Future Volume (Veh/h)	12	616	488	27	0	35
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.25	0.91	0.93	0.25	0.25	0.25
Hourly flow rate (vph)	48	677	525	108	0	140
Pedestrians		4	10		33	
Lane Width (ft)		13.0	12.0		12.0	
Walking Speed (ft/s)		3.5	3.5		3.5	
Percent Blockage		0	1		3	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		590	212			
pX, platoon unblocked	0.75				0.86	0.75
vC, conflicting volume	666				1395	616
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	381				763	314
tC, single (s)	4.1				*4.0	*4.0
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	94				100	78
cM capacity (veh/h)	850				488	637

Direction, Lane #	EB 1	WB 1	SW 1
Volume Total	725	633	140
Volume Left	48	0	0
Volume Right	0	108	140
cSH	850	1700	637
Volume to Capacity	0.06	0.37	0.22
Queue Length 95th (ft)	4	0	21
Control Delay (s)	1.5	0.0	12.2
Lane LOS	A		B
Approach Delay (s)	1.5	0.0	12.2
Approach LOS			B

Intersection Summary			
Average Delay		1.9	
Intersection Capacity Utilization		58.0%	ICU Level of Service B
Analysis Period (min)		15	

* User Entered Value

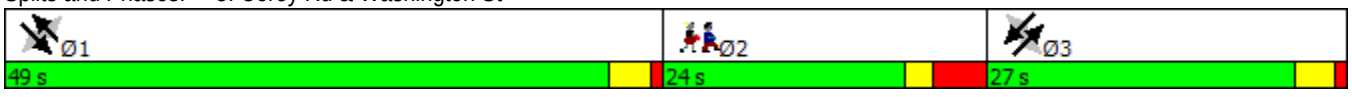
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	60	461	95	10	373	169	92	198	15	50	194	60
Future Volume (vph)	60	461	95	10	373	169	92	198	15	50	194	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	16	16	16	13	13	13	13	13	13
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		0.99			0.98			0.99			0.98	
Frt		0.979			0.959			0.993			0.973	
Flt Protected		0.995			0.999			0.985			0.992	
Satd. Flow (prot)	0	1620	0	0	1737	0	0	1691	0	0	1671	0
Flt Permitted		0.889			0.988			0.569			0.830	
Satd. Flow (perm)	0	1445	0	0	1718	0	0	972	0	0	1395	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		212			214			198			219	
Travel Time (s)		4.8			4.9			4.5			5.0	
Confl. Peds. (#/hr)	47		34	34		47	24		15	15		24
Confl. Bikes (#/hr)			13			7						
Peak Hour Factor	0.91	0.91	0.91	0.88	0.88	0.88	0.90	0.90	0.90	0.78	0.78	0.78
Heavy Vehicles (%)	5%	6%	1%	0%	6%	1%	1%	2%	7%	0%	1%	0%
Adj. Flow (vph)	66	507	104	11	424	192	102	220	17	64	249	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	677	0	0	627	0	0	339	0	0	390	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	1.10	1.10	1.10	0.97	0.97	0.97	1.10	1.10	1.10	1.10	1.10	1.10
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	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	

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 (%)	
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)	
Turn Type	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Protected Phases		1			1			3			3	
Permitted Phases	1			1			3			3		
Detector Phase	1	1		1	1		3	3		3	3	
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)	49.0	49.0		49.0	49.0		27.0	27.0		27.0	27.0	
Total Split (%)	49.0%	49.0%		49.0%	49.0%		27.0%	27.0%		27.0%	27.0%	
Maximum Green (s)	45.0	45.0		45.0	45.0		23.0	23.0		23.0	23.0	
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?	Yes	Yes		Yes	Yes							
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		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		45.8			45.8			23.4			23.4	
Actuated g/C Ratio		0.51			0.51			0.26			0.26	
v/c Ratio		0.92			0.72			1.35			1.08	
Control Delay		44.9			26.2			211.8			106.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		44.9			26.2			211.8			106.8	
LOS		D			C			F			F	
Approach Delay		44.9			26.2			211.8			106.8	
Approach LOS		D			C			F			F	

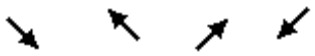
Intersection Summary			
Area Type:	CBD		
Cycle Length: 100			
Actuated Cycle Length: 90.4			
Natural Cycle: 150			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.35			
Intersection Signal Delay: 78.8		Intersection LOS: E	
Intersection Capacity Utilization 110.2%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 5: Corey Rd & Washington St



Lane Group	Ø2
Protected Phases	2
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	24.0
Total Split (s)	24.0
Total Split (%)	24%
Maximum Green (s)	18.0
Yellow Time (s)	2.0
All-Red Time (s)	4.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lag
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	10.0
Flash Dont Walk (s)	8.0
Pedestrian Calls (#/hr)	30
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	SET	NWT	NET	SWT
Lane Group Flow (vph)	677	627	339	390
v/c Ratio	0.92	0.72	1.35	1.08
Control Delay	44.9	26.2	211.8	106.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	44.9	26.2	211.8	106.8
Queue Length 50th (ft)	~469	336	~303	~306
Queue Length 95th (ft)	#688	474	#477	#394
Internal Link Dist (ft)	132	134	118	139
Turn Bay Length (ft)				
Base Capacity (vph)	732	871	251	361
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	0.92	0.72	1.35	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	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	60	461	95	10	373	169	92	198	15	50	194	60
Future Volume (vph)	60	461	95	10	373	169	92	198	15	50	194	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	13	13	16	16	16	13	13	13	13	13	13
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		1.00			1.00			0.99			1.00	
Frt		0.98			0.96			0.99			0.97	
Flt Protected		1.00			1.00			0.99			0.99	
Satd. Flow (prot)		1619			1739			1683			1669	
Flt Permitted		0.89			0.99			0.57			0.83	
Satd. Flow (perm)		1446			1720			971			1397	
Peak-hour factor, PHF	0.91	0.91	0.91	0.88	0.88	0.88	0.90	0.90	0.90	0.78	0.78	0.78
Adj. Flow (vph)	66	507	104	11	424	192	102	220	17	64	249	77
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	677	0	0	627	0	0	339	0	0	390	0
Confl. Peds. (#/hr)	47		34	34		47	24		15	15		24
Confl. Bikes (#/hr)			13			7						
Heavy Vehicles (%)	5%	6%	1%	0%	6%	1%	1%	2%	7%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		1			1			3			3	
Permitted Phases	1			1			3			3		
Actuated Green, G (s)		45.8			45.8			23.4			23.4	
Effective Green, g (s)		45.8			45.8			23.4			23.4	
Actuated g/C Ratio		0.49			0.49			0.25			0.25	
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)		712			847			244			351	
v/s Ratio Prot												
v/s Ratio Perm		c0.47			0.36			c0.35			0.28	
v/c Ratio		0.95			0.74			1.39			1.11	
Uniform Delay, d1		22.5			18.8			34.8			34.8	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		23.6			5.8			198.4			81.5	
Delay (s)		46.2			24.6			233.2			116.3	
Level of Service		D			C			F			F	
Approach Delay (s)		46.2			24.6			233.2			116.3	
Approach LOS		D			C			F			F	

Intersection Summary			
HCM 2000 Control Delay	84.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	93.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	110.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	10	524	547	10	5	5
Future Volume (vph)	10	524	547	10	5	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	16	12	11	11
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.998		0.932	
Flt Protected		0.999			0.976	
Satd. Flow (prot)	0	1683	1861	0	1504	0
Flt Permitted		0.999			0.976	
Satd. Flow (perm)	0	1683	1861	0	1504	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		214	124		137	
Travel Time (s)		4.9	2.8		3.1	
Confl. Peds. (#/hr)	40			40	1	
Confl. Bikes (#/hr)				8		
Peak Hour Factor	0.89	0.89	0.88	0.88	0.42	0.42
Heavy Vehicles (%)	0%	5%	4%	0%	0%	0%
Adj. Flow (vph)	11	589	622	11	12	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	600	633	0	24	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	1.10	1.10	0.97	1.14	1.19	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 49.5%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (veh/h)	10	524	547	10	5	5
Future Volume (Veh/h)	10	524	547	10	5	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.89	0.89	0.88	0.88	0.42	0.42
Hourly flow rate (vph)	11	589	622	11	12	12
Pedestrians			1		40	
Lane Width (ft)			16.0		11.0	
Walking Speed (ft/s)			3.5		3.5	
Percent Blockage			0		3	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		214				
pX, platoon unblocked					0.66	
vC, conflicting volume	673				1280	668
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	673				1167	668
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				91	97
cM capacity (veh/h)	895				136	446

Direction, Lane #	SE 1	NW 1	SW 1
Volume Total	600	633	24
Volume Left	11	0	12
Volume Right	0	11	12
cSH	895	1700	209
Volume to Capacity	0.01	0.37	0.11
Queue Length 95th (ft)	1	0	10
Control Delay (s)	0.3	0.0	24.5
Lane LOS	A		C
Approach Delay (s)	0.3	0.0	24.5
Approach LOS			C

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	49.5%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	20	0	34	39	0	11	0	407	20	3	231	0
Future Volume (vph)	20	0	34	39	0	11	0	407	20	3	231	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	13	13	12	12	13	13
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		0.915			0.970			0.994				
Flt Protected		0.982			0.962						0.999	
Satd. Flow (prot)	0	1506	0	0	1564	0	0	1724	0	0	1731	0
Flt Permitted		0.982			0.962						0.999	
Satd. Flow (perm)	0	1506	0	0	1564	0	0	1724	0	0	1731	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		135			90			219			653	
Travel Time (s)		3.1			2.0			5.0			14.8	
Confl. Peds. (#/hr)	4		1	1		4	20		13	13		20
Peak Hour Factor	0.25	0.25	0.25	0.44	0.25	0.44	0.25	0.83	0.83	0.89	0.89	0.25
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	0%	0%	2%	2%
Adj. Flow (vph)	80	0	136	89	0	25	0	490	24	3	260	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	216	0	0	114	0	0	514	0	0	263	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	1.14	1.14	1.14	1.14	1.14	1.10	1.10	1.14	1.14	1.10	1.10
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 38.9%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	20	0	34	39	0	11	0	407	20	3	231	0
Future Volume (Veh/h)	20	0	34	39	0	11	0	407	20	3	231	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.25	0.25	0.44	0.25	0.44	0.25	0.83	0.83	0.89	0.89	0.25
Hourly flow rate (vph)	80	0	136	89	0	25	0	490	24	3	260	0
Pedestrians		20			13			1			4	
Lane Width (ft)		12.0			12.0			13.0			13.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		2			1			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								219			653	
pX, platoon unblocked	0.86	0.86		0.86	0.86	0.86				0.86		
vC, conflicting volume	817	813	281	918	801	519	280			527		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	705	700	281	823	686	358	280			367		
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 %	84	100	85	79	100	97	100			100		
cM capacity (veh/h)	511	301	883	417	307	723	1258			1020		

Direction, Lane #	EB 1	WB 1	NE 1	SW 1
Volume Total	216	114	514	263
Volume Left	80	89	0	3
Volume Right	136	25	24	0
cSH	695	460	1700	1020
Volume to Capacity	0.31	0.25	0.30	0.00
Queue Length 95th (ft)	33	24	0	0
Control Delay (s)	12.5	15.4	0.0	0.1
Lane LOS	B	C		A
Approach Delay (s)	12.5	15.4	0.0	0.1
Approach LOS	B	C		

Intersection Summary				
Average Delay	4.1			
Intersection Capacity Utilization	38.9%	ICU Level of Service	A	
Analysis Period (min)	15			

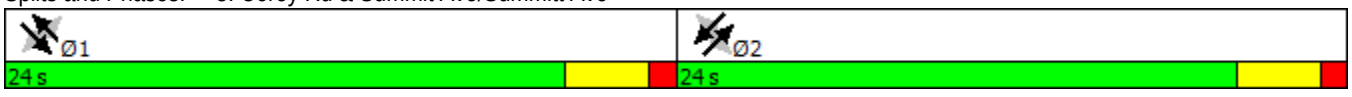
* User Entered Value

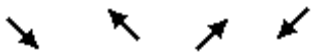
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	31	41	57	37	62	21	83	377	55	5	156	10
Future Volume (vph)	31	41	57	37	62	21	83	377	55	5	156	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	13	13	13	13	13	13	13	13	13
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		0.99			1.00			0.99			1.00	
Frt		0.940			0.976			0.986			0.992	
Flt Protected		0.988			0.985			0.992			0.999	
Satd. Flow (prot)	0	1588	0	0	1692	0	0	1693	0	0	1731	0
Flt Permitted		0.917			0.891			0.905			0.983	
Satd. Flow (perm)	0	1474	0	0	1529	0	0	1541	0	0	1703	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		188			176			653			281	
Travel Time (s)		4.3			4.0			14.8			6.4	
Confl. Peds. (#/hr)	1		3	3		1	18		29	29		18
Confl. Bikes (#/hr)						1			1			
Peak Hour Factor	0.89	0.89	0.89	0.71	0.71	0.71	0.83	0.83	0.83	0.63	0.63	0.63
Heavy Vehicles (%)	3%	2%	2%	0%	0%	0%	3%	1%	2%	0%	1%	0%
Adj. Flow (vph)	35	46	64	52	87	30	100	454	66	8	248	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	145	0	0	169	0	0	620	0	0	272	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	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
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	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2			2		
Detector Phase	1	1		1	1		2	2		2	2	
Switch Phase												
Minimum Initial (s)	14.0	14.0		14.0	14.0		14.0	14.0		14.0	14.0	
Minimum Split (s)	22.0	22.0		22.0	22.0		22.0	22.0		22.0	22.0	
Total Split (s)	24.0	24.0		24.0	24.0		24.0	24.0		24.0	24.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
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		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
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)	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	
Pedestrian Calls (#/hr)	12	12		12	12		1	1		1	1	
Act Effct Green (s)		20.0			20.0			20.0			20.0	
Actuated g/C Ratio		0.42			0.42			0.42			0.42	
v/c Ratio		0.24			0.27			0.97			0.38	
Control Delay		10.4			10.6			46.4			11.7	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		10.4			10.6			46.4			11.7	
LOS		B			B			D			B	
Approach Delay		10.4			10.6			46.4			11.7	
Approach LOS		B			B			D			B	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 48			
Actuated Cycle Length: 48			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.97			
Intersection Signal Delay: 29.2		Intersection LOS: C	
Intersection Capacity Utilization 71.1%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 8: Corey Rd & Summit Ave/Summitt Ave





Lane Group	SET	NWT	NET	SWT
Lane Group Flow (vph)	145	169	620	272
v/c Ratio	0.24	0.27	0.97	0.38
Control Delay	10.4	10.6	46.4	11.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	10.4	10.6	46.4	11.7
Queue Length 50th (ft)	25	29	159	50
Queue Length 95th (ft)	53	46	#299	60
Internal Link Dist (ft)	108	96	573	201
Turn Bay Length (ft)				
Base Capacity (vph)	614	637	642	709
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	0.27	0.97	0.38

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	31	41	57	37	62	21	83	377	55	5	156	10
Future Volume (vph)	31	41	57	37	62	21	83	377	55	5	156	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	13	13	13	13	13	13	13	13	13	13	13
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			1.00			0.99			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.94			0.98			0.99			0.99	
Flt Protected		0.99			0.98			0.99			1.00	
Satd. Flow (prot)		1589			1690			1689			1730	
Flt Permitted		0.92			0.89			0.90			0.98	
Satd. Flow (perm)		1475			1529			1540			1702	
Peak-hour factor, PHF	0.89	0.89	0.89	0.71	0.71	0.71	0.83	0.83	0.83	0.63	0.63	0.63
Adj. Flow (vph)	35	46	64	52	87	30	100	454	66	8	248	16
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	145	0	0	169	0	0	620	0	0	272	0
Confl. Peds. (#/hr)	1		3	3		1	18		29	29		18
Confl. Bikes (#/hr)						1			1			
Heavy Vehicles (%)	3%	2%	2%	0%	0%	0%	3%	1%	2%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2			2		
Actuated Green, G (s)		20.0			20.0			20.0			20.0	
Effective Green, g (s)		20.0			20.0			20.0			20.0	
Actuated g/C Ratio		0.42			0.42			0.42			0.42	
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)		614			637			641			709	
v/s Ratio Prot												
v/s Ratio Perm		0.10			c0.11			c0.40			0.16	
v/c Ratio		0.24			0.27			0.97			0.38	
Uniform Delay, d1		9.1			9.2			13.7			9.7	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.9			1.0			28.4			1.6	
Delay (s)		10.0			10.2			42.0			11.3	
Level of Service		A			B			D			B	
Approach Delay (s)		10.0			10.2			42.0			11.3	
Approach LOS		A			B			D			B	

Intersection Summary			
HCM 2000 Control Delay	26.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	48.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	71.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Volume (vph)	23	14	70	55	0	77
Future Volume (vph)	23	14	70	55	0	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.949		0.940			
Flt Protected	0.970					
Satd. Flow (prot)	1543	0	1576	0	0	1676
Flt Permitted	0.970					
Satd. Flow (perm)	1543	0	1576	0	0	1676
Link Speed (mph)	30		30			30
Link Distance (ft)	136		132			294
Travel Time (s)	3.1		3.0			6.7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	25	15	76	60	0	84
Shared Lane Traffic (%)						
Lane Group Flow (vph)	40	0	136	0	0	84
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

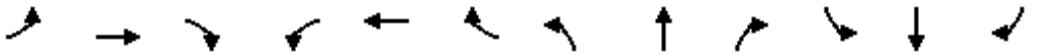
Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 17.8%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Volume (veh/h)	23	14	70	55	0	77
Future Volume (Veh/h)	23	14	70	55	0	77
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	25	15	76	60	0	84
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	190	106			136	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	190	106			136	
tC, single (s)	*4.0	*4.0			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	99			100	
cM capacity (veh/h)	908	1012			1448	

Direction, Lane #	NW 1	NE 1	SW 1
Volume Total	40	136	84
Volume Left	25	0	0
Volume Right	15	60	0
cSH	944	1700	1448
Volume to Capacity	0.04	0.08	0.00
Queue Length 95th (ft)	3	0	0
Control Delay (s)	9.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	17.8%	ICU Level of Service	A
Analysis Period (min)	15		

* User Entered Value



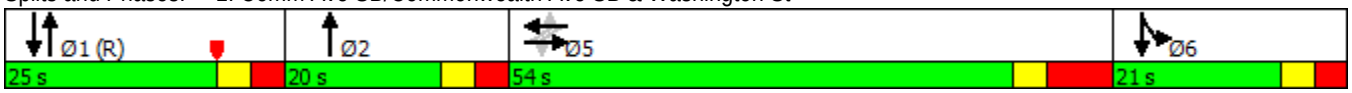
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	436	31	69	323	69	0	511	44	172	675	0
Future Volume (vph)	48	436	31	69	323	69	0	511	44	172	675	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	10	12	12
Storage Length (ft)	25		0	0		0	0		0	130		0
Storage Lanes	1		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			70		
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	1.00
Ped Bike Factor		0.99			0.95			0.97		0.83		
Frt		0.990			0.980			0.988				
Flt Protected	0.950				0.993					0.950		
Satd. Flow (prot)	1624	1630	0	0	1500	0	0	3100	0	1486	3217	0
Flt Permitted	0.383				0.498					0.950		
Satd. Flow (perm)	655	1630	0	0	752	0	0	3100	0	1232	3217	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			8			8				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		267			303			379			331	
Travel Time (s)		6.1			6.9			8.6			7.5	
Confl. Peds. (#/hr)	179		64	64		179	58		105	105		58
Confl. Bikes (#/hr)			9			2						
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.86	0.86	0.86	0.80	0.80	0.80
Heavy Vehicles (%)	0%	3%	0%	2%	7%	2%	0%	0%	0%	2%	1%	0%
Adj. Flow (vph)	53	479	34	76	355	76	0	594	51	215	844	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	53	513	0	0	507	0	0	645	0	215	844	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)		12			12			45			45	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.25	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2			2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100			100		20	100	
Trailing Detector (ft)	0	0		0	0			0		0	0	
Detector 1 Position(ft)	0	0		0	0			0		0	0	
Detector 1 Size(ft)	20	6		20	6			6		20	6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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	Ø1	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			NA		Prot	NA	
Protected Phases		5			5			1 2		6	1 6	
Permitted Phases	5			5								
Detector Phase	5	5		5	5			1 2		6	1 6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0					6.0		
Minimum Split (s)	25.0	25.0		25.0	25.0					20.0		
Total Split (s)	54.0	54.0		54.0	54.0					21.0		
Total Split (%)	45.0%	45.0%		45.0%	45.0%					17.5%		
Maximum Green (s)	45.0	45.0		45.0	45.0					15.0		
Yellow Time (s)	3.0	3.0		3.0	3.0					3.0		
All-Red Time (s)	6.0	6.0		6.0	6.0					3.0		
Lost Time Adjust (s)	0.0	0.0			0.0					0.0		
Total Lost Time (s)	9.0	9.0			9.0					6.0		
Lead/Lag	Lead	Lead		Lead	Lead					Lag		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes					Yes		
Vehicle Extension (s)	2.0	2.0		2.0	2.0					2.0		
Recall Mode	None	None		None	None					None		
Walk Time (s)	7.0	7.0		7.0	7.0					7.0		
Flash Dont Walk (s)	9.0	9.0		9.0	9.0					7.0		
Pedestrian Calls (#/hr)	109	109		109	109					60		
Act Effct Green (s)	46.9	46.9			46.9			37.1		15.0	40.0	
Actuated g/C Ratio	0.39	0.39			0.39			0.31		0.12	0.33	
v/c Ratio	0.21	0.80			1.70			0.67		1.16	0.79	
Control Delay	28.1	44.1			355.4			39.3		162.8	42.5	
Queue Delay	0.0	0.0			0.0			0.0		0.0	0.0	
Total Delay	28.1	44.1			355.4			39.3		162.8	42.5	
LOS	C	D			F			D		F	D	
Approach Delay		42.6			355.4			39.3			66.9	
Approach LOS		D			F			D			E	

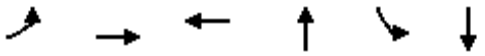
Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 23 (19%), Referenced to phase 1:NBSB, Start of Yellow			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.70			
Intersection Signal Delay: 108.2		Intersection LOS: F	
Intersection Capacity Utilization 110.1%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 1: Comm Ave SB/Commonwealth Ave SB & Washington St



Lane Group	Ø1	Ø2
Detector 2 Channel		
Detector 2 Extend (s)		
Turn Type		
Protected Phases	1	2
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	8.0	5.0
Minimum Split (s)	21.0	20.0
Total Split (s)	25.0	20.0
Total Split (%)	21%	17%
Maximum Green (s)	19.0	14.0
Yellow Time (s)	3.0	3.0
All-Red Time (s)	3.0	3.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	2.0	4.0
Recall Mode	C-Max	None
Walk Time (s)	8.0	7.0
Flash Dont Walk (s)	7.0	7.0
Pedestrian Calls (#/hr)	41	16
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		

Intersection Summary

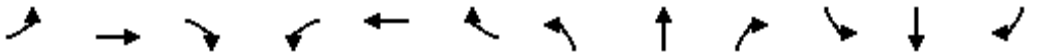


Lane Group	EBL	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	53	513	507	645	215	844
v/c Ratio	0.21	0.80	1.70	0.67	1.16	0.79
Control Delay	28.1	44.1	355.4	39.3	162.8	42.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.1	44.1	355.4	39.3	162.8	42.5
Queue Length 50th (ft)	28	356	~587	221	~197	309
Queue Length 95th (ft)	61	#545	#804	268	#298	330
Internal Link Dist (ft)		187	223	299		251
Turn Bay Length (ft)	25				130	
Base Capacity (vph)	255	638	298	1012	185	1072
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	0.21	0.80	1.70	0.64	1.16	0.79

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

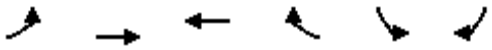
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	436	31	69	323	69	0	511	44	172	675	0
Future Volume (vph)	48	436	31	69	323	69	0	511	44	172	675	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	10	12	12
Total Lost time (s)	9.0	9.0			9.0			6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00			1.00			0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99			0.95			0.97		1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00			1.00		1.00	1.00	
Frt	1.00	0.99			0.98			0.99		1.00	1.00	
Flt Protected	0.95	1.00			0.99			1.00		0.95	1.00	
Satd. Flow (prot)	1624	1630			1499			3101		1486	3217	
Flt Permitted	0.38	1.00			0.50			1.00		0.95	1.00	
Satd. Flow (perm)	655	1630			752			3101		1486	3217	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.86	0.86	0.86	0.80	0.80	0.80
Adj. Flow (vph)	53	479	34	76	355	76	0	594	51	215	844	0
RTOR Reduction (vph)	0	2	0	0	5	0	0	6	0	0	0	0
Lane Group Flow (vph)	53	511	0	0	502	0	0	639	0	215	844	0
Confl. Peds. (#/hr)	179		64	64		179	58		105	105		58
Confl. Bikes (#/hr)			9			2						
Heavy Vehicles (%)	0%	3%	0%	2%	7%	2%	0%	0%	0%	2%	1%	0%
Turn Type	Perm	NA		Perm	NA			NA		Prot	NA	
Protected Phases		5			5			1 2		6	1 6	
Permitted Phases	5			5								
Actuated Green, G (s)	46.9	46.9			46.9			37.1		15.0	40.0	
Effective Green, g (s)	46.9	46.9			46.9			37.1		15.0	40.0	
Actuated g/C Ratio	0.39	0.39			0.39			0.31		0.12	0.33	
Clearance Time (s)	9.0	9.0			9.0					6.0		
Vehicle Extension (s)	2.0	2.0			2.0					2.0		
Lane Grp Cap (vph)	255	637			293			958		185	1072	
v/s Ratio Prot		0.31						c0.21		c0.14	c0.26	
v/s Ratio Perm	0.08				c0.67							
v/c Ratio	0.21	0.80			1.71			0.67		1.16	0.79	
Uniform Delay, d1	24.2	32.4			36.5			36.1		52.5	36.2	
Progression Factor	1.00	1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2	0.1	6.8			335.3			2.0		116.6	3.6	
Delay (s)	24.4	39.3			371.9			38.0		169.1	39.7	
Level of Service	C	D			F			D		F	D	
Approach Delay (s)		37.9			371.9			38.0			66.0	
Approach LOS		D			F			D			E	

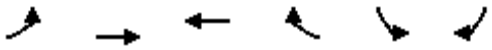
Intersection Summary			
HCM 2000 Control Delay	109.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.33		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	27.0
Intersection Capacity Utilization	110.1%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	30	663	431	123	129	20
Future Volume (vph)	30	663	431	123	129	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.970		0.982	
Flt Protected		0.998			0.959	
Satd. Flow (prot)	0	1727	1586	0	1610	0
Flt Permitted		0.998			0.959	
Satd. Flow (perm)	0	1727	1586	0	1610	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		303	142		132	
Travel Time (s)		6.9	3.2		3.0	
Confl. Peds. (#/hr)	140			140	54	
Confl. Bikes (#/hr)				10		1
Peak Hour Factor	0.90	0.90	0.95	0.95	0.67	0.67
Heavy Vehicles (%)	5%	2%	5%	3%	0%	0%
Adj. Flow (vph)	33	737	454	129	193	30
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	770	583	0	223	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.10	1.10	1.14	1.14	1.14	1.14
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 81.8%		ICU Level of Service D	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	30	663	431	123	129	20
Future Volume (Veh/h)	30	663	431	123	129	20
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.95	0.95	0.67	0.67
Hourly flow rate (vph)	33	737	454	129	193	30
Pedestrians			54		140	
Lane Width (ft)			12.0		12.0	
Walking Speed (ft/s)			3.5		3.5	
Percent Blockage			5		13	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		303	499			
pX, platoon unblocked					0.73	
vC, conflicting volume	723				1516	658
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	723				1521	658
tC, single (s)	4.1				*4.5	*4.5
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				0	95
cM capacity (veh/h)	750				168	553

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	770	583	223
Volume Left	33	0	193
Volume Right	0	129	30
cSH	750	1700	186
Volume to Capacity	0.04	0.34	1.20
Queue Length 95th (ft)	3	0	294
Control Delay (s)	1.2	0.0	181.5
Lane LOS	A		F
Approach Delay (s)	1.2	0.0	181.5
Approach LOS			F

Intersection Summary			
Average Delay	26.3		
Intersection Capacity Utilization	81.8%	ICU Level of Service	D
Analysis Period (min)	15		

* User Entered Value

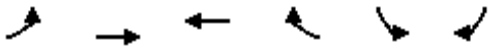
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	720	72	10	554	0	0
Future Volume (vph)	720	72	10	554	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	12	12	13	13
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.988					
Flt Protected				0.999		
Satd. Flow (prot)	1699	0	0	1613	0	0
Flt Permitted				0.999		
Satd. Flow (perm)	1699	0	0	1613	0	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	142			144	376	
Travel Time (s)	3.2			3.3	8.5	
Confl. Peds. (#/hr)		41	41		5	33
Peak Hour Factor	0.93	0.93	0.88	0.88	0.92	0.92
Heavy Vehicles (%)	3%	0%	0%	6%	0%	0%
Adj. Flow (vph)	774	77	11	630	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	851	0	0	641	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	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	1.10	1.10	1.14	1.14	1.10	1.10
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 63.9%		ICU Level of Service B	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	720	72	10	554	0	0
Future Volume (Veh/h)	720	72	10	554	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.88	0.88	0.92	0.92
Hourly flow rate (vph)	774	77	11	630	0	0
Pedestrians	5			33	41	
Lane Width (ft)	13.0			12.0	0.0	
Walking Speed (ft/s)	3.5			3.5	3.5	
Percent Blockage	1			3	0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	445			357		
pX, platoon unblocked			0.75		0.75	0.75
vC, conflicting volume			892		1510	886
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			685		1514	678
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		100	100
cM capacity (veh/h)			685		97	329

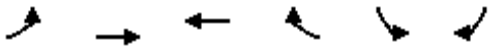
Direction, Lane #	EB 1	WB 1
Volume Total	851	641
Volume Left	0	11
Volume Right	77	0
cSH	1700	685
Volume to Capacity	0.50	0.02
Queue Length 95th (ft)	0	1
Control Delay (s)	0.0	0.4
Lane LOS		A
Approach Delay (s)	0.0	0.4
Approach LOS		

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	63.9%	ICU Level of Service	B
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	75	645	513	49	0	51
Future Volume (vph)	75	645	513	49	0	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.965			0.865
Flt Protected		0.985				
Satd. Flow (prot)	0	1695	1572	0	0	1450
Flt Permitted		0.985				
Satd. Flow (perm)	0	1695	1572	0	0	1450
Link Speed (mph)		30	30		30	
Link Distance (ft)		144	213		145	
Travel Time (s)		3.3	4.8		3.3	
Confl. Peds. (#/hr)	35			35	3	5
Confl. Bikes (#/hr)				4		
Peak Hour Factor	0.25	0.92	0.92	0.25	0.92	0.92
Heavy Vehicles (%)	2%	3%	6%	2%	0%	2%
Adj. Flow (vph)	300	701	558	196	0	55
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1001	754	0	0	55
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	1.10	1.10	1.14	1.14	1.14	1.14
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 90.8%		ICU Level of Service E	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	75	645	513	49	0	51
Future Volume (Veh/h)	75	645	513	49	0	51
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.25	0.92	0.92	0.25	0.92	0.92
Hourly flow rate (vph)	300	701	558	196	0	55
Pedestrians		5	3		35	
Lane Width (ft)		13.0	12.0		12.0	
Walking Speed (ft/s)		3.5	3.5		3.5	
Percent Blockage		1	0		3	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		589	213			
pX, platoon unblocked	0.75				0.86	0.75
vC, conflicting volume	789				1995	696
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	547				1480	423
tC, single (s)	4.1				*4.0	*4.0
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	59				100	91
cM capacity (veh/h)	737				184	588

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	1001	754	55
Volume Left	300	0	0
Volume Right	0	196	55
cSH	737	1700	588
Volume to Capacity	0.41	0.44	0.09
Queue Length 95th (ft)	50	0	8
Control Delay (s)	10.3	0.0	11.8
Lane LOS	B		B
Approach Delay (s)	10.3	0.0	11.8
Approach LOS			B

Intersection Summary			
Average Delay	6.1		
Intersection Capacity Utilization	90.8%	ICU Level of Service	E
Analysis Period (min)	15		

* User Entered Value

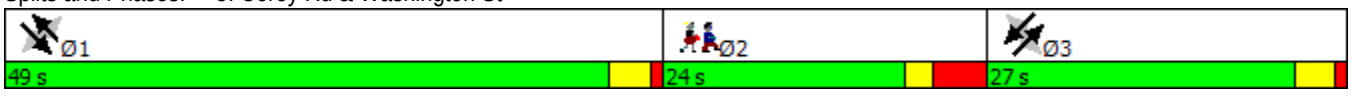
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	88	416	140	15	382	134	73	190	15	58	291	107
Future Volume (vph)	88	416	140	15	382	134	73	190	15	58	291	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	16	16	16	13	13	13	13	13	13
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			0.98			0.99			0.97	
Frt		0.971			0.966			0.993			0.968	
Flt Protected		0.993			0.999			0.987			0.994	
Satd. Flow (prot)	0	1647	0	0	1745	0	0	1670	0	0	1643	0
Flt Permitted		0.817			0.978			0.510			0.858	
Satd. Flow (perm)	0	1352	0	0	1707	0	0	857	0	0	1416	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		213			214			198			219	
Travel Time (s)		4.8			4.9			4.5			5.0	
Confl. Peds. (#/hr)	56		35	35		56	46		11	11		46
Confl. Bikes (#/hr)			10			9						
Peak Hour Factor	0.96	0.96	0.96	0.86	0.86	0.86	0.84	0.84	0.84	0.93	0.93	0.93
Heavy Vehicles (%)	0%	3%	0%	0%	6%	2%	8%	2%	0%	0%	1%	0%
Adj. Flow (vph)	92	433	146	17	444	156	87	226	18	62	313	115
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	671	0	0	617	0	0	331	0	0	490	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	1.10	1.10	1.10	0.97	0.97	0.97	1.10	1.10	1.10	1.10	1.10	1.10
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	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	

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 (%)	
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)	
Turn Type	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Protected Phases		1			1			3			3	
Permitted Phases	1			1			3			3		
Detector Phase	1	1		1	1		3	3		3	3	
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)	49.0	49.0		49.0	49.0		27.0	27.0		27.0	27.0	
Total Split (%)	49.0%	49.0%		49.0%	49.0%		27.0%	27.0%		27.0%	27.0%	
Maximum Green (s)	45.0	45.0		45.0	45.0		23.0	23.0		23.0	23.0	
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?	Yes	Yes		Yes	Yes							
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		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		45.8			45.8			23.4			23.4	
Actuated g/C Ratio		0.51			0.51			0.26			0.26	
v/c Ratio		0.98			0.71			1.49			1.34	
Control Delay		56.6			26.0			272.7			200.3	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		56.6			26.0			272.7			200.3	
LOS		E			C			F			F	
Approach Delay		56.6			26.0			272.7			200.3	
Approach LOS		E			C			F			F	

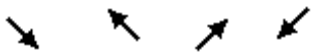
Intersection Summary			
Area Type:	CBD		
Cycle Length: 100			
Actuated Cycle Length: 90.4			
Natural Cycle: 150			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.49			
Intersection Signal Delay: 114.9		Intersection LOS: F	
Intersection Capacity Utilization 115.5%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 5: Corey Rd & Washington St



Lane Group	Ø2
Protected Phases	2
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	24.0
Total Split (s)	24.0
Total Split (%)	24%
Maximum Green (s)	18.0
Yellow Time (s)	2.0
All-Red Time (s)	4.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lag
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	10.0
Flash Dont Walk (s)	8.0
Pedestrian Calls (#/hr)	37
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

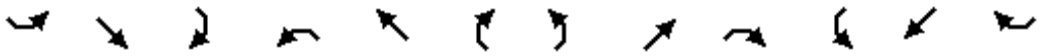


Lane Group	SET	NWT	NET	SWT
Lane Group Flow (vph)	671	617	331	490
v/c Ratio	0.98	0.71	1.49	1.34
Control Delay	56.6	26.0	272.7	200.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	56.6	26.0	272.7	200.3
Queue Length 50th (ft)	~489	329	~310	~436
Queue Length 95th (ft)	#707	445	#441	#633
Internal Link Dist (ft)	133	134	118	139
Turn Bay Length (ft)				
Base Capacity (vph)	685	865	222	366
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	0.98	0.71	1.49	1.34

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	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	88	416	140	15	382	134	73	190	15	58	291	107
Future Volume (vph)	88	416	140	15	382	134	73	190	15	58	291	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	13	13	16	16	16	13	13	13	13	13	13
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			0.97	
Flpb, ped/bikes		1.00			1.00			0.99			1.00	
Frt		0.97			0.97			0.99			0.97	
Flt Protected		0.99			1.00			0.99			0.99	
Satd. Flow (prot)		1644			1746			1658			1644	
Flt Permitted		0.82			0.98			0.51			0.86	
Satd. Flow (perm)		1352			1709			857			1420	
Peak-hour factor, PHF	0.96	0.96	0.96	0.86	0.86	0.86	0.84	0.84	0.84	0.93	0.93	0.93
Adj. Flow (vph)	92	433	146	17	444	156	87	226	18	62	313	115
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	671	0	0	617	0	0	331	0	0	490	0
Confl. Peds. (#/hr)	56		35	35		56	46		11	11		46
Confl. Bikes (#/hr)			10			9						
Heavy Vehicles (%)	0%	3%	0%	0%	6%	2%	8%	2%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		1			1			3			3	
Permitted Phases	1			1			3			3		
Actuated Green, G (s)		45.8			45.8			23.4			23.4	
Effective Green, g (s)		45.8			45.8			23.4			23.4	
Actuated g/C Ratio		0.49			0.49			0.25			0.25	
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)		665			841			215			357	
v/s Ratio Prot												
v/s Ratio Perm		c0.50			0.36			c0.39			0.35	
v/c Ratio		1.01			0.73			1.54			1.37	
Uniform Delay, d1		23.6			18.8			34.8			34.8	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		37.1			5.6			264.7			184.5	
Delay (s)		60.7			24.4			299.5			219.3	
Level of Service		E			C			F			F	
Approach Delay (s)		60.7			24.4			299.5			219.3	
Approach LOS		E			C			F			F	

Intersection Summary			
HCM 2000 Control Delay	124.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	93.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	115.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

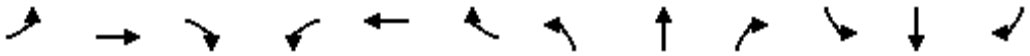
Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	15	479	531	10	5	0
Future Volume (vph)	15	479	531	10	5	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	16	12	11	11
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.998			
Flt Protected		0.998			0.950	
Satd. Flow (prot)	0	1714	1844	0	1570	0
Flt Permitted		0.998			0.950	
Satd. Flow (perm)	0	1714	1844	0	1570	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		214	124		137	
Travel Time (s)		4.9	2.8		3.1	
Confl. Peds. (#/hr)	65			65		
Confl. Bikes (#/hr)				13		
Peak Hour Factor	0.90	0.90	0.89	0.89	0.50	0.50
Heavy Vehicles (%)	0%	3%	5%	0%	0%	0%
Adj. Flow (vph)	17	532	597	11	10	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	549	608	0	10	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	1.10	1.10	0.97	1.14	1.19	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 51.5%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (veh/h)	15	479	531	10	5	0
Future Volume (Veh/h)	15	479	531	10	5	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.89	0.89	0.50	0.50
Hourly flow rate (vph)	17	532	597	11	10	0
Pedestrians					65	
Lane Width (ft)					11.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					6	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		214				
pX, platoon unblocked					0.71	
vC, conflicting volume	673				1234	668
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	673				1122	668
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				93	100
cM capacity (veh/h)	875				150	436

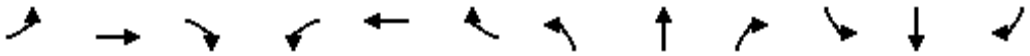
Direction, Lane #	SE 1	NW 1	SW 1
Volume Total	549	608	10
Volume Left	17	0	10
Volume Right	0	11	0
cSH	875	1700	150
Volume to Capacity	0.02	0.36	0.07
Queue Length 95th (ft)	1	0	5
Control Delay (s)	0.5	0.0	30.7
Lane LOS	A		D
Approach Delay (s)	0.5	0.0	30.7
Approach LOS			D

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	51.5%	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)	18	0	66	56	0	8	0	338	73	17	334	0
Future Volume (vph)	18	0	66	56	0	8	0	338	73	17	334	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	12	16	12	12	12	13	13	12	12	13	13
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		0.894			0.983			0.976				
Flt Protected		0.989			0.958						0.999	
Satd. Flow (prot)	0	1482	0	0	1610	0	0	1711	0	0	1765	0
Flt Permitted		0.989			0.958						0.999	
Satd. Flow (perm)	0	1482	0	0	1610	0	0	1711	0	0	1765	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		135			108			219			653	
Travel Time (s)		3.1			2.5			5.0			14.8	
Confl. Peds. (#/hr)	7					7	13		6	6		13
Confl. Bikes (#/hr)									2			1
Peak Hour Factor	0.25	0.25	0.25	0.44	0.25	0.44	0.25	0.94	0.94	0.89	0.25	0.25
Heavy Vehicles (%)	2%	2%	2%	0%	2%	0%	2%	1%	0%	0%	0%	2%
Adj. Flow (vph)	72	0	264	127	0	18	0	360	78	19	1336	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	336	0	0	145	0	0	438	0	0	1355	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	0.97	1.14	0.97	1.14	1.14	1.14	1.10	1.10	1.14	1.14	1.10	1.10
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 52.9%		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)	18	0	66	56	0	8	0	338	73	17	334	0
Future Volume (Veh/h)	18	0	66	56	0	8	0	338	73	17	334	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.25	0.25	0.44	0.25	0.44	0.25	0.94	0.94	0.89	0.25	0.25
Hourly flow rate (vph)	72	0	264	127	0	18	0	360	78	19	1336	0
Pedestrians		13			6						7	
Lane Width (ft)		12.0			12.0						13.0	
Walking Speed (ft/s)		3.5			3.5						3.5	
Percent Blockage		1			1						1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								219			653	
pX, platoon unblocked	0.89	0.89	0.97	0.89	0.89	0.87	0.97			0.87		
vC, conflicting volume	1811	1831	1349	2043	1792	412	1349			444		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1773	1795	1344	2034	1752	255	1344			292		
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 %	71	100	35	0	100	98	100			98		
cM capacity (veh/h)	249	69	407	74	73	795	491			1114		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	336	145	438	1355
Volume Left	72	127	0	19
Volume Right	264	18	78	0
cSH	358	84	1700	1114
Volume to Capacity	0.94	1.73	0.26	0.02
Queue Length 95th (ft)	248	303	0	1
Control Delay (s)	67.6	456.9	0.0	0.8
Lane LOS	F	F		A
Approach Delay (s)	67.6	456.9	0.0	0.8
Approach LOS	F	F		

Intersection Summary				
Average Delay	39.6			
Intersection Capacity Utilization	52.9%	ICU Level of Service	A	
Analysis Period (min)	15			

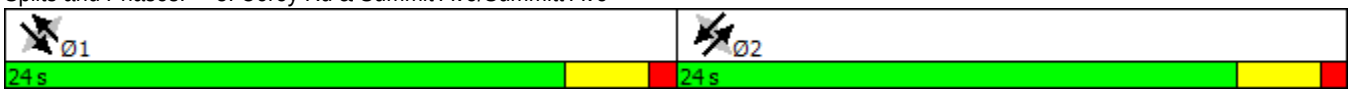
* User Entered Value

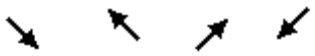
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	15	67	73	52	103	5	78	289	54	5	237	10
Future Volume (vph)	15	67	73	52	103	5	78	289	54	5	237	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	13	13	13	13	13	13	13	13	13
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			1.00			0.99			1.00	
Frt		0.936			0.995			0.983			0.995	
Flt Protected		0.995			0.984			0.991			0.999	
Satd. Flow (prot)	0	1614	0	0	1728	0	0	1697	0	0	1735	0
Flt Permitted		0.971			0.874			0.890			0.992	
Satd. Flow (perm)	0	1574	0	0	1531	0	0	1516	0	0	1723	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		188			176			653			281	
Travel Time (s)		4.3			4.0			14.8			6.4	
Confl. Peds. (#/hr)	7		9	9		7	34		18	18		34
Confl. Bikes (#/hr)									1			1
Peak Hour Factor	0.87	0.87	0.87	0.89	0.89	0.89	0.88	0.88	0.88	0.91	0.91	0.91
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	1%	1%	0%	0%	1%	0%
Adj. Flow (vph)	17	77	84	58	116	6	89	328	61	5	260	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	178	0	0	180	0	0	478	0	0	276	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	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
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	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2			2		
Detector Phase	1	1		1	1		2	2		2	2	
Switch Phase												
Minimum Initial (s)	14.0	14.0		14.0	14.0		14.0	14.0		14.0	14.0	
Minimum Split (s)	22.0	22.0		22.0	22.0		22.0	22.0		22.0	22.0	
Total Split (s)	24.0	24.0		24.0	24.0		24.0	24.0		24.0	24.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
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		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
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)	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	
Pedestrian Calls (#/hr)	13	13		13	13		4	4		4	4	
Act Effct Green (s)		20.0			20.0			20.0			20.0	
Actuated g/C Ratio		0.42			0.42			0.42			0.42	
v/c Ratio		0.27			0.28			0.76			0.38	
Control Delay		10.7			10.8			22.5			11.7	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		10.7			10.8			22.5			11.7	
LOS		B			B			C			B	
Approach Delay		10.7			10.8			22.5			11.7	
Approach LOS		B			B			C			B	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 48			
Actuated Cycle Length: 48			
Natural Cycle: 50			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 16.0		Intersection LOS: B	
Intersection Capacity Utilization 73.1%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 8: Corey Rd & Summit Ave/Summitt Ave





Lane Group	SET	NWT	NET	SWT
Lane Group Flow (vph)	178	180	478	276
v/c Ratio	0.27	0.28	0.76	0.38
Control Delay	10.7	10.8	22.5	11.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	10.7	10.8	22.5	11.7
Queue Length 50th (ft)	31	31	107	50
Queue Length 95th (ft)	61	64	#231	96
Internal Link Dist (ft)	108	96	573	201
Turn Bay Length (ft)				
Base Capacity (vph)	655	637	631	717
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	0.27	0.28	0.76	0.38

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	15	67	73	52	103	5	78	289	54	5	237	10
Future Volume (vph)	15	67	73	52	103	5	78	289	54	5	237	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	13	13	13	13	13	13	13	13	13	13	13
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			1.00			0.99			1.00	
Flpb, ped/bikes		1.00			1.00			0.99			1.00	
Frt		0.94			1.00			0.98			0.99	
Flt Protected		1.00			0.98			0.99			1.00	
Satd. Flow (prot)		1614			1724			1687			1735	
Flt Permitted		0.97			0.87			0.89			0.99	
Satd. Flow (perm)		1574			1531			1516			1723	
Peak-hour factor, PHF	0.87	0.87	0.87	0.89	0.89	0.89	0.88	0.88	0.88	0.91	0.91	0.91
Adj. Flow (vph)	17	77	84	58	116	6	89	328	61	5	260	11
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	178	0	0	180	0	0	478	0	0	276	0
Confl. Peds. (#/hr)	7		9	9		7	34		18	18		34
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	1%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2			2		
Actuated Green, G (s)		20.0			20.0			20.0			20.0	
Effective Green, g (s)		20.0			20.0			20.0			20.0	
Actuated g/C Ratio		0.42			0.42			0.42			0.42	
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)		655			637			631			717	
v/s Ratio Prot												
v/s Ratio Perm		0.11			c0.12			c0.32			0.16	
v/c Ratio		0.27			0.28			0.76			0.38	
Uniform Delay, d1		9.2			9.3			11.9			9.7	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.0			1.1			8.3			1.6	
Delay (s)		10.2			10.4			20.2			11.3	
Level of Service		B			B			C			B	
Approach Delay (s)		10.2			10.4			20.2			11.3	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM 2000 Control Delay	14.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	48.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Volume (vph)	28	28	49	101	3	118
Future Volume (vph)	28	28	49	101	3	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.932		0.909			
Flt Protected	0.976					0.999
Satd. Flow (prot)	1525	0	1524	0	0	1675
Flt Permitted	0.976					0.999
Satd. Flow (perm)	1525	0	1524	0	0	1675
Link Speed (mph)	30		30			30
Link Distance (ft)	129		132			294
Travel Time (s)	2.9		3.0			6.7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	30	30	53	110	3	128
Shared Lane Traffic (%)						
Lane Group Flow (vph)	60	0	163	0	0	131
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 20.1%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Volume (veh/h)	28	28	49	101	3	118
Future Volume (Veh/h)	28	28	49	101	3	118
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	30	30	53	110	3	128
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	242	108			163	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	242	108			163	
tC, single (s)	*4.0	*4.0			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	97			100	
cM capacity (veh/h)	876	1011			1416	

Direction, Lane #	NW 1	NE 1	SW 1
Volume Total	60	163	131
Volume Left	30	0	3
Volume Right	30	110	0
cSH	939	1700	1416
Volume to Capacity	0.06	0.10	0.00
Queue Length 95th (ft)	5	0	0
Control Delay (s)	9.1	0.0	0.2
Lane LOS	A		A
Approach Delay (s)	9.1	0.0	0.2
Approach LOS	A		

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	20.1%	ICU Level of Service	A
Analysis Period (min)	15		

* User Entered Value

Appendix E: Noise Monitoring Data

Summary	
Filename	VHB_Main.029
Serial Number	2555
Model	Model 831
Firmware Version	2.314
User	MJA/EI
Location	ML1-Washington 1
Job Description	15 Washington Street
Note	
Measurement Description	
Start	2017/12/06 11:24:25
Stop	2017/12/06 17:59:43
Duration	6:35:17.7
Run Time	6:35:17.7
Pause	0:00:00.0
Pre Calibration	2017/12/06 11:22:54
Post Calibration	2017/12/06 18:00:12
Calibration Deviation	0.00 dB
Overall Settings	
RMS Weight	A Weighting
Peak Weight	A Weighting
Detector	Slow
Preamp	PRM831
Microphone Correction	Off
Integration Method	Exponential
OBA Range	Low
OBA Bandwidth	1/1 and 1/3
OBA Freq. Weighting	A Weighting
OBA Max Spectrum	At Lmax

Summary	
Filename	VHB_Main.030
Serial Number	2555
Model	Model 831
Firmware Version	2.314
User	MJA/EI
Location	ML1-Washington St 2
Job Description	15 Washington St
Note	
Measurement Description	
Start	2017/12/06 18:03:52
Stop	2017/12/07 8:14:04
Duration	14:10:12.2
Run Time	14:10:12.2
Pause	0:00:00.0
Pre Calibration	2017/12/06 18:03:24
Post Calibration	2017/12/07 11:27:46
Calibration Deviation	0.00 dB
Overall Settings	
RMS Weight	A Weighting
Peak Weight	A Weighting
Detector	Slow
Preamp	PRM831
Microphone Correction	Off
Integration Method	Exponential
OBA Range	Low
OBA Bandwidth	1/1 and 1/3
OBA Freq. Weighting	A Weighting
OBA Max Spectrum	At Lmax

Project	15 Washington St
Location	ML1 - Washington St

Record #	Hour	Time	Laeq	L90
1	11	12/6/17 11:24 AM	64.2	55.8
2	12	12/6/17 12:00 PM	65.2	55.5
3	13	12/6/17 1:00 PM	62.3	54.5
4	14	12/6/17 2:00 PM	67.4	55.3
5	15	12/6/17 3:00 PM	63.6	54.3
6	16	12/6/17 4:00 PM	61.0	54.3
7	17	12/6/17 5:00 PM	60.3	54.4
8	18	12/6/17 6:03 PM	62.1	53.8
9	19	12/6/17 7:00 PM	59.2	53.0
10	20	12/6/17 8:00 PM	59.4	52.4
11	21	12/6/17 9:00 PM	58.3	50.9
12	22	12/6/17 10:00 PM	57.7	49.5
13	23	12/6/17 11:00 PM	57.5	48.1
14	00	12/7/17 12:00 AM	53.9	44.8
15	01	12/7/17 1:00 AM	52.3	44.4
16	02	12/7/17 2:00 AM	51.0	44.1
17	03	12/7/17 3:00 AM	53.0	44.3
18	04	12/7/17 4:00 AM	58.7	55.2
19	05	12/7/17 5:00 AM	59.3	52.4
20	06	12/7/17 6:00 AM	61.0	52.7
21	07	12/7/17 7:00 AM	62.1	55.1
22	08	12/7/17 8:00 AM	63.1	55.6

	Min	Max
Day (7am-11pm) Leq	60.3	67.4
Day (7am-11pm) L90	54.3	55.8
Night (11pm-7am) Leq	51.0	62.1
Night (11pm-7am) L90	44.1	55.2
Total Leq	51.0	67.4
Total L90	44.1	55.8

LML	
Filename	LxT_Data.014
Serial Number	4586
Model	SoundTrack LxT®
Firmware Version	2.301
User	MJA/EI
Location	ML2-Allston St
Job Description	15 Washington St
Note	
Measurement Description	
Start	2017/12/06 11:16:43
Stop	2017/12/07 11:32:46
Duration	1 Day 00:16:03.0
Run Time	1 Day 00:16:03.0
Pause	0:00:00.0
Pre Calibration	2017/12/06 11:14:21
Post Calibration	2017/12/07 11:33:34
Calibration Deviation	0.11 dB
Overall Settings	
RMS Weight	A Weighting
Peak Weight	A Weighting
Detector	Slow
Preamp	PRMLxT1
Microphone Correction	Off
Integration Method	Exponential
OBA Range	Low
OBA Bandwidth	1/1 and 1/3
OBA Freq. Weighting	A Weighting
OBA Max Spectrum	At Lmax

Project	15 Washington St
Location	ML2 - Allston St

Record #	Hour	Time	Laeq	L90
1	11	12/6/17 11:16 AM	57.2	51.6
2	12	12/6/17 12:00 PM	56.4	52.8
3	13	12/6/17 1:00 PM	69.4	51.2
4	14	12/6/17 2:00 PM	58.2	51.4
5	15	12/6/17 3:00 PM	54.8	50.5
6	16	12/6/17 4:00 PM	54.4	50.3
7	17	12/6/17 5:00 PM	55.6	51.1
8	18	12/6/17 6:00 PM	57.3	50.9
9	19	12/6/17 7:00 PM	53.2	50.1
10	20	12/6/17 8:00 PM	54.1	49.3
11	21	12/6/17 9:00 PM	51.7	48.1
12	22	12/6/17 10:00 PM	51.9	47.2
13	23	12/6/17 11:00 PM	53.0	45.7
14	00	12/7/17 12:00 AM	47.6	44.6
15	01	12/7/17 1:00 AM	46.8	44.1
16	02	12/7/17 2:00 AM	47.1	43.8
17	03	12/7/17 3:00 AM	56.1	43.9
18	04	12/7/17 4:00 AM	58.0	55.3
19	05	12/7/17 5:00 AM	58.3	55.6
20	06	12/7/17 6:00 AM	56.7	50.2
21	07	12/7/17 7:00 AM	55.4	51.3
22	08	12/7/17 8:00 AM	54.8	51.6
23	09	12/7/17 9:00 AM	63.9	51.9
24	10	12/7/17 10:00 AM	56.9	51.7

	Min	Max
Day (7am-11pm) Leq	54.4	69.4
Day (7am-11pm) L90	50.3	52.8
Night (11pm-7am) Leq	46.8	58.3
Night (11pm-7am) L90	43.8	55.6
Total Leq	46.8	69.4
Total L90	43.8	55.6

Appendix F: Air Quality Supporting Documentation

MOVES Emissions Factor Output

Mobile Source Microscale Analysis

Background Concentrations

MOVES Emissions Factor Output

Washington Street Plaza
MOVES Output

movesRunId	yearId	monthId	dayId	hourId	linkId	linkDescription	pollutant	GramsPerVehMile	GramsPerVehHour
1	2022	1	5	9	1	Wash_E@Corey_FF	CO	1.85	-
1	2022	1	5	9	2	Corey_N@Wash_FF	CO	4.03	-
1	2022	1	5	9	3	Corey_S@Wash_FF	CO	2.65	-
1	2022	1	5	9	4	Wash_W@Corey_FF	CO	2.37	-
1	2022	1	5	9	5	Wash_W@Comm_FF	CO	1.81	-
1	2022	1	5	9	6	Wash_E@Comm_FF	CO	3.14	-
1	2022	1	5	9	7	CommSB_App@Wash_FF	CO	1.71	-
1	2022	1	5	9	8	CommSB_Dep@Wash_FF	CO	3.85	-
1	2022	1	5	9	9	CommNB_App@Wash_FF	CO	4.23	-
1	2022	1	5	9	10	CommNB_Dep@Wash_FF	CO	1.70	-
1	2022	1	5	9	11	Idle Link	CO	-	5.78

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 6/18/2018 at 15:28:47

JOB: 15 WASHINGTON RUN: NO BUILD

DATE : 06/18/ 0
TIME : 15:28:47

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 (M)	BRG (DEG)	TYPE	VPH (G/MI)	EF	H (M)	W (M)	V/C	QUEUE (VEH)
	*	X1	Y1	X2	Y2	*									
1. WASH_E@COREY_FF	*	323684.0	********	323791.4	********	*	140.	130.	AG	1085.	1.9	0.0	17.6		
2. COREY_N@WASH_FF	*	323684.0	********	323764.7	********	*	114.	45.	AG	775.	4.0	0.0	13.9		
3. COREY_S@WASH_FF	*	323684.0	********	323592.7	********	*	130.	225.	AG	651.	2.7	0.0	16.4		
4. WASH_W@COREY_FF	*	323684.0	********	323610.3	********	*	90.	305.	AG	1225.	2.4	0.0	17.6		
5. WASH_W@COMM_FF	*	323489.8	********	323347.2	********	*	178.	307.	AG	823.	1.8	0.0	17.6		
6. WASH_E@COMM_FF	*	323489.8	********	323610.3	********	*	157.	130.	AG	1119.	3.1	0.0	17.6		
7. COMMSB_APP@WASH_FF	*	323479.5	********	323575.5	********	*	193.	30.	AG	840.	1.7	0.0	17.6		
8. COMMSB_DEP@WASH_FF	*	323479.5	********	323424.4	********	*	107.	211.	AG	771.	3.8	0.0	13.3		
9. COMMNB_APP@WASH_FF	*	323498.7	********	323442.6	********	*	105.	212.	AG	548.	4.2	0.0	13.3		
10. COMMNB_DEP@WASH_FF	*	323496.8	********	323584.9	********	*	185.	28.	AG	626.	1.7	0.0	13.3		
11. WASHEB@COREY_Q	*	323674.2	********	323602.6	********	*	88.	305.	AG	8.	100.0	0.0	3.7	0.99	14.6
12. COREYSB@WASH_Q	*	323691.2	********	323733.3	********	*	60.	45.	AG	11.	100.0	0.0	3.4	0.98	10.0
13. WASHWB@COREY_Q	*	323694.2	********	323728.1	********	*	44.	130.	AG	8.	100.0	0.0	3.7	0.73	7.4
14. COREYNB@WASH_Q	*	323678.3	********	323655.2	********	*	33.	225.	AG	11.	100.0	0.0	3.7	0.73	5.5
15. WASHEB@COMM_Q	*	323457.3	********	323412.7	********	*	56.	307.	AG	9.	100.0	0.0	6.1		

0.38 9.3
16. WASHWB@COMM_Q * 323518.5 ******** 323556.8 ******** * 49. 129. AG 9. 100.0 0.0 5.5 0.67 8.2
17. COMMSBTHRU@WASH_Q * 323485.9 ******** 323527.0 ******** * 83. 30. AG 10. 100.0 0.0 7.3 0.60 13.9
18. COMMSBLT@WASH_Q * 323490.6 ******** 323504.0 ******** * 27. 29. AG 13. 100.0 0.0 3.7 0.73 4.5
19. COMMNB@WASH_Q * 323490.2 ******** 323456.9 ******** * 69. 209. AG 10. 100.0 0.0 7.3 0.50 11.4

JOB: 15 WASHINGTON RUN: NO BUILD

DATE : 06/18/ 0
TIME : 15:28:47

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. WASHEB@COREY_Q	* 100	51	2.0	715	1600	5.78	2	3
12. COREYSB@WASH_Q	* 100	73	2.0	359	1600	5.78	2	3
13. WASHWB@COREY_Q	* 100	51	2.0	523	1600	5.78	2	3
14. COREYNB@WASH_Q	* 100	73	2.0	269	1600	5.78	2	3
15. WASHEB@COMM_Q	* 120	66	2.0	506	3200	5.78	2	3
16. WASHWB@COMM_Q	* 120	66	2.0	449	1600	5.78	2	3
17. COMMSBTHRU@WASH_Q	* 120	74	2.0	675	3200	5.78	2	3
18. COMMSBLT@WASH_Q	* 120	99	2.0	165	1600	5.78	2	3
19. COMMNB@WASH_Q	* 120	75	2.0	548	3200	5.78	2	3

RECEPTOR LOCATIONS

RECEPTOR	* COORDINATES (M) X	Y	Z *
1. 1E1	* 323695.9	********	1.8 *
2. 1E2	* 323708.8	********	1.8 *
3. 1E3	* 323728.0	********	1.8 *
4. 1E4	* 323747.2	********	1.8 *
5. 1E5	* 323734.1	********	1.8 *
6. 1E6	* 323716.4	********	1.8 *
7. 1E7	* 323698.7	********	1.8 *
8. 1N1	* 323684.7	********	1.8 *
9. 1N2	* 323696.8	********	1.8 *
10. 1N3	* 323714.6	********	1.8 *
11. 1N4	* 323635.8	********	1.8 *
12. 1N5	* 323656.2	********	1.8 *
13. 1N6	* 323676.6	********	1.8 *
14. 1S1	* 323728.2	********	1.8 *
15. 1S2	* 323709.0	********	1.8 *
16. 1S3	* 323689.8	********	1.8 *
17. 1S4	* 323684.1	********	1.8 *

18. 1S5	*	323672.3	********	1.8 *
19. 1S6	*	323654.8	********	1.8 *
20. 1S7	*	323637.2	********	1.8 *
21. 1W1	*	323622.0	********	1.8 *
22. 1W2	*	323639.5	********	1.8 *
23. 1W3	*	323657.1	********	1.8 *
24. 1W4	*	323670.7	********	1.8 *
25. 1W5	*	323658.5	********	1.8 *
26. 1W6	*	323638.1	********	1.8 *
27. 1W7	*	323617.8	********	1.8 *
28. 2N1	*	323491.1	********	1.8 *
29. 2N2	*	323495.9	********	1.8 *
30. 2N3	*	323521.0	********	1.8 *
31. 2N4	*	323508.6	********	1.8 *
32. 2N5	*	323496.1	********	1.8 *
33. 2N6	*	323502.9	********	1.8 *
34. 2N7	*	323514.8	********	1.8 *
35. 2N8	*	323526.6	********	1.8 *
36. 2NE1	*	323514.6	********	1.8 *

DATE : 06/18/ 0
TIME : 15:28:47

RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z *
37. 2NE2	*	323533.9	********	1.8 *
38. 2NE3	*	323553.2	********	1.8 *
39. 2NE4	*	323572.4	********	1.8 *
40. 2NE5	*	323543.2	********	1.8 *
41. 2NE6	*	323531.3	********	1.8 *
42. 2NE7	*	323519.4	********	1.8 *
43. 2NE8	*	323506.5	********	1.8 *
44. 2NW1	*	323412.4	********	1.8 *
45. 2NW2	*	323432.4	********	1.8 *
46. 2NW3	*	323452.4	********	1.8 *
47. 2NW4	*	323472.4	********	1.8 *
48. 2NW5	*	323476.8	********	1.8 *
49. 2NW6	*	323484.3	********	1.8 *
50. 2NW7	*	323496.7	********	1.8 *
51. 2NW8	*	323509.1	********	1.8 *
52. 2S1	*	323484.5	********	1.8 *
53. 2S2	*	323488.5	********	1.8 *
54. 2S3	*	323480.4	********	1.8 *
55. 2S4	*	323472.3	********	1.8 *
56. 2S5	*	323459.4	********	1.8 *
57. 2S6	*	323446.5	********	1.8 *
58. 2S7	*	323450.3	********	1.8 *
59. 2S8	*	323463.7	********	1.8 *

60. 2S9	* 323477.1	********	1.8 *
61. 2SE1	* 323546.9	********	1.8 *
62. 2SE2	* 323527.7	********	1.8 *
63. 2SE3	* 323508.4	********	1.8 *
64. 2SE4	* 323499.0	********	1.8 *
65. 2SE5	* 323490.9	********	1.8 *
66. 2SE6	* 323477.6	********	1.8 *
67. 2SE7	* 323464.2	********	1.8 *
68. 2SW1	* 323464.5	********	1.8 *
69. 2SW2	* 323444.5	********	1.8 *
70. 2SW3	* 323424.5	********	1.8 *
71. 2SW4	* 323404.6	********	1.8 *
72. 2SW5	* 323431.6	********	1.8 *
73. 2SW6	* 323444.5	********	1.8 *
74. 2SW7	* 323457.4	********	1.8 *
75. 2SW8	* 323469.3	********	1.8 *

JOB: 15 WASHINGTON 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.	*	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.1	0.1
10.	*	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	0.1	0.1	0.2	0.1	0.1	0.1	0.1
20.	*	0.1	0.1	0.0	0.0	0.1	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.1	0.1	0.1
30.	*	0.2	0.0	0.0	0.0	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.1	0.1
40.	*	0.2	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.1	0.1	0.1
50.	*	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.0	0.0	0.0
60.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0
70.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0
80.	*	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	0.1	0.0	0.0	0.0
90.	*	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	0.1	0.0	0.0	0.0
100.	*	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	0.1	0.0	0.0	0.0
110.	*	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	0.1	0.0	0.0	0.0
120.	*	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	0.0	0.0	0.0
130.	*	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.2	0.1	0.1	0.1	0.1	0.3	0.1	0.1	0.1	0.1	0.0	0.0	0.0
140.	*	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.2	0.1	0.1	0.1	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
150.	*	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160.	*	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170.	*	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180.	*	0.1	0.1	0.1	0.1	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
190.	*	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0

200. *	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.3	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
210. *	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.2	0.1	0.2	0.1	0.1	0.1	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	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.0
230. *	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1
240. *	0.3	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1
250. *	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1
260. *	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1
270. *	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1
280. *	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1
290. *	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.0	0.0	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1
300. *	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.0	0.0	0.2	0.2	0.1	0.0	0.0	0.0	0.2	0.1	0.1	0.1
310. *	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1
320. *	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	0.1	0.1	0.1	0.2	0.1	0.1	0.1
330. *	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	0.1	0.1	0.1	0.2	0.2	0.1	0.1
340. *	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	0.1	0.1	0.1	0.1	0.2	0.1	0.1
350. *	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	0.1	0.1	0.1	0.1	0.2	0.1	0.1
MAX *	0.3	0.2	0.1	0.1	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.3	0.1	0.1	0.2	0.2	0.2	0.1	0.1
DEGR. *	240	290	130	130	30	20	20	200	50	60	290	300	130	0	0	0	20	30	0	0

JOB: 15 WASHINGTON 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)																			
	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	0.1	0.1	0.1	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	0.1
10. *	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	0.0	0.0	0.0	0.0	0.1
20. *	0.0	0.0	0.0	0.1	0.1	0.1	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	0.1
30. *	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	0.0	0.0	0.0	0.0	0.0
40. *	0.1	0.0	0.0	0.2	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
50. *	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
60. *	0.1	0.1	0.2	0.2	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	0.0	0.0	0.0
70. *	0.1	0.1	0.1	0.2	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	0.0	0.0	0.0
80. *	0.1	0.1	0.1	0.2	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	0.0	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	0.2	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
120. *	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	0.1	0.1	0.1	0.1	0.0
130. *	0.1	0.1	0.1	0.2	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.1	0.1	0.0
140. *	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.2	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.2	0.2	0.2	0.1	0.0
150. *	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.2	0.2	0.2	0.2	0.0

160. *	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.2	0.1	0.1	0.1	0.0
170. *	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.0
180. *	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.2	0.2	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0
190. *	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.2	0.2	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0
200. *	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.2	0.0	0.1	0.1	0.1	0.1	0.1	0.0
210. *	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0
220. *	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1
230. *	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.2	0.1	0.1	0.1	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	0.0	0.0	0.0	0.0	0.2	0.1	0.1	0.1	0.0
250. *	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	0.2	0.1	0.1	0.1	0.0
260. *	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	0.1	0.1	0.1	0.1	0.0
270. *	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	0.1	0.1	0.1	0.1	0.0
280. *	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	0.1	0.1	0.1	0.2	0.0
290. *	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	0.1	0.1	0.2	0.2	0.0
300. *	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	0.1	0.2	0.2	0.0
310. *	0.0	0.0	0.0	0.1	0.1	0.2	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	0.0
320. *	0.0	0.0	0.0	0.1	0.1	0.2	0.2	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
330. *	0.0	0.0	0.0	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
340. *	0.0	0.0	0.0	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
350. *	0.0	0.0	0.1	0.1	0.1	0.1	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	0.0
------*																					
MAX *	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.1
DEGR. *	40	50	60	40	60	310	310	140	140	0	0	0	200	10	10	130	140	140	150	0

JOB: 15 WASHINGTON 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	0.0	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	0.0
10. *	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	0.2	0.1	0.1	0.2	0.1	0.1	0.0
20. *	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	0.2	0.1	0.1	0.2	0.1	0.0	0.0
30. *	0.0	0.0	0.1	0.0	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	0.1	0.1	0.1
40. *	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	0.1	0.1	0.1	0.1	0.1
50. *	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	0.1	0.1	0.2
60. *	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	0.1	0.0	0.1	0.1	0.1	0.2
70. *	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	0.1	0.1	0.1	0.2
80. *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2
90. *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2
100. *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.1	0.0	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	0.0	0.0	0.0	0.3	0.3	0.2	0.1	0.0	0.0	0.1	0.1	0.2

120. *	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.3	0.3	0.2	0.1	0.0	0.0	0.1	0.1	0.1
130. *	0.0	0.0	0.1	0.1	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.2	0.2	0.1	0.0	0.0	0.0	0.1	0.1	0.1
140. *	0.0	0.0	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.0	0.0	0.2	0.2	0.1	0.0	0.0	0.0	0.1	0.1	0.1
150. *	0.0	0.0	0.2	0.1	0.1	0.1	0.2	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1
160. *	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1
170. *	0.0	0.1	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	0.0	0.1	0.1	0.1
180. *	0.0	0.1	0.1	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	0.0	0.1	0.1	0.1
190. *	0.0	0.0	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	0.1	0.1
200. *	0.0	0.0	0.2	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	0.0	0.1	0.1	0.1
210. *	0.0	0.0	0.2	0.0	0.0	0.0	0.0	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
220. *	0.1	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.1	0.1	0.0	0.1	0.1
230. *	0.1	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.1	0.0	0.0	0.1
240. *	0.0	0.0	0.2	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	0.1	0.1
250. *	0.0	0.0	0.2	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	0.1	0.1	0.1	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
270. *	0.0	0.0	0.1	0.1	0.1	0.1	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
280. *	0.0	0.0	0.1	0.1	0.1	0.1	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
290. *	0.0	0.0	0.1	0.1	0.1	0.1	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
300. *	0.0	0.0	0.2	0.1	0.1	0.1	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
310. *	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.2	0.2	0.2	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	0.2	0.2	0.2	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	0.2	0.1	0.2	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	0.1	0.0	0.2	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	0.1	0.0	0.2	0.1	0.1	0.1	0.1	0.1	0.1
MAX *	0.1	0.1	0.2	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.2
DEGR. *	0	0	140	130	130	130	150	170	30	30	30	110	110	10	220	230	10	0	0	50

JOB: 15 WASHINGTON 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) REC61	REC62	REC63	REC64	REC65	REC66	REC67	REC68	REC69	REC70	REC71	REC72	REC73	REC74	REC75
0. *	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
10. *	0.1	0.1	0.1	0.1	0.2	0.1	0.2	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	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0
30. *	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
40. *	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.2	0.1	0.1	0.1
50. *	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.1	0.1
60. *	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	0.1
70. *	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	0.1

```
 80. *  0.1  0.1  0.1  0.1  0.1  0.0  0.0  0.1  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  0.0  0.0  0.1  0.1  0.1  0.1  0.1  0.1  0.2  0.1
100. *  0.1  0.2  0.2  0.1  0.1  0.0  0.0  0.1  0.1  0.1  0.1  0.1  0.1  0.2  0.2
110. *  0.2  0.2  0.2  0.2  0.1  0.0  0.0  0.2  0.1  0.1  0.1  0.1  0.1  0.2  0.2
120. *  0.2  0.2  0.2  0.2  0.1  0.0  0.0  0.2  0.2  0.1  0.1  0.1  0.1  0.1  0.2
130. *  0.1  0.1  0.1  0.1  0.0  0.0  0.0  0.2  0.1  0.0  0.0  0.1  0.1  0.1  0.2
140. *  0.1  0.1  0.1  0.1  0.0  0.0  0.0  0.1  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  0.1  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  0.1  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  0.1  0.0  0.0  0.0  0.1  0.1  0.1  0.1
180. *  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.1  0.0  0.0  0.0  0.1  0.1  0.1  0.1
190. *  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.1  0.0  0.0  0.0  0.1  0.1  0.1  0.2
200. *  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.1  0.0  0.0  0.0  0.1  0.1  0.2  0.2
210. *  0.0  0.0  0.0  0.1  0.1  0.1  0.1  0.0  0.0  0.0  0.0  0.1  0.1  0.1  0.1
220. *  0.0  0.0  0.0  0.1  0.1  0.1  0.1  0.0  0.0  0.0  0.0  0.0  0.1  0.1  0.1
230. *  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
240. *  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
250. *  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
260. *  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
270. *  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
280. *  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
290. *  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
300. *  0.1  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  0.0
310. *  0.1  0.1  0.1  0.2  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.0  0.0  0.0  0.1
320. *  0.2  0.1  0.1  0.2  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.0  0.0  0.0  0.1
330. *  0.2  0.2  0.1  0.2  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.0  0.0  0.0  0.1
340. *  0.1  0.1  0.1  0.2  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.0  0.0  0.0  0.1
350. *  0.1  0.1  0.1  0.2  0.1  0.1  0.1  0.1  0.1  0.1  0.1  0.0  0.0  0.0  0.1
------*-------------------------------------------------------------------------------
MAX   *  0.2  0.2  0.2  0.2  0.2  0.1  0.2  0.2  0.2  0.1  0.1  0.2  0.1  0.2  0.2
DEGR. * 110  100  100    0   10    0   10  110  120   80   80   40   20   90  100

THE HIGHEST CONCENTRATION OF    0.30 PPM OCCURRED AT RECEPTOR REC52.
```


JOB: 15 WASHINGTON RUN: NO BUILD

DATE : 06/18/ 0
TIME : 15:28:47

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

* CO/LINK (PPM)
* ANGLE (DEGREES)

```
      *  REC1  REC2  REC3  REC4  REC5  REC6  REC7  REC8  REC9  REC10 REC11 REC12 REC13 REC14
REC15 REC16 REC17 REC18 REC19 REC20
  LINK # *   240   290   130   130    30    20    20   200    50    60   290   300   130     0     0     0    20    30     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   0.1   0.1   0.1   0.1   0.1   0.0   0.0   0.0
    2 *  0.1   0.0   0.0   0.0   0.2   0.2   0.2   0.1   0.2   0.2   0.0   0.0   0.1   0.0   0.0   0.1   0.1   0.1   0.0   0.0
    3 *  0.1   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   0.1   0.1   0.1
    4 *  0.0   0.1   0.0   0.0   0.0   0.0   0.0   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
    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   0.0   0.0   0.0   0.0   0.0   0.0   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	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8 *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9 *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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
11 *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12 *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13 *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15 *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16 *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19 *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

* CO/LINK (PPM)
* ANGLE (DEGREES)

LINK # *	REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
*	40	50	60	40	60	310	310	140	140	0	0	0	200	10	10	130	140	140	150	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	0.0
2 *	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	0.0	0.0
3 *	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
4 *	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
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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6 *	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.0	0.0	0.0	0.1	0.0	0.0	0.2	0.2	0.2	0.2	0.0
7 *	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	0.0	0.0	0.0	0.0	0.0
8 *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9 *	0.0	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
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	0.1
11 *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12 *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13 *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15 *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16 *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19 *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

* CO/LINK (PPM)
* ANGLE (DEGREES)

	REC41	REC42	REC43	REC44	REC45	REC46	REC47	REC48	REC49	REC50	REC51	REC52	REC53	REC54	REC55	REC56	REC57	REC58	REC59	REC60
LINK # *	0	0	140	130	130	130	150	170	30	30	30	110	110	10	220	230	10	0	0	50
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	0.0
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	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0
5 *	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	0.0	0.0	0.0
6 *	0.0	0.0	0.2	0.0	0.0	0.1	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	0.1
7 *	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	0.0	0.0	0.0	0.0	0.0	0.0
8 *	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	0.1	0.2	0.2	0.2	0.1	0.1	0.0
9 *	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	0.0	0.0	0.0	0.0	0.0	0.0	0.1
10 *	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
11 *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12 *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13 *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15 *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16 *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19 *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

JOB: 15 WASHINGTON RUN: NO BUILD

DATE : 06/18/ 0
TIME : 15:28:47

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

* CO/LINK (PPM)
* ANGLE (DEGREES)

	REC61	REC62	REC63	REC64	REC65	REC66	REC67	REC68	REC69	REC70	REC71	REC72	REC73	REC74	REC75
LINK # *	110	100	100	0	10	0	10	110	120	80	80	40	20	90	100
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
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	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	0.0	0.0	0.0	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
5 *	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	0.0
6 *	0.2	0.2	0.2	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1
7 *	0.0	0.0	0.0	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 *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.2	0.1	0.1	0.1

9	*	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
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
11	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	*	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

1 CAL3QHC - (DATED 95221)

CAL3QHC PC (32 BIT) VERSION 3.0.0
(C) COPYRIGHT 1993-2000, TRINITY CONSULTANTS

Run Began on 8/03/2018 at 15:26:11

JOB: 15 WASHINGTON RUN: BUILD

DATE : 08/03/ 0
TIME : 15:26:11

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. WASH_E@COREY_FF	*	323684.0	********	323791.4	********	*	140.	130.	AG	1025.	1.9	0.0	17.6		
2. COREY_N@WASH_FF	*	323684.0	********	323764.7	********	*	114.	45.	AG	867.	4.0	0.0	13.9		
3. COREY_S@WASH_FF	*	323684.0	********	323592.7	********	*	130.	225.	AG	724.	2.7	0.0	16.4		
4. WASH_W@COREY_FF	*	323684.0	********	323610.3	********	*	90.	305.	AG	1206.	2.4	0.0	17.6		
5. WASH_W@COMM_FF	*	323489.8	********	323347.2	********	*	178.	307.	AG	838.	1.8	0.0	17.6		
6. WASH_E@COMM_FF	*	323489.8	********	323610.3	********	*	157.	130.	AG	1154.	3.1	0.0	17.6		
7. COMMSB_APP@WASH_FF	*	323479.5	********	323575.5	********	*	193.	30.	AG	847.	1.7	0.0	17.6		
8. COMMSB_DEP@WASH_FF	*	323479.5	********	323424.4	********	*	107.	211.	AG	775.	3.8	0.0	13.3		
9. COMMNB_APP@WASH_FF	*	323498.7	********	323442.6	********	*	105.	212.	AG	555.	4.2	0.0	13.3		
10. COMMNB_DEP@WASH_FF	*	323496.8	********	323584.9	********	*	185.	28.	AG	628.	1.7	0.0	13.3		
11. WASHEB@COREY_Q	*	323674.2	********	323625.3	********	*	60.	305.	AG	8.	100.0	0.0	3.7	0.89	10.0
12. COREYSB@WASH_Q	*	323691.2	********	323934.3	********	*	345.	45.	AG	11.	100.0	0.0	3.4	1.24	57.6
13. WASHWB@COREY_Q	*	323694.2	********	323728.6	********	*	45.	130.	AG	8.	100.0	0.0	3.7	0.74	7.5
14. COREYNB@WASH_Q	*	323678.3	********	323654.4	********	*	34.	225.	AG	11.	100.0	0.0	3.7	0.76	5.6
15. WASHEB@COMM_Q	*	323457.3	********	323411.9	********	*	57.	307.	AG	9.	100.0	0.0	6.1		

0.39 9.4
16. WASHWB@COMM_Q * 323518.5 ******** 323557.9 ******** * 51. 129. AG 9. 100.0 0.0 5.5 0.69 8.5
17. COMMSBTHRU@WASH_Q * 323485.9 ******** 323527.0 ******** * 83. 30. AG 10. 100.0 0.0 7.3 0.60 13.9
18. COMMSBLT@WASH_Q * 323490.6 ******** 323504.6 ******** * 29. 29. AG 13. 100.0 0.0 3.7 0.76 4.8
19. COMMNB@WASH_Q * 323490.2 ******** 323456.5 ******** * 69. 209. AG 10. 100.0 0.0 7.3 0.51 11.6

JOB: 15 WASHINGTON RUN: BUILD

DATE : 08/03/ 0
TIME : 15:26:11

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. WASHEB@COREY_Q	*	100	51	2.0	644	1600	5.78	2	3
12. COREYSB@WASH_Q	*	100	73	2.0	456	1600	5.78	2	3
13. WASHWB@COREY_Q	*	100	51	2.0	531	1600	5.78	2	3
14. COREYNB@WASH_Q	*	100	73	2.0	278	1600	5.78	2	3
15. WASHEB@COMM_Q	*	120	66	2.0	515	3200	5.78	2	3
16. WASHWB@COMM_Q	*	120	66	2.0	461	1600	5.78	2	3
17. COMMSBTHRU@WASH_Q	*	120	74	2.0	675	3200	5.78	2	3
18. COMMSBLT@WASH_Q	*	120	99	2.0	172	1600	5.78	2	3
19. COMMNB@WASH_Q	*	120	75	2.0	555	3200	5.78	2	3

RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z
1. 1E1	*	323695.9	********	1.8
2. 1E2	*	323708.8	********	1.8
3. 1E3	*	323728.0	********	1.8
4. 1E4	*	323747.2	********	1.8
5. 1E5	*	323734.1	********	1.8
6. 1E6	*	323716.4	********	1.8
7. 1E7	*	323698.7	********	1.8
8. 1N1	*	323684.7	********	1.8
9. 1N2	*	323696.8	********	1.8
10. 1N3	*	323714.6	********	1.8
11. 1N4	*	323635.8	********	1.8
12. 1N5	*	323656.2	********	1.8
13. 1N6	*	323676.6	********	1.8
14. 1S1	*	323728.2	********	1.8
15. 1S2	*	323709.0	********	1.8
16. 1S3	*	323689.8	********	1.8
17. 1S4	*	323684.1	********	1.8

18. 1S5	*	323672.3	********	1.8 *
19. 1S6	*	323654.8	********	1.8 *
20. 1S7	*	323637.2	********	1.8 *
21. 1W1	*	323622.0	********	1.8 *
22. 1W2	*	323639.5	********	1.8 *
23. 1W3	*	323657.1	********	1.8 *
24. 1W4	*	323670.7	********	1.8 *
25. 1W5	*	323658.5	********	1.8 *
26. 1W6	*	323638.1	********	1.8 *
27. 1W7	*	323617.8	********	1.8 *
28. 2N1	*	323491.1	********	1.8 *
29. 2N2	*	323495.9	********	1.8 *
30. 2N3	*	323521.0	********	1.8 *
31. 2N4	*	323508.6	********	1.8 *
32. 2N5	*	323496.1	********	1.8 *
33. 2N6	*	323502.9	********	1.8 *
34. 2N7	*	323514.8	********	1.8 *
35. 2N8	*	323526.6	********	1.8 *
36. 2NE1	*	323514.6	********	1.8 *

DATE : 08/03/ 0
TIME : 15:26:11

RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z	*
37. 2NE2	*	323533.9	********	1.8	*
38. 2NE3	*	323553.2	********	1.8	*
39. 2NE4	*	323572.4	********	1.8	*
40. 2NE5	*	323543.2	********	1.8	*
41. 2NE6	*	323531.3	********	1.8	*
42. 2NE7	*	323519.4	********	1.8	*
43. 2NE8	*	323506.5	********	1.8	*
44. 2NW1	*	323412.4	********	1.8	*
45. 2NW2	*	323432.4	********	1.8	*
46. 2NW3	*	323452.4	********	1.8	*
47. 2NW4	*	323472.4	********	1.8	*
48. 2NW5	*	323476.8	********	1.8	*
49. 2NW6	*	323484.3	********	1.8	*
50. 2NW7	*	323496.7	********	1.8	*
51. 2NW8	*	323509.1	********	1.8	*
52. 2S1	*	323484.5	********	1.8	*
53. 2S2	*	323488.5	********	1.8	*
54. 2S3	*	323480.4	********	1.8	*
55. 2S4	*	323472.3	********	1.8	*
56. 2S5	*	323459.4	********	1.8	*
57. 2S6	*	323446.5	********	1.8	*
58. 2S7	*	323450.3	********	1.8	*
59. 2S8	*	323463.7	********	1.8	*

60. 2S9	*	323477.1	********	1.8 *
61. 2SE1	*	323546.9	********	1.8 *
62. 2SE2	*	323527.7	********	1.8 *
63. 2SE3	*	323508.4	********	1.8 *
64. 2SE4	*	323499.0	********	1.8 *
65. 2SE5	*	323490.9	********	1.8 *
66. 2SE6	*	323477.6	********	1.8 *
67. 2SE7	*	323464.2	********	1.8 *
68. 2SW1	*	323464.5	********	1.8 *
69. 2SW2	*	323444.5	********	1.8 *
70. 2SW3	*	323424.5	********	1.8 *
71. 2SW4	*	323404.6	********	1.8 *
72. 2SW5	*	323431.6	********	1.8 *
73. 2SW6	*	323444.5	********	1.8 *
74. 2SW7	*	323457.4	********	1.8 *
75. 2SW8	*	323469.3	********	1.8 *

JOB: 15 WASHINGTON 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) 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	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.1	0.1
10.	*	0.1	0.1	0.0	0.0	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.1	0.1
20.	*	0.2	0.1	0.0	0.0	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.1	0.1	0.1
30.	*	0.2	0.0	0.0	0.0	0.2	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.1	0.1
40.	*	0.2	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.1	0.2	0.1
50.	*	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.1	0.0	0.0
60.	*	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2	0.2	0.3	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0
70.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0
80.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0
90.	*	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	0.1	0.0	0.0	0.0
100.	*	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	0.1	0.0	0.0	0.0
110.	*	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	0.1	0.0	0.0	0.0
120.	*	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	0.0	0.0	0.0
130.	*	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0
140.	*	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.2	0.1	0.1	0.1	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
150.	*	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160.	*	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170.	*	0.1	0.1	0.1	0.1	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
180.	*	0.1	0.1	0.1	0.1	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
190.	*	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0

200. *	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.3	0.1	0.2	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
210. *	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.3	0.1	0.2	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
220. *	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.2	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.0
230. *	0.2	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1
240. *	0.3	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1
250. *	0.2	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1
260. *	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1
270. *	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1
280. *	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1
290. *	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.0	0.0	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1
300. *	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.0	0.0	0.2	0.2	0.1	0.0	0.0	0.0	0.2	0.1	0.1	0.1
310. *	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.2	0.1	0.1	0.0	0.1	0.2	0.1	0.1	0.1
320. *	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	0.1	0.1	0.1	0.2	0.1	0.1	0.1
330. *	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	0.1	0.1	0.1	0.2	0.2	0.1	0.1
340. *	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	0.1	0.1	0.0	0.2	0.2	0.1	0.1
350. *	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	0.1	0.1	0.2	0.1	0.2	0.1	0.1
------*																					
MAX *	0.3	0.2	0.1	0.1	0.2	0.2	0.2	0.3	0.2	0.3	0.2	0.2	0.3	0.1	0.1	0.2	0.2	0.2	0.2	0.1
DEGR. *	240	290	130	130	20	10	20	200	50	50	290	300	140	0	0	0	20	30	40	0

JOB: 15 WASHINGTON 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 * 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	0.1	0.1	0.1	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	0.1
10. *	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	0.0	0.0	0.0	0.0	0.1
20. *	0.0	0.0	0.0	0.1	0.1	0.1	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	0.1
30. *	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	0.0	0.0	0.0	0.0	0.0
40. *	0.1	0.0	0.1	0.2	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
50. *	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
60. *	0.1	0.1	0.2	0.2	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	0.0	0.0	0.0
70. *	0.1	0.1	0.1	0.2	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	0.0	0.0	0.0
80. *	0.1	0.1	0.1	0.2	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	0.0	0.0	0.0
90. *	0.1	0.1	0.1	0.2	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	0.0	0.0	0.0
100. *	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
110. *	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
120. *	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	0.1	0.1	0.1	0.1	0.0
130. *	0.1	0.1	0.1	0.2	0.0	0.1	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.1	0.1	0.0
140. *	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.2	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.2	0.2	0.2	0.1	0.0
150. *	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.2	0.2	0.2	0.2	0.0

160. *	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.2	0.2	0.2	0.1	0.0
170. *	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.0
180. *	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.2	0.2	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0
190. *	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.2	0.2	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0
200. *	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.2	0.0	0.1	0.1	0.1	0.1	0.1	0.0
210. *	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0
220. *	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1
230. *	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.2	0.1	0.1	0.1	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	0.0	0.0	0.0	0.0	0.2	0.1	0.1	0.1	0.0
250. *	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	0.2	0.1	0.1	0.1	0.0
260. *	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	0.1	0.1	0.1	0.1	0.0
270. *	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	0.1	0.1	0.1	0.1	0.0
280. *	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	0.1	0.1	0.2	0.2	0.0
290. *	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	0.1	0.2	0.2	0.2	0.0
300. *	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	0.1	0.2	0.2	0.0
310. *	0.0	0.0	0.0	0.1	0.2	0.2	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	0.0
320. *	0.0	0.0	0.0	0.1	0.1	0.2	0.2	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
330. *	0.0	0.0	0.0	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
340. *	0.0	0.0	0.0	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
350. *	0.0	0.0	0.0	0.1	0.1	0.1	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	0.0
------*																					
MAX *	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.1
DEGR. *	40	50	50	40	60	310	320	140	130	0	0	0	200	10	10	130	140	140	150	0

JOB: 15 WASHINGTON 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 * 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	0.0	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	0.1	0.0
10. *	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	0.2	0.1	0.1	0.2	0.1	0.1	0.0
20. *	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	0.2	0.1	0.1	0.2	0.1	0.0	0.0
30. *	0.0	0.0	0.1	0.0	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	0.1	0.1	0.1
40. *	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	0.1	0.1	0.1	0.1	0.1
50. *	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	0.1	0.1	0.2
60. *	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	0.1	0.0	0.1	0.1	0.1	0.2
70. *	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	0.1	0.1	0.1	0.2
80. *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2
90. *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2
100. *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.1	0.1	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	0.0	0.0	0.0	0.3	0.3	0.2	0.1	0.0	0.1	0.1	0.1	0.2

120. *	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.3	0.3	0.2	0.1	0.0	0.0	0.1	0.1	0.1
130. *	0.0	0.0	0.1	0.1	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.3	0.2	0.1	0.0	0.0	0.0	0.1	0.1	0.1
140. *	0.0	0.0	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.0	0.0	0.2	0.2	0.1	0.0	0.0	0.0	0.1	0.1	0.1
150. *	0.0	0.0	0.2	0.1	0.1	0.1	0.2	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1
160. *	0.0	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
170. *	0.0	0.1	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	0.1	0.1
180. *	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	0.0	0.1	0.1	0.1
190. *	0.0	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	0.0	0.0	0.1	0.1	0.1
200. *	0.0	0.0	0.2	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	0.0	0.1	0.1	0.1
210. *	0.0	0.0	0.2	0.0	0.0	0.0	0.0	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
220. *	0.1	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.1	0.1	0.0	0.1	0.1
230. *	0.1	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.1	0.0	0.0	0.1
240. *	0.0	0.0	0.3	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	0.1	0.1
250. *	0.0	0.0	0.2	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	0.1	0.1	0.1	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
270. *	0.0	0.0	0.1	0.1	0.1	0.1	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
280. *	0.0	0.0	0.1	0.1	0.1	0.1	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
290. *	0.0	0.0	0.2	0.1	0.1	0.1	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
300. *	0.0	0.0	0.2	0.1	0.1	0.1	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
310. *	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.2	0.2	0.2	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	0.2	0.2	0.2	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	0.2	0.1	0.2	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	0.1	0.0	0.2	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	0.1	0.0	0.2	0.1	0.1	0.1	0.1	0.1	0.1
MAX *	0.1	0.1	0.3	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.2
DEGR. *	0	0	240	130	130	130	150	170	30	30	30	110	100	0	220	230	10	0	0	50

JOB: 15 WASHINGTON 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
0. *	0.1	0.1	0.1	0.2	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	0.2	0.2	0.1	0.2	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	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0
30. *	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
40. *	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.2	0.1	0.1	0.1
50. *	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.2	0.1	0.1	0.1
60. *	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	0.1
70. *	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	0.1

80. *	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	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	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1
100. *	0.2	0.2	0.2	0.2	0.1	0.0	0.0	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2
110. *	0.2	0.2	0.2	0.2	0.1	0.0	0.0	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2
120. *	0.2	0.2	0.2	0.2	0.1	0.0	0.0	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2
130. *	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.2	0.1	0.0	0.0	0.1	0.1	0.1	0.2
140. *	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	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	0.1	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	0.1	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	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1
180. *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1
190. *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.2	0.2
200. *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.2	0.2
210. *	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
220. *	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
230. *	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
240. *	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
250. *	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
260. *	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
270. *	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
280. *	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
290. *	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
300. *	0.1	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	0.0
310. *	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1
320. *	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1
330. *	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1
340. *	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1
350. *	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1
------*															
MAX *	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.2	0.2
DEGR. *	100	100	100	0	10	0	10	100	120	0	0	40	20	90	100

THE HIGHEST CONCENTRATION OF 0.30 PPM OCCURRED AT RECEPTOR REC10.

Background Concentrations

Carbon Monoxide (CO) Background Concentrations

Year	1-Hour* (ppm)	8-Hour** (ppm)
2014	1.3	0.9
2015	0.3	0.3
2016	2.4	1.2

*** 1-Hour values represent 2nd highest**

**** 8-Hour values represent 2nd highest**

1- Hour Background Calculation

Kenmore Sq (2014, 2015) and Harrison Ave (2016), Boston MA

Pollutant	1-Hour* (ppm)	Molecular weight	Background Concentration (Micrograms/meter3)
Carbon Monoxide	2.4	28.0	2805.8

* Highest value of 2014, 2015 and 2016

8-Hour Background Calculation

Kenmore Sq (2014, 2015) and Harrison Ave (2016), Boston MA

Pollutant	8-Hour* (ppm)	Molecular weight	Background Concentration (Micrograms/meter3)
Carbon Monoxide	1.2	28.0	1397.7

* Highest value of 2014, 2015 and 2016