



Common Allbright

525 Lincoln Street, Boston (Allston), MA

Expanded Project Notification Form

July 11, 2019

Submitted to: Boston Planning and Development Agency

Submitted by: AUBP LLC

Prepared by: Bohler Engineering

In Association With:

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TABLE OF CONTENTS

| | | |
|-------|---|------|
| 1.0 | PROJECT SUMMARY | 1-1 |
| 1.1 | Project Identification | 1-1 |
| 1.2 | Project Team | 1-1 |
| 1.3 | Site | 1-3 |
| 1.4 | Development Summary | 1-7 |
| 1.5 | Community Process | 1-11 |
| 1.6 | Community and Public Benefits..... | 1-12 |
| 1.6.1 | New Market Rate and Income-Restricted Housing Units | 1-12 |
| 1.6.2 | Revitalization of the Lincoln Street Green Strip..... | 1-13 |
| 1.6.3 | Job Creation | 1-16 |
| 1.6.4 | Improved Pedestrian Experience | 1-16 |
| 1.6.5 | New Flexible Community Space..... | 1-16 |
| 1.6.6 | LEED Certifiable Building..... | 1-17 |
| 1.7 | Summary of Required Permits and Approvals..... | 1-17 |
| 2.0 | PROJECT DESCRIPTION..... | 2-1 |
| 2.1 | Site and Surroundings..... | 2-1 |
| 2.2 | Proposed Project..... | 2-1 |
| 2.2.1 | Ground Floor Uses | 2-11 |
| 2.2.2 | Residential Units | 2-11 |
| 2.2.3 | Parking and Access..... | 2-12 |
| 2.2.4 | Landscaping..... | 2-13 |
| 2.3 | Co-Living..... | 2-13 |
| 2.3.1 | Benefits of Co-Living | 2-13 |
| 2.3.2 | Common Background..... | 2-14 |
| 2.3.3 | Co-Living in Boston..... | 2-16 |
| 2.3.4 | Management and Operations..... | 2-16 |
| 2.4 | Compliance with Boston Zoning | 2-18 |
| 2.5 | Alternatives Analysis | 2-19 |
| 2.5.1 | No Build Alternative | 2-19 |

| | | |
|---------|--|------|
| 2.5.1.1 | Impact Summary | 2-20 |
| 2.5.2 | As-of-Right Alternative..... | 2-20 |
| 2.5.2.1 | Impact Summary | 2-21 |
| 2.5.3 | Preferred Project Alternative..... | 2-21 |
| 2.5.3.1 | Impact Summary | 2-25 |
| 2.5.4 | Alternatives Analysis Conclusion | 2-26 |
| 3.0 | URBAN DESIGN | 3-1 |
| 3.1 | Introduction | 3-1 |
| 3.2 | Massing | 3-4 |
| 3.3 | Character and Materials | 3-9 |
| 3.4 | Landscape and Streetscape | 3-15 |
| 3.5 | Consistency with Area Plans | 3-17 |
| 4.0 | SUSTAINABLE DESIGN | 4-1 |
| 4.1 | Sustainable Design Background | 4-1 |
| 4.1.1 | Compliance with Article 37 | 4-1 |
| 4.2 | LEED Overview | 4-1 |
| 4.2.1 | Integrative Process..... | 4-1 |
| 4.2.2 | Location and Transportation..... | 4-2 |
| 4.2.3 | Sustainable Sites | 4-3 |
| 4.2.4 | Water Efficiency | 4-5 |
| 4.2.5 | Energy and Atmosphere | 4-5 |
| 4.2.6 | Materials and Resources..... | 4-7 |
| 4.2.7 | Indoor Environmental Quality..... | 4-8 |
| 4.2.8 | Innovation | 4-10 |
| 4.2.9 | Regional Priority..... | 4-11 |
| 4.2.10 | Climate Change Preparedness and Resiliency | 4-11 |
| 4.2.11 | Addressing Anticipated Sea Level Rise and Flooding | 4-11 |
| 4.2.12 | Addressing Extreme Weather and Heat Events..... | 4-11 |
| 5.0 | ENVIRONMENTAL PROTECTION..... | 5-1 |
| 5.1 | Introduction | 5-1 |
| 5.2 | Wind..... | 5-1 |
| 5.2.1 | Introduction | 5-1 |

| | | |
|---------|---|------|
| 5.2.2 | Project Layout | 5-1 |
| 5.2.3 | Meteorological Wind Conditions | 5-2 |
| 5.2.4 | BPDA Wind Criteria | 5-2 |
| 5.2.5 | Potential Wind Conditions | 5-3 |
| 5.2.6 | Conclusions | 5-4 |
| 5.3 | Shadow..... | 5-5 |
| 5.4 | Daylight Analysis | 5-14 |
| 5.4.1 | Summary | 5-14 |
| 5.4.2 | Analysis | 5-14 |
| 5.4.3 | Existing Condition | 5-15 |
| 5.4.4 | Proposed Condition | 5-15 |
| 5.4.5 | Conclusion..... | 5-15 |
| 5.5 | Solar Glare..... | 5-22 |
| 5.6 | Air Quality | 5-22 |
| 5.6.1 | Introduction | 5-22 |
| 5.6.2 | Background Concentrations..... | 5-22 |
| 5.6.3 | Air Quality Modeling Methodology and Results..... | 5-23 |
| 5.6.3.1 | Impacts from Parking Garage..... | 5-24 |
| 5.6.3.2 | Parking Garage Air Quality Results | 5-26 |
| 5.6.3.3 | Microscale CO Analysis for Selected Intersections | 5-28 |
| 5.7 | Noise | 5-29 |
| 5.7.1 | Introduction | 5-29 |
| 5.7.2 | Noise Terminology | 5-29 |
| 5.7.3 | Noise Regulations and Criteria..... | 5-30 |
| 5.7.4 | Existing Conditions..... | 5-32 |
| 5.7.4.1 | Baseline Noise Environment | 5-32 |
| 5.7.4.2 | Noise Measurement Methodology..... | 5-32 |
| 5.7.4.3 | Measurement Equipment..... | 5-34 |
| 5.7.4.4 | Baseline Ambient Noise Levels | 5-35 |
| 5.7.5 | Overview of Potential Project Noise Sources | 5-36 |
| 5.7.6 | Modeling Methodology | 5-37 |
| 5.7.7 | Future Sound Level of Project..... | 5-38 |

| | | |
|----------|---|------|
| 5.7.7.1 | City of Boston Noise Standards..... | 5-38 |
| 5.7.7.2 | MassDEP Noise Regulations..... | 5-38 |
| 5.7.7.3 | HUD Site Acceptability Standards | 5-39 |
| 5.7.8 | Conclusions | 5-39 |
| 5.8 | Flood Zones..... | 5-46 |
| 5.9 | Water Quality..... | 5-48 |
| 5.10 | Geotechnical | 5-48 |
| 5.10.1 | Site and Subsurface Conditions | 5-48 |
| 5.10.2 | Groundwater Conditions..... | 5-49 |
| 5.10.3 | Groundwater Control..... | 5-49 |
| 5.10.4 | Excavation and Foundation Construction..... | 5-49 |
| 5.10.5 | Proposed Foundation Construction..... | 5-49 |
| 5.10.6 | Probable Project Impacts and Mitigation Measures | 5-49 |
| 5.11 | Solid and Hazardous Waste | 5-50 |
| 5.11.1 | Previous Due Diligence | 5-50 |
| 5.11.2 | Proposed Excavation..... | 5-51 |
| 5.11.3 | Anticipated Off-Site Soil Disposal..... | 5-51 |
| 5.11.4 | Groundwater Impacts | 5-51 |
| 5.12 | Construction Impacts/Construction Management Plan | 5-52 |
| 5.12.1 | Construction Management Plan | 5-52 |
| 5.12.2 | Construction Methodology | 5-52 |
| 5.12.2.1 | Construction Activity Schedule | 5-52 |
| 5.12.2.2 | Construction Staging Area..... | 5-52 |
| 5.12.2.3 | Perimeter Protection/Public Safety | 5-53 |
| 5.12.3 | Construction Traffic Impacts..... | 5-53 |
| 5.12.3.1 | Construction Trip Generation and Worker Parking | 5-53 |
| 5.12.3.2 | Truck Routes and Volumes..... | 5-53 |
| 5.12.4 | Construction Air Quality..... | 5-54 |
| 5.12.4.1 | Dust Control | 5-54 |
| 5.12.5 | Construction Noise..... | 5-54 |
| 5.12.6 | Rodent Control..... | 5-54 |
| 5.13 | Wildlife Habitats..... | 5-55 |

| | | |
|--------|---|------|
| 5.14 | Historic and Archaeological Impacts..... | 5-55 |
| 5.14.1 | Historic Resources Within the Site..... | 5-55 |
| 5.14.2 | Historic Resources Within Vicinity of the Site..... | 5-55 |
| 5.14.3 | Archeological Resources on the Site..... | 5-55 |
| 5.14.4 | Massachusetts Historical Commission (MHC) Review..... | 5-55 |
| 5.14.5 | Article 85 – Demolition Delay | 5-55 |
| 5.15 | Tidelands..... | 5-55 |
| 6.0 | TRANSPORTATION | 6-1 |
| 6.1 | Introduction | 6-1 |
| 6.2 | Project Overview..... | 6-1 |
| 6.3 | Study Area..... | 6-2 |
| 6.4 | Existing Conditions..... | 6-4 |
| 6.4.1 | Data Collection..... | 6-4 |
| 6.4.2 | Roadway Inventory | 6-4 |
| 6.4.3 | Intersections | 6-4 |
| 6.4.4 | Pedestrians..... | 6-6 |
| 6.4.5 | Bicycles..... | 6-7 |
| 6.4.6 | Public Transportation..... | 6-10 |
| 6.4.7 | Car & Bicycle Share | 6-10 |
| 6.4.8 | Public Parking..... | 6-10 |
| 6.5 | 2024 No Build Condition | 6-14 |
| 6.6 | 2024 Build Condition..... | 6-14 |
| 6.6.1 | Site Access and Circulation | 6-14 |
| 6.6.2 | Trip Generation and Trip Distribution..... | 6-17 |
| 6.6.3 | Parking & Bicycle Storage | 6-18 |
| 6.6.4 | Curbside Operations & Loading | 6-21 |
| 6.7 | Intersection Operational Analysis..... | 6-21 |
| 6.8 | Mitigation..... | 6-25 |
| 6.8.1 | Transportation Demand Management | 6-25 |
| 6.8.2 | Pedestrian Realm Improvements..... | 6-26 |
| 6.8.3 | Construction Management Plan | 6-26 |
| 7.0 | INFRASTRUCTURE SYSTEMS..... | 7-1 |

| | | |
|-------|---|------|
| 7.1 | Overview of Utility Services | 7-1 |
| 7.2 | Water System..... | 7-1 |
| 7.2.1 | Existing Water Service..... | 7-1 |
| 7.2.2 | Estimated Proposed Water Demand | 7-1 |
| 7.2.3 | Proposed Water Service..... | 7-2 |
| 7.2.4 | Water Supply Conservation and Mitigation..... | 7-5 |
| 7.3 | Sanitary Sewer System..... | 7-5 |
| 7.3.1 | Existing Sanitary Sewer System..... | 7-5 |
| 7.3.2 | Estimated Proposed Sanitary Flow | 7-5 |
| 7.3.3 | Proposed Sanitary Sewer Connections | 7-6 |
| 7.3.4 | Sewer System Mitigation | 7-9 |
| 7.4 | Storm Drainage System..... | 7-9 |
| 7.4.1 | Existing Storm Drainage System | 7-9 |
| 7.4.2 | Proposed Storm Drainage System | 7-9 |
| 7.5 | Electrical Services..... | 7-12 |
| 7.6 | Telecommunication Services | 7-12 |
| 7.7 | Natural Gas System | 7-12 |
| 7.8 | Utility Protection During Construction | 7-12 |

APPENDIX 1: ACCESSIBILITY CHECKLIST

APPENDIX 2: CLIMATE CHANGE RESILIENCY CHECKLIST

APPENDIX 3: BROADBAND QUESTIONNAIRE

APPENDIX 4: LEED DATA

APPENDIX 5: ENVIRONMENTAL STUDIES DATA

APPENDIX 6: TRAFFIC DATA

LIST OF FIGURES

| | |
|---|------|
| Figure 1-1 Aerial Locus Map..... | 1-3 |
| Figure 1-2 Existing Conditions Photographs | 1-4 |
| Figure 1-3 Existing Conditions Photographs | 1-5 |
| Figure 1-4 Existing Conditions Photographs | 1-6 |
| Figure 1-5 Colored Site Plan..... | 1-9 |
| Figure 1-6 Ground Floor Plan..... | 1-10 |
| Figure 1-7 Lincoln Street Green Strip Existing Conditions | 1-14 |
| Figure 1-8 Lincoln Street Green Strip Existing Conditions | 1-15 |
| Figure 2-1 Existing Conditions Survey..... | 2-3 |
| Figure 2-2 Annotated Site Plan | 2-4 |
| Figure 2-3 Ground Floor Plan..... | 2-5 |
| Figure 2-4 Second Floor Plan | 2-6 |
| Figure 2-5 Third through Fifth Floor Plan..... | 2-7 |
| Figure 2-6 Sixth Floor Plan | 2-8 |
| Figure 2-7 Roof Plan..... | 2-9 |
| Figure 2-8 525 Lincoln Rendering 1 | 2-10 |
| Figure 2-9 525 Lincoln Rendering 2 | 2-10 |
| Figure 2-10 Typical Four-Bedroom, 3-Bathroom Layout | 2-12 |
| Figure 2-11 Common Market Overview | 2-15 |
| Figure 2-12 No Build Alternative..... | 2-23 |
| Figure 2-13 Preferred Alternative (Ground Floor Plan) | 2-24 |
| Figure 3-1 Context Plan..... | 3-2 |
| Figure 3-2 Existing Site Conditions..... | 3-3 |
| Figure 3-3 Future Site Conditions | 3-3 |
| Figure 3-4 Existing Conditions Diagram | 3-5 |
| Figure 3-5 Proposed Concept Diagram | 3-6 |
| Figure 3-6 Proposed Site Plan Concept 1 | 3-7 |
| Figure 3-7 Proposed Site Plan Concept 2..... | 3-8 |
| Figure 3-8 Material Diagram 1 | 3-9 |

| | |
|--|------|
| Figure 3-9 Material Diagram 2 | 3-10 |
| Figure 3-10 Northwest Elevation | 3-11 |
| Figure 3-11 Southeast Elevation | 3-11 |
| Figure 3-12 Northeast Elevation | 3-12 |
| Figure 3-13 Southwest Elevation 1 | 3-13 |
| Figure 3-14 Southwest Elevation 2 | 3-14 |
| Figure 3-15 Conceptual Landscape Plan | 3-16 |
| Figure 3-16 North Allston-Brighton Community-Wide Plan Overall Development Framework | 3-18 |
| Figure 5-1 Shadow Studies – Proposed Context (March Morning) | 5-6 |
| Figure 5-2 Shadow Studies – Proposed Context (March Afternoon)..... | 5-7 |
| Figure 5-3 Shadow Studies - Proposed Context (June Morning) | 5-8 |
| Figure 5-4 Shadow Studies - Proposed Context (June Afternoon) | 5-9 |
| Figure 5-5 Shadow Studies – Proposed Context (September Morning) | 5-10 |
| Figure 5-6 Shadow Studies– Proposed Context (September Afternoon) | 5-11 |
| Figure 5-7 Proposed Context (December Morning) | 5-12 |
| Figure 5-8 Proposed Context (December Afternoon)..... | 5-13 |
| Figure 5-9 Existing BRADA Views | 5-16 |
| Figure 5-10 Existing Conditions View 1 and View 2 | 5-17 |
| Figure 5-11 Existing Conditions View 3 and View 4 | 5-18 |
| Figure 5-12 Proposed BRADA Views | 5-19 |
| Figure 5-13 Proposed Conditions View 1 and View 2 | 5-20 |
| Figure 5-14 Proposed Conditions View 3 and View 4 | 5-21 |
| Figure 5-15 Site FEMA Flood Insurance Rate Map (Map No. 25025C0057G)..... | 5-47 |
| Figure 6-1 Study Area..... | 6-3 |
| Figure 6-2 Existing Conditions - Vehicles | 6-5 |
| Figure 6-3 Existing Conditions - Pedestrians..... | 6-8 |
| Figure 6-4 Existing Conditions - Bicycles | 6-9 |
| Figure 6-5 Public Transportation | 6-11 |
| Figure 6-6 Existing Zipcar & Blue Bike Locations | 6-12 |
| Figure 6-7 On-Street Parking..... | 6-13 |
| Figure 6-8 2024 No-Built Conditions - Vehicles | 6-15 |
| Figure 6-9 Annotated Site Plan | 6-16 |

| | |
|--|------|
| Figure 6-10 Project Generated Trips..... | 6-19 |
| Figure 6-11 2024 Build Volumes - Vehicles..... | 6-20 |
| Figure 6-12 Build Queue Summary AM Peak Hour..... | 6-22 |
| Figure 6-13 Build Queue Summary PM Peak Hour | 6-23 |
| Figure 7-1 Existing Water Map..... | 7-3 |
| Figure 7-2 Proposed Water Map..... | 7-4 |
| Figure 7-3 Existing Sewer and Drain Map | 7-7 |
| Figure 7-4 Proposed Sewer Map..... | 7-8 |
| Figure 7-5 Proposed Drain Map..... | 7-11 |

LIST OF TABLES

| | |
|--|------|
| Table 1-1 Proposed Development Program Summary | 1-8 |
| Table 1-2 Value to Tenants | 1-13 |
| Table 1-3 Anticipated Permits and Approvals | 1-18 |
| Table 2-1 Overall Project Program..... | 2-11 |
| Table 2-2 Project Program | 2-12 |
| Table 2-3 Project vs. Zoning Requirements Comparison Table | 2-19 |
| Table 5-1 BPDA Wind Comfort Criteria..... | 5-3 |
| Table 5-2 Shadow Study and Times | 5-5 |
| Table 5-3 Massachusetts and National Ambient Air Quality Standards (NAAQS) | 5-23 |
| Table 5-4 Representative Existing Air Quality in the Project Area..... | 5-24 |
| Table 5-5 Peak Hour Garage Traffic Volumes | 5-25 |
| Table 5-6 Parking Garage Air Quality Impacts | 5-28 |
| Table 5-7 Summary of Level of Service | 5-29 |
| Table 5-8 Subjective Effects of Changes in Sound Pressure Levels | 5-29 |
| Table 5-9 Common Indoor and Outdoor Sound Levels | 5-33 |
| Table 5-10 City of Boston on Maximum Allowable Sound Pressure Levels (db) | 5-34 |
| Table 5-11 Nighttime Baseline Sound Level Measurements – April 27-28, 2017..... | 5-36 |
| Table 5-12 11 Royal Street (Location R1) Estimated Future Level Impacts at Anytime | 5-40 |
| Table 5-13 21 Royal Street (Location R2) Estimated Future Level Impacts at Anytime | 5-41 |
| Table 5-14 15-17 Hooker Street (Location R3) Estimated Future Level Impacts at Anytime | 5-42 |
| Table 5-15 27-29 Hooker Street (Location R4) Estimated Future Level Impacts at Anytime | 5-43 |
| Table 5-16 50 Empire Street (Location R5) Estimated Future Level Impacts at Anytime..... | 5-44 |
| Table 5-17 225 Cambridge Street (Location R6) Estimated Future Level Impacts at Anytime..... | 5-45 |
| Table 6-1 Development Program Summary | 6-1 |
| Table 6-2 MBTA Transit Services..... | 6-10 |
| Table 6-3 Residential Mode Share | 6-17 |
| Table 6-4 Adjusted Trip Generation..... | 6-17 |
| Table 6-5 Cambridge St at Lincoln St: Average Queue Length Comparison (Vehicles) | 6-24 |
| Table 7-1 Sewer Generation | 7-6 |

1.0 PROJECT SUMMARY

1.1 Project Identification

Project Name: Common Allbright

Address/Location: 525 Lincoln Street
Boston (Allston), MA 02134

Assessor's Parcel #: 2201631000

AUBP, 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 ("Code") for the development of a new co-living residential project ("Project") located at 525 Lincoln Street (Parcel ID: 2201631000) in the Allston/Brighton Neighborhood District. 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.

1.2 Project Team

Proponent: AUBP LLC
120 Saint James Avenue, 6th Floor
Boston, MA 02116
Andrew Copelotti
Benjamin Moll

Proponent Description: The Project will be developed by AUBP LCC, a Massachusetts Limited Liability Corporation that is a joint venture between Arx Urban and Boylston Properties. This entity's EIN number is 82-5471907 and its Managers are Benjamin Moll, with an address of 120 Saint James Avenue, Suite 6053, c/o Arx Urban, Boston, MA 02116 and Andrew Copelotti, with an address of 800 Boylston Street, Suite 1390, c/o Boylston Properties, Boston, MA 02199. The Project will be wholly owned by 500-510 Lincoln Street Realty LLC, or an affiliated entity, controlled by Brian Lash and family with an address of 500 Lincoln Street, c/o LM Asset Management, Boston, MA 02135.

| | |
|--|--|
| Architect: | HDS Architecture 625 Mt Auburn St Cambridge, MA 02138 (617) 714-5870 Hans Strauch, AIA |
| Legal: | Smith Duggan Buell & Rufo LLP 101 Federal St #1405 Boston, MA 02110 (617) 228-4400 Paul Rufo |
| Civil Engineering & Permitting Consultant: | Bohler Engineering 45 Franklin Street, 5 th Floor Boston, MA 02110 617-849-8040 Stephen Martorano, PE Daniel Bourque, PE |
| Transportation Consultants: | CHA Consulting, Inc. 141 Longwater Dr #104 Norwell, MA 02061 (781) 982-5400 Ellen Donohoe-Moshier, PE, ENV SP |
| Geotechnical Consultant: | McPhail Associates, LLC. 2269 Massachusetts Ave Cambridge, MA 02140 (617) 868-1420 Jason S. Huestis |
| Mechanical, Electrical and Plumbing Systems and Fire Protection: | BLW Engineers 311 Great Road Littleton, MA 01460 Kenneth R. Beck, P.E., LEED AP, MCPPO |
| Landscape Architects: | Bohler Engineering 45 Franklin Street, 5th Floor Boston, MA 02110 617-849-8040 Matthew Mrva, RLA Jay Emperor, RLA |
| Acoustical, Air Quality & Wind Consultants: | Tech Environmental 303 Wyman Street 295 Waltham, MA 02451 781-890-2220 Mark C. Wallace, QEP, INCE |

LEED Consultants: Resilient Buildings Group
6 Dixon Avenue
Concord, NH 03301
Paul Leveille, Hon. AIA/NH; CPHC; CBCP; LEED AP

Structural Engineer Hayes & O'Neill
51 Melcher Street, Floor 1
Boston, MA 02110
Jeremiah O'Neill Jr., PE

1.3 Site

The Project is located at 525 Lincoln Street on a parcel consisting of approximately 32,589 total square feet of land (0.75 acres) ("Site"). The Site is currently an underutilized surface parking lot and is bounded by a city-owned parcel locally known as the Lincoln Street Green Strip to the West, Lincoln Street to the North, Lincoln Street to the East, and Cambridge Street to the South. See **Figure 1-1** through **Figure 1-4** for Aerial Views of the Existing Site and Existing Conditions Photographs.

Figure 1-1 Aerial Locus Map



Figure 1-2 Existing Conditions Photographs



AERIAL VIEW OF SITE LOOKING NORTH



AERIAL VIEW OF SITE LOOKING SOUTH

Figure 1-3 Existing Conditions Photographs



VIEW LOOKING SOUTHWEST ON CAMBRIDGE STREET



VIEW LOOKING NORTHEAST ON CAMBRIDGE STREET

Figure 1-4 Existing Conditions Photographs



VIEW LOOKING NORTHEAST ON LINCOLN STREET



VIEW LOOKING SOUTHWEST ON EMPIRE STREET

1.4 Development Summary

The Proponent proposes to develop one (1) six-story building (“Building”) totaling approximately 129,175 square feet that will contain eighty (80) residential units, ground floor flexible community space, residential amenities and one (1) level of garage parking at ground level. The Proponent will hire a general contractor (“Contractor”) to oversee construction of the Building. The proposed eighty (80) residential units will contain a mix of ten (10) traditional studio units, eight (8) three-bedroom co-living suites, and sixty-two (62) four-bedroom co-living suites. There will be a total of two hundred eighty-two (282) bedrooms. The ground-level garage totals approximately 9,700 square feet and provides approximately thirty (30) parking spaces with the ability to add approximately thirty (30) additional spaces with a mechanical parking solution.

The Project is designed to be operated as a co-living building, comprised of purpose-built high-density shared suites and studios where individuals rent their own private bedroom and bathroom and share common areas, kitchens, living rooms, and other amenity spaces with their suitemates. The Proponent will partner with Common Living, Inc. (“Common”), the largest and most experienced co-living management company in the U.S., who will oversee daily operations as the Building’s property manager (“Property Manager”) after the construction of the Project.

Co-living is an innovative substitute for a studio apartment that is growing nationwide as a new housing type that provides renters:

- More affordability and value
- Active, engaging, and immediate community
- Technology-enabled living
- On-demand resident assistance

The parking garage will be accessed from Lincoln Street on the northern elevation. Loading and delivery, residential move-in and move-out loading, and trash and recycling pick-up will take place immediately west of the parking garage access off of Lincoln Street on the northern elevation.

The space between the main residential entrance and parking garage access along Lincoln street will be landscaped to provide a new approximately 4,500 square foot open courtyard, which will be connected to and incorporate the existing green space west of the Site, the Lincoln Street Green Strip. Plantings and other landscape features will enhance the overall character of the Site, creating a softer, greener environment for residents and the public. See **Figure 1-5** and **Figure 1-6**.

Table 1-1 summarizes the proposed development program for the Project.

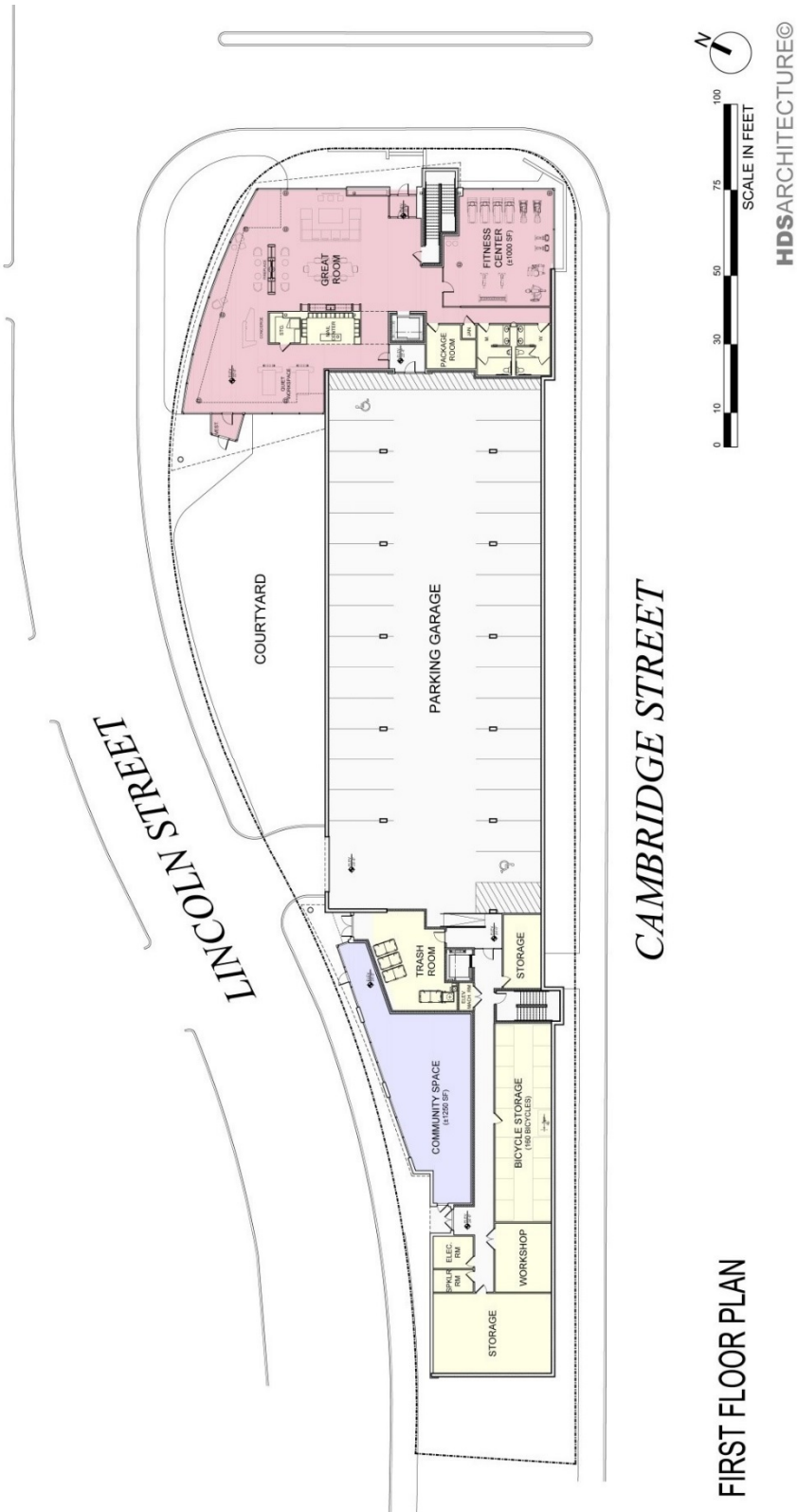
Table 1-1 Proposed Development Program Summary

| Use/Element | Size/Quantity |
|-------------------------------|--|
| Rental Building | |
| Lot Area | 32,589 SF |
| Building Gross Square Footage | 129,175 SF |
| Building Height | 6 stories |
| Residential | 80 units |
| <i>4 Bedroom Suite</i> | <i>62 units</i> |
| <i>3 Bedroom Suite</i> | <i>8 units</i> |
| <i>Studio</i> | <i>10 units</i> |
| <i>Total Bedrooms</i> | <i>282 bedrooms</i> |
| Parking | 30 spaces |
| Project Total | 129,175 SF 80 Units 30 Parking Spaces |

Figure 1-5 Colored Site Plan



Figure 1-6 Ground Floor Plan



1.5 Community Process

The Proponent has already completed extensive public engagement initiatives to best understand the needs and concerns of the community. The Proponent has held over twenty-five (25+) meetings with local stakeholders to introduce The Project, including meetings with:

- a. The Friends of the Lincoln Street Green Strip;
- b. The Allston Civic Association Leadership;
- c. The Brighton Allston Improvement Association Leadership;
- d. Artist Impact Allston
- e. The Boston Planning and Development Agency;
- f. The Office of Neighborhood Services;
- g. City of Boston Councilor Mark Ciommo;
- h. Massachusetts Representative Michael Moran;
- i. SPARK Boston; and
- j. The Housing Innovation Lab.

In addition to these meetings, the Proponent hosted an open-house next to the Site on March 5th, 2019, to unveil the Project to the community. Over forty (40) members of the immediately surrounding community attended, with approximately fifty (50) percent homeowners and fifty (50) percent renters.

As a product of these stakeholder meetings, the Project has already undergone numerous revisions based on community input, including:

- a. Improved workforce affordability with co-living scheme
- b. Addition of free flex/maker space to be used by neighborhood
- c. A second Building entrance along Cambridge Street
- d. Lincoln Street Green Strip Master Plan (“Master Plan”) incorporated in Site open space design and management
- e. Widened sidewalks and improved pedestrian experience
- f. Building-owned electric cars to be shared by tenants
- g. Potential traffic calming measures on Lincoln Street
- h. Addition of public art installations around 4,500 SF new green space

The Project will also be assigned an Impact Advisory Group (“IAG”), as the Project will exceed the 50,000 square feet of gross floor area which is the threshold for developments being subject to Large Project Review under Article 80 of the Boston Zoning Code (the “Code”). The IAG will be comprised of members of the community who have a vested interest in their neighborhood to provide input on local developments. The Proponent is committed to working closely with the IAG to ensure the Project meets the expectations of the surrounding community.

The Proponent will continue to meet with local elected officials, community organizations, residents, and interested parties through the permitting and construction of the Project to ensure that community concerns are observed and addressed as the Project advances.

1.6 Community and Public Benefits

The Project will transform an underutilized surface parking lot into an innovative residential development that will provide numerous community and public benefits. These benefits include the creation of much-needed workforce and income-restricted housing, revitalization of the Lincoln Street Green Strip, permanent jobs, improved pedestrian amenities, and additional tax revenue to the City of Boston (“City”) by increasing the assessed value of the Property.

The Project creates a new paradigm of housing development that introduces a new model for the creation of workforce and income-restricted housing. Specifically, a residential building that is purpose-built for co-living may serve as a private, unsubsidized mechanism to create housing available to households earning between approximately 50-100% of the Area Median Income.

The Project is located 0.1 miles from major bus lines, 0.6 miles to the Boston Landing Commuter Rail station, and 0.6 miles to the Harvard Avenue Green Line stop. By transforming an underutilized surface parking lot into a vibrant residential location, the Project will contribute substantially to the improvement of the pedestrian experience, urban design, and architectural character of the neighborhood. Specific public benefits include:

1.6.1 New Market Rate and Income-Restricted Housing Units

The Project is subject to the Inclusionary Development Policy (“IDP”), dated December 10, 2015, and is located within Zone B, as defined by the IDP. Within a co-living suite, each bedroom will be treated as an SRO (single-room occupancy) unit under the IDP. The Project will designate two (2) traditional studio units and nine (9) co-living suites containing thirty-five (35) bedrooms to be income-restricted for individuals earning not more than 70% of the Area Median Income (“AMI”).

Because of the efficiency-benefits of co-living, this Project will naturally contain a deeper level of affordability than other residential developments in the City, both in terms of income-restricted housing and market-rate housing. Per the BPDA’s 2019 Maximum Affordable Rents, the IDP units would rent for approximately \$844 per month (\$10,128 per year). This annual rent expense at 30% of one’s annual gross income, would be attainable to an individual earning approximately \$33,760. As a result, co-living IDP rents may be significantly more attainable for lower-income individuals than traditional IDP rents. Regarding the Project’s market-rate housing, the Proponent’s co-living management partner, Common, reports an average all-in cost of its co-living bedrooms that is naturally 20-30% less expensive than that of comparable studios, rendering these co-living bedrooms attainable to individuals earning under approximately 100% of AMI.

In addition to these naturally-occurring lower rents, purpose-built co-living offers additional potential cost-savings from traditional residential apartments. Utilities, cable, Wi-Fi, supplies, cleaning, realtor fees, and more will all be included within the monthly rent for ease and convenience. Refer to **Table 1-2 Value to Tenants**.

The Proponent believes that co-living is a promising model of development in Boston's current housing context. Given the increasing cost of living and expected population growth, purpose-built co-living offers a cost- and space-efficient way of building more units to accommodate growing demand for housing.

Table 1-2 Value to Tenants

| <u>Allston</u> | Income-Restricted Coliving | Market-Rate Coliving | Craigslist Room | Traditional Studio |
|-------------------------------------|-------------------------------|-------------------------|-----------------|--------------------|
| Estimated Base Rent Starting at: | \$844 | \$1,500 | \$1,200 | \$2,200 |
| Utilities: | Included | Included | \$100 | \$140 |
| Washer/Dryer: | Included | Included | \$20 | \$20 |
| Cleaning: | Included | Included | \$100 | \$100 |
| Supplies: | Included | Included | \$40 | \$40 |
| Cable/Wi-Fi: | Included | Included | \$30 | \$90 |
| Annualized Broker Fee: | None | None | \$110 | \$185 |
| Total Cost: | \$844 | \$1,500 | \$1,600 | \$2,775 |

1.6.2 *Revitalization of the Lincoln Street Green Strip*

The Proponent will partner with the Friends of the Lincoln Street Green Strip and the Allston Brighton Community Development Corporation ("ABCDC") to revitalize the landscaped area to the west of the Site, locally known as the Lincoln Street Green Strip (the "Green Strip"). The Green Strip is roughly one (1) acre of city-owned land that has fallen into disrepair and until recently had no plan for debris removal and landscaping (the Proponent has recently supplemented efforts by ABCDC to maintain the Green Strip by funding a private landscape contract).

The Green Strip serves as a popular, but informal pedestrian-level connection as it contains stairs and a ramp between Lincoln Street and Cambridge Street. In 2017, the Harvard Allston Partnership Fund awarded a grant to the Friends of the Lincoln Street Green Strip to develop a Master Plan to update this green space. The Master Plan, which includes the addition of new hardscape, landscape, benches, and native trees, will be incorporated into the Project's overall landscape design. After the installation of the Master Plan, the Proponent will oversee and maintain the Green Strip so it may serve as longstanding

community benefit, providing urban green space and a valuable pedestrian connection.
Refer to **Figure 1-7** and **Figure 1-8** for existing conditions of the Lincoln Street Green Strip.

Figure 1-7 Lincoln Street Green Strip Existing Conditions



Figure 1-8 Lincoln Street Green Strip Existing Conditions



1.6.3 *Job Creation*

Construction of the Project will contribute directly to the local economy by providing numerous employment opportunities. An Employment Plan/Quarterly Work Force Projection Table (the “Plan”) will be submitted in accordance with the Boston Resident Jobs Policy. The Plan will provide that the Proponent will make best efforts to have at least fifty (50%) percent of the total employee work hours for the Project performed by Boston residents, at least twenty-five (25%) percent of such hours performed by minorities, and at least ten (10%) percent of such hours performed by women. Construction will generate approximately one-hundred forty (140) full-time equivalent construction jobs.

Demand generated by the Project will require expansion of the Proponent’s team to employ approximately eight (8) new full-time equivalent jobs in property management and maintenance.

1.6.4 *Improved Pedestrian Experience*

The Project design team will work closely with the Boston Transportation Department (“BTD”) and is committed to complying with the Complete Streets Initiative to provide improved pedestrian access around the Site. These improvements will provide ADA/AAB compliant routes, street landscaping and improved pedestrian safety. Public way improvements will adhere to the City’s standards. The proposed design is consistent with visions of both the BPDA North Allston-Brighton Community-Wide Plan and the MassDOT Allston Multimodal Project with planters, widened sidewalks and additional landscaping along Lincoln Street that facilitates pedestrian connections to the rest of the neighborhood. The Building will be setback from the existing sidewalk limits and the right of way in order to enhance the walkability and increase the public realm experience as outlined by the Allston-Brighton Mobility Study. The streets surrounding the Project are considered neighborhood connectors and commercial street types. The proposed streetscape for Lincoln Street will be consistent with the vision of a multimodal street which includes parking lanes, a furnishing zone, and a pedestrian zone.

1.6.5 *New Flexible Community Space*

The Project will include approximately 1,250 square feet of ground floor flexible community space to be provided to the community at no charge. This space is distinct from the Building’s residential amenity space and was added to the Project based on community feedback that there is limited space in the neighborhood for public meetings or small events. This proposed space would be able to host workshops, recordings, poetry slams and meetings for the surrounding community. The space will be open during reasonable hours, able to be reserved for no fee and will be managed by the Property’s professional property management.

1.6.6 **LEED Certifiable Building**

The Project will comply with Article 37, Green Buildings of the Code by demonstrating compliance with the LEEDv4 program at a Silver certifiable level. The Project will also meet the Massachusetts Stretch Energy Code requirements to be ten (10%) percent better than ASHRAE 90.1-2013. Building design will include high-efficiency Building systems (mechanical, plumbing, and electrical), and a high-performance Building envelope. Other features being considered include sustainable design measures such as LED lighting within common areas, co-living suites, and studios, low flush and flow plumbing fixtures, Building energy management systems, and healthy interior environments.

1.7 **Summary of Required Permits and Approvals**

Table 1-3 presents a preliminary list of permits and approvals from government 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 1-3 Anticipated Permits and Approvals

| Agency Name | Required Permit or Action |
|--|---|
| COMMONWEALTH OF MASSACHUSETTS | |
| <i>Massachusetts Department of Environmental Protection, Division of Water Pollution Control</i> | Not Applicable |
| <i>Massachusetts Department of Environmental Protection, Division of Air Quality Control</i> | Notice of Commencement of Demolition and Construction |
| <i>Massachusetts Water Resources Authority</i> | Not Applicable |
| <i>Massachusetts Historical Commission</i> | Not Applicable |
| CITY OF BOSTON | |
| <i>Boston Planning and Development Agency</i> | Article 80 Review and Related Agreements |
| <i>Boston Zoning Board of Appeal</i> | Variances |
| <i>Boston Landmarks Commission</i> | Not Applicable |
| <i>Boston Civic Design Commission</i> | Schematic Design Review |
| <i>Boston Transportation Department</i> | Transportation Access Plan Agreement; Construction Management Plan |
| <i>Boston Department of Public Works/Public Improvement Commission</i> | Curb Cut Permit; Sidewalk Improvements; Street Opening Permit; Street/Sidewalk Occupancy Permit |
| <i>Boston Water and Sewer Commission</i> | Water and Sewer Connection Permit; Drainage Discharge Permit |
| <i>Boston Public Safety Committee on Licenses/Boston Fire Department</i> | Fuel Storage Permit; Permit to Erect and Maintain a Parking Garage |
| <i>Boston Inspectional Services Department</i> | Building Permits; Certificates of Occupancy; Other Construction-related Permits |

2.0 PROJECT DESCRIPTION

2.1 Site and Surroundings

The Proponent proposes to redevelop the Site consisting of 32,589 square feet of land bounded by Lincoln Street to the north and east, the city-owned parcel locally known as the Lincoln Street Green Strip to the west and Cambridge Street to the south. See **Figure 2-1** for the Site's existing conditions.

The Site is currently occupied by an approximately forty-five (45) space, 0.5 acres of underutilized surface parking lot, sidewalks, fencing and landscaped areas located in the western region of the Site. Adjacent to the Site to the north and east is Lincoln Street and to the south is Cambridge Street. Beyond its border streets, the Site is facing a one (1)-story, brick auto body shop located at 259 Cambridge Street; a one (1)-story, multi-colored tiled light industrial building with an associated, fenced surface parking lot at 510 Lincoln Street; and a two (2)-story stone commercial building at 500 Lincoln Street.

The Project is located in close proximity to several Massachusetts Bay Transportation Authority ("MBTA") bus routes and 0.6 miles from the new Boston Landing MBTA Commuter Rail Station. MBTA bus routes 64, 66, 501 and 503 run along Cambridge Street with route 66 also running along N Harvard Street. Additionally, the Site is located approximately 0.6 miles from the Harvard Avenue Station of the MBTA Green Line. The Project's proximity to these pedestrian amenities is reflected in its "Walk Score" of 90, meaning daily life and errands do not require a car.

The existing sidewalks along the Lincoln Street frontage of the Site will be reconstructed as part of the construction process and will incorporate design elements recommended in the Boston Complete Streets Guidelines and the Allston-Brighton Mobility Study. The existing sidewalk along Cambridge Street will remain as is, but the area is anticipated to be reconstructed as part of the MassDOT Allston Multimodal Project. Based on early MassDOT concepts, future improvements to Cambridge Street appear to be completely within the public right-of-way; therefore, no future takings along Cambridge Street are anticipated.

2.2 Proposed Project

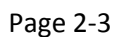
The Project entails the development of a new six (6) story residential building with ground floor flexible community space and one (1) level of garage parking at ground level. The Building will contain ten (10) traditional studio units and seventy (70) co-living suites. Broken out by bedroom, the Building will contain two hundred eighty-two (282) private bedrooms, thirty-seven (37) of which will be income-restricted. The Project will also include ground floor common spaces for residents and a flexible community space. The parking will be provided by a thirty (30) space parking garage on the ground level. Vehicular access will be provided from Lincoln Street on the northern elevation.

In its current condition the Site is not an inviting environment for the public nor does it generate pedestrian-level activity. However, the Project will provide much-needed revitalization and improved connections to nearby properties and public transportation as well as an enhanced pedestrian experience.

A new green space will be created on the northern elevation of the Site with direct access from the Building's main entrance and the flexible community space for use by both residents and the surrounding community.

The footprint of the Building is approximately 22,150 square feet, or approximately 68% of the 32,589 square feet Site. The total Gross Floor Area (GFA) of the Project is 129,175 square feet, providing a Floor Area Ratio (FAR) of 3.96, for which a variance will be requested from the Zoning Board of Appeal.

Project Notification Form
525 Lincoln Street



Project Notification Form
525 Lincoln Street

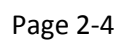


Figure 2-3 Ground Floor Plan

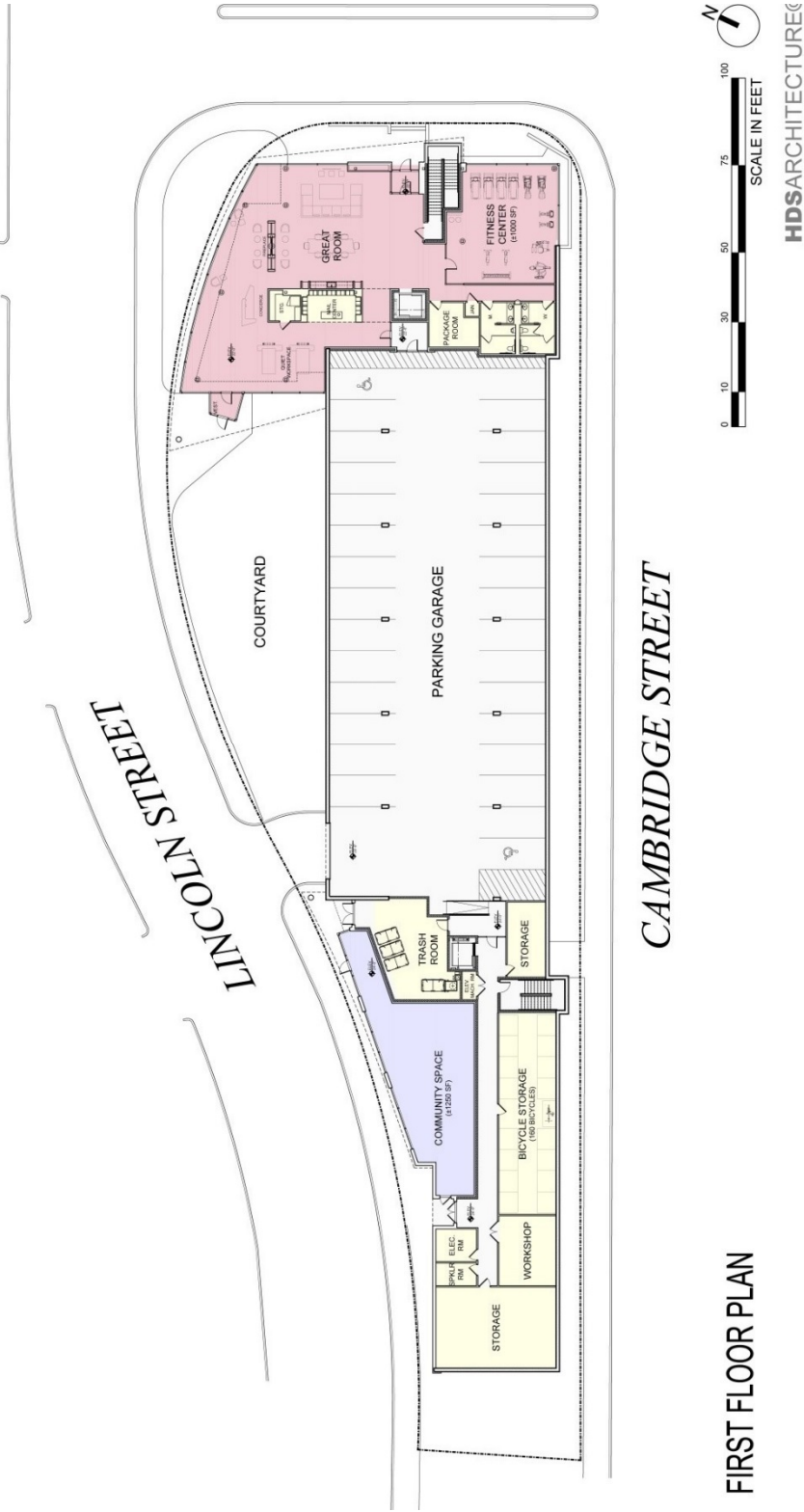
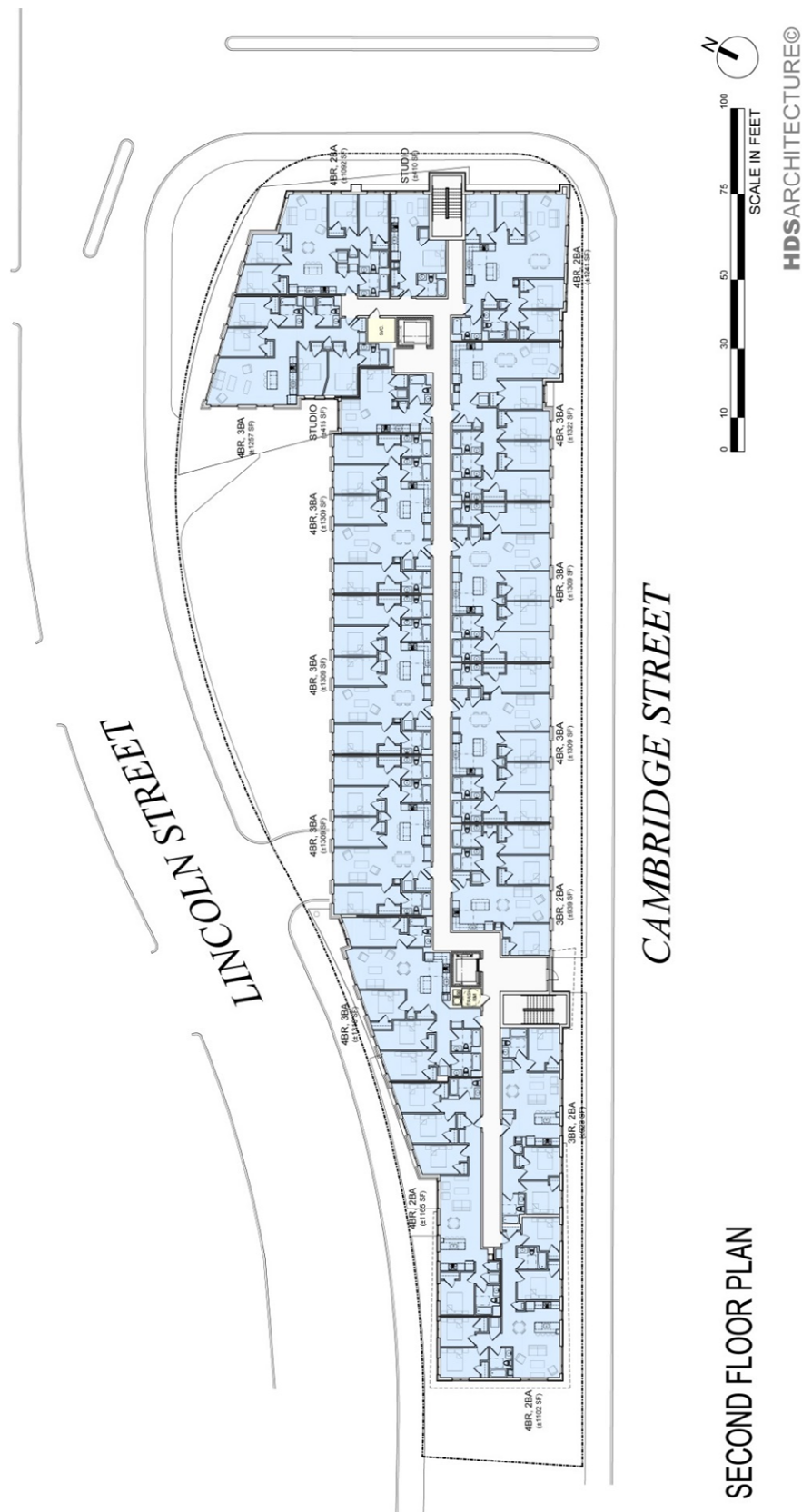


Figure 2-4 Second Floor Plan



Project Notification Form
525 Lincoln Street

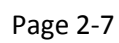
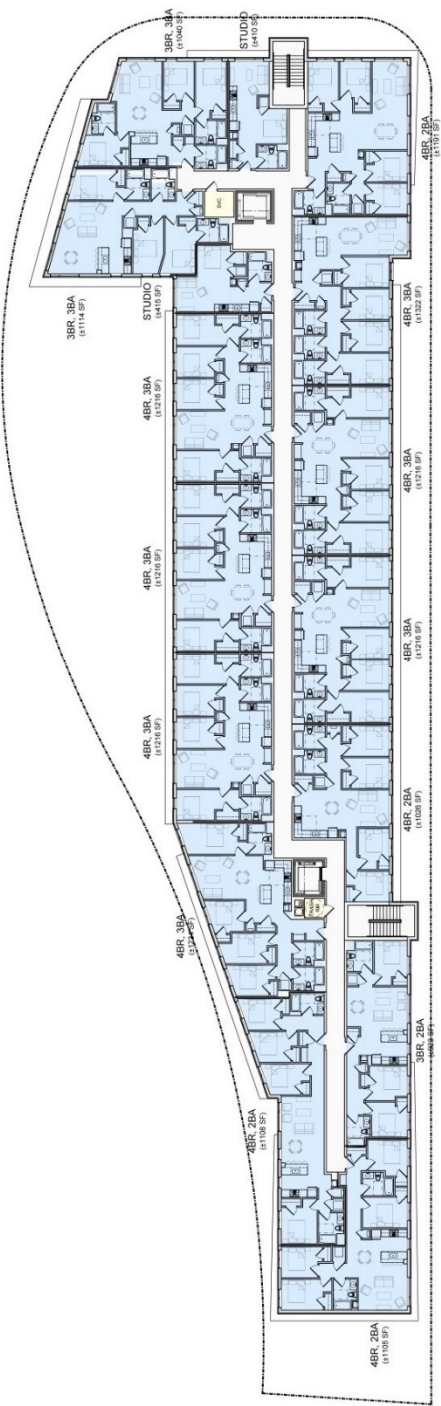


Figure 2-6 Sixth Floor Plan



HDSARCHITECTURE©

SIXTH FLOOR PLAN

Figure 2-7 Roof Plan

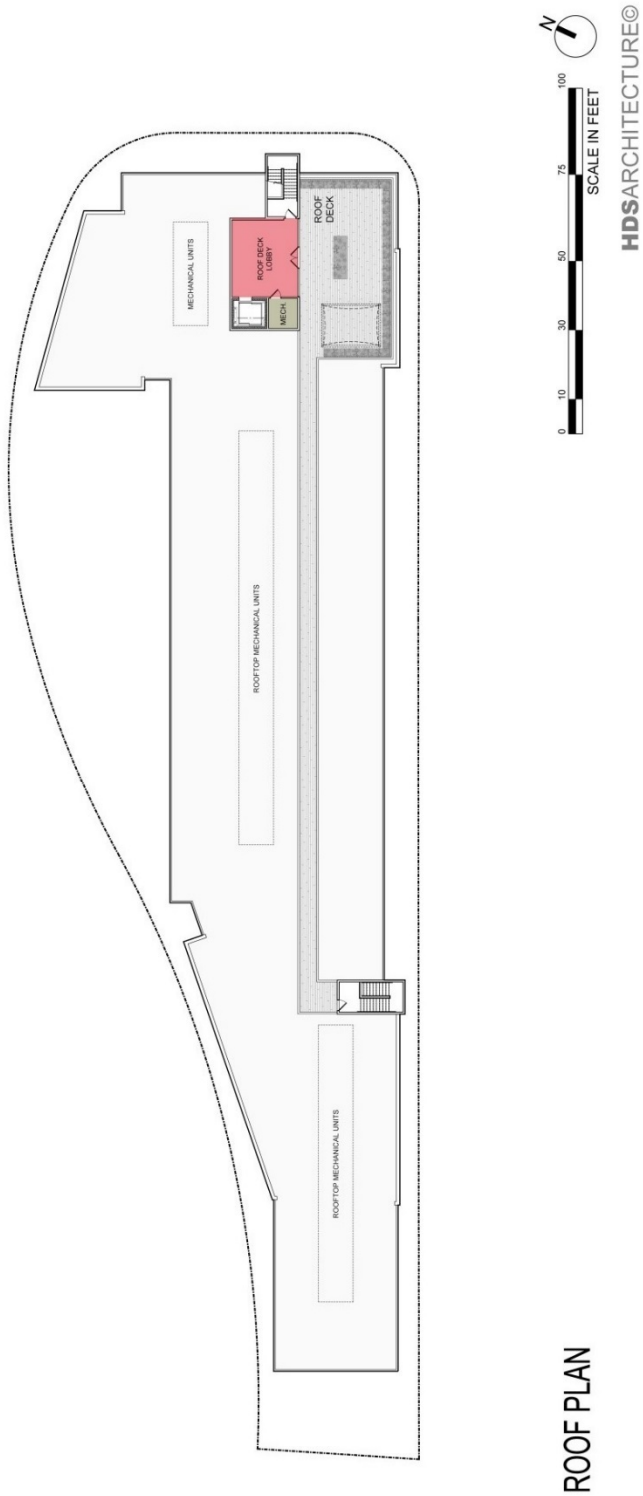


Figure 2-8 525 Lincoln Rendering 1



Figure 2-9 525 Lincoln Rendering 2



Table 2-1 Overall Project Program

| Project Component | Dimensions / Count |
|--------------------------|---------------------------|
| Gross Floor Area | 129,175 SF |
| Floor Area Ratio | 3.96 |
| Parking | 30 garage spaces* |
| Flexible Community Space | 1,250 SF |

*Potential to add approximately thirty (30) parking spaces with a mechanical parking solution if necessary

2.2.1 Ground Floor Uses

The Building footprint is approximately 22,150 square feet. The ground floor will include covered garage parking totaling approximately 9,700 square feet. The rest of the ground floor area will be dedicated for a lobby, resident spaces for lounges and community gathering, a fitness center, and common areas including bicycle storage, trash, and service functions. See **Figure 2-3 Ground Floor Plan**.

The Project will create these ground floor uses to activate and enhance the existing streetscape. Principal vehicular access will be provided through a new access driveway off Lincoln Street on the northern elevation.

2.2.2 Residential Units

The proposed new co-living suites will provide an innovative housing option for the neighborhood. The Project will provide a total of ten (10) traditional studios and seventy (70) co-living suites comprised of eight (8) co-living three-bedroom suites, and sixty-two (62) co-living four-bedroom suites. For an example of a typical co-living suite, refer to **Figure 2-10**. The studios and suites will be organized around a central corridor on each of the floors two (2) through six (6). There will also be a residential roof deck that will be able to be accessed by both stairs and elevator.

See **Figure 2-3** through **Figure 2-7** for the proposed floor plans.

Figure 2-10 Typical Four-Bedroom, 3-Bathroom Layout

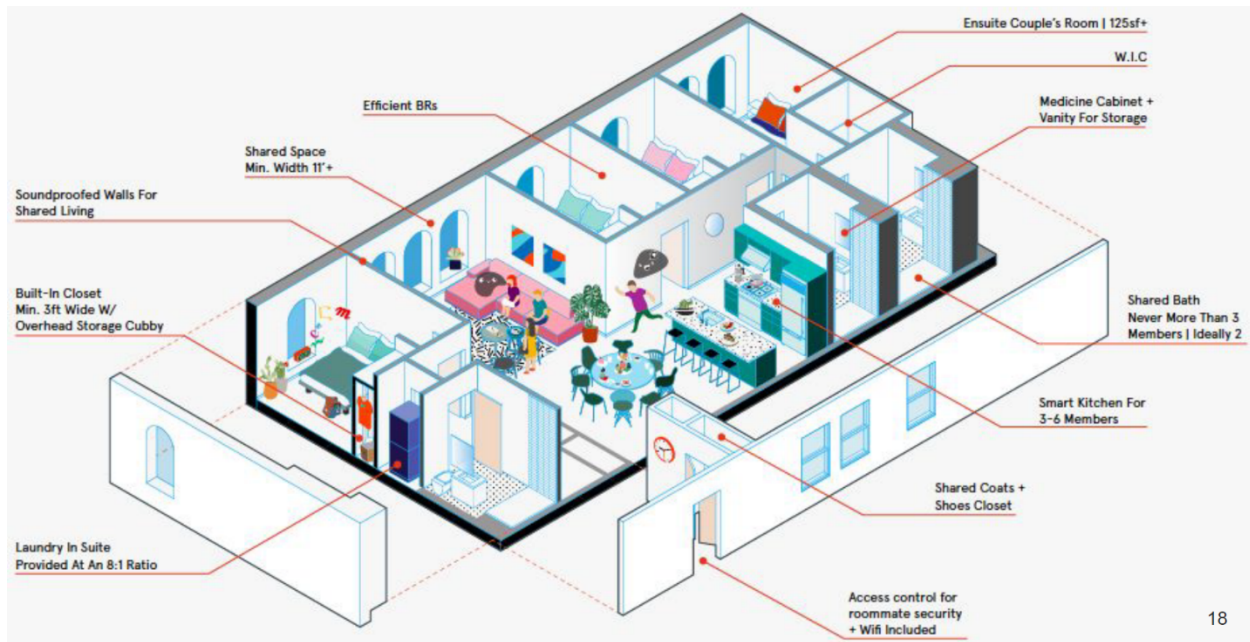


Table 2-2 Project Program

| Level | Co-Living Three-Bedroom Suite | Co-Living Four-Bedroom Suite | Studio | Total Units |
|-------|-------------------------------------|------------------------------------|--------|-------------|
| 02 | 2 | 12 | 2 | 16 |
| 03 | 1 | 13 | 2 | 16 |
| 04 | 1 | 13 | 2 | 16 |
| 05 | 1 | 13 | 2 | 16 |
| 06 | 3 | 11 | 2 | 16 |
| Total | 8 | 62 | 10 | 80 |

2.2.3 ***Parking and Access***

The Project will contain thirty (30) spaces in a ground floor parking garage (including 2 handicapped spaces) to be reserved for use by residential tenants. Additionally, up to an additional sixteen (16) parking spaces will be available for night parking across the street at 510 Lincoln Street.

Should demand necessitate, the Proponent has the ability to install and operate an automated parking system to create an additional thirty (30) parking spaces which would introduce a green, safe, and convenient parking solution. The system allows vehicles to be stored with a greater density than conventional parking systems and therefore conserves open space.

Access to the parking garage will be provided by a new driveway off Lincoln Street on the northern elevation. Vehicle pick up and drop off to the Building will be accessed also from the northern elevation of Lincoln Street.

2.2.4 Landscaping

A new courtyard area of approximately 4,500 square feet will be created between the main residential entrance and parking garage access along Lincoln Street. The landscaped courtyard will provide residents of the Project, as well as the surrounding community, an outdoor amenity that will enjoy long hours of sunlight in the summer.

To enhance the streetscape along Cambridge Street and Lincoln Street, planters, widened sidewalks and additional landscaping will include the implementation of both hardscape and softscape elements.

Outdoor seating areas may be provided in front of the main entrance, in front of the flexible community space, and in the courtyard on Lincoln Street. Streetscape along the Lincoln Street frontage of the Site will be designed per Boston Complete Streets standards. Enhancements along Cambridge Street will be behind the existing sidewalk and within the Site boundary.

2.3 Co-Living

Co-living is purpose-built, high-density shared suites where individuals rent their own private bedroom and bathroom and share common areas, kitchens, living rooms, and other amenity spaces with their suitemates. It provides a more-affordable alternative to studio apartments, access to community engagement and technology-enabled living.

2.3.1 Benefits of Co-Living

Common's unique approach to co-living provides tangible benefits to both today's renters as well as the communities in which its buildings are located.

Today's renters

Affordability. The rising cost of living, student debt, and changing social values have created a gap in the current housing stock. Through carefully considered design and industry expertise, co-living meets this population's needs with shared housing that is more-affordable, convenient, and flexible.

Common's hands-on, end-to-end property management and technology offering provides unparalleled services with below-market price points to renters. This makes Common a preferred choice for city-dwelling adults looking for well-designed and more-affordable living environment.

Residents can save money by living in co-living buildings versus living independently. Along with the lowered cost of housing, residents also save money on the household necessities, utilities, brokerage fees, weekly cleanings, and community events that are included in their rent.

On average, the all-in cost to live in co-living bedroom is 20-30% less expensive than the cost to live in a comparable studio. Common receives approximately 3,000 applications per week for its buildings, proving there is significant consumer demand for co-living and an increasingly urgent need to house today's urban population.

Community. Common's mission is to make city living better for its residents. Common's product eliminates the pain of living with roommates and leverages technology to build organic, robust communities on both the building and city level.

Common's proprietary community management tool – Connect by Common – will cultivate community both inside and outside the Building.

- Inside the Home: Common will bring together residents through events, such as exercise classes and concerts. Common's app also features chat functionality to create a digital network inside the building. According to the National Apartment Association, residents are 70% more likely to renew their apartment lease if they know more than 6 people in the building.
- Outside the Home: Common will orient many activities outside of the building, allowing residents to give back to the Allston community through volunteer work or engagement with local businesses.

A conscious cultivation of community will strengthen social bonds both within the Building and with the surrounding Allston community. Common will also maintain and oversee the flexible community space as discussed in Section 1.5.4. This space is specially designed so that residents can interact with each other and the community organically. The space provides an opportunity for tenants to organize activities that align with the interests and events of their communities at a cost significantly subsidized by the Project.

2.3.2 Common Background

Since opening its first development in 2015, Common has opened 27 buildings in 6 cities - New York, Washington DC, Chicago, San Francisco, Seattle, and Los Angeles and will expand to 1,900 members by 2019. Common buildings are open to anyone who would like to become a member, and the average age of their current residents is approximately 30 years old. They receive approximately 3,000 applications for a space in a Common

building weekly, with a vacancy rate of under 2%. Tenants sign long-term leases (i.e. 12 months+) and stay between two and three years on average.

History

Common’s first building, Common Pacific in Brooklyn, opened in 2015 with 19 beds. After witnessing first-hand the high demand for co-living, they began expanding across New York and the country, opening new buildings in new cities each year. In 2017, Common also opened its first building that provided traditional units, Common Baltic in Brooklyn. Traditional units allow residents to have their own apartment, while still gaining access to Common’s technology, amenities, and services.

Expansion

Common’s future pipeline includes projects in San Diego, Miami, Atlanta, Philadelphia, Denver, Pittsburgh and many other urban centers. In 2019, Common is projected to triple the number of buildings, from 23 to 60 buildings, providing 1,900 residents with the opportunity to experience co-living, and expanding further across the United States.

Figure 2-11 Common Market Overview



2.3.3 *Co-Living in Boston*

Boston

Co-living provides an opportunity to help meet the staggering demand for efficient and more-affordable housing in the Boston area. The combination of an expanding job market and interest in urban living along with a limited housing stock has created a lack of supply and some of the highest rents in the country.

The type of space-efficient design that co-living enables is one effective solution to combatting the housing crisis.

525 Lincoln Street, Allston

The Project is situated in a location that offers convenient and frequent transit through a variety of options. Boston Landing, a multimodal transit center including the Commuter Rail and major bus lines, is a short walk away; and the Green Line, providing rapid access to downtown Boston, is near as well. The Project will further drive mobility options through the provision of a new BlueBike station, 160 bike parking spaces and dedicated on-site car sharing services, allowing tenants full access to the city without the need for a car.

2.3.4 *Management and Operations*

Common offers end-to-end property management and provides a stress-free and all-inclusive living experience to residents. The successful operation of a Common building aims to maximize efficient operations by implementing the following:

- Smart, proven and thoughtful design choices
- Utilization of reliable technology throughout all processes
- Establishment of active feedback loop to ensure operational efficiencies

Maintenance

This Project will be staffed with full-time receptionists, Building Engineers and a General Manager. Common will respond to a maintenance request within 2 hours and perform an on-site diagnosis within 12-36 hours. There will also be a 24/7 phone number, which residents can call in the event of in an emergency.

Repairs and maintenance requests are responded to by Common's Property Services team in their main office. As detailed above, the Building will have Building Engineers available, who will receive maintenance tickets on a real-time basis through Common Resident Support.

All maintenance employees will be Common team members and will be dedicated to not only fulfilling the responsibilities of their individual roles, but also acting as Common's ambassadors. Common's on-site staff interact with residents on a daily-basis, and as such,

are instrumental in the communication and execution of Common's duties as an operator.

Cleaning and shared goods

In addition to maintaining a high-level of cleanliness in the community and common areas of the Building, Common will arrange for cleaning of the co-living suites on a biweekly basis.

As part of their monthly rent, tenants will receive shared goods including dish soap, paper towels, disinfectant wipes, all-purpose cleaner and sponges to encourage and facilitate cleaning among the residents of each shared suite.

Community

Given the shared configuration of co-living buildings, Common has placed an emphasis on building out a robust, in-house team dedicated to enhancing resident experience by resolving any resident conflicts. Common's Resident Services Team is comprised of the following roles:

- Resident Support Specialists - Serve as the first point of contact for all inbound resident inquiries, responding to all resident inquiries in a timely manner
- Customer Success Managers - Responsible for managing the 1:1 relationship with its residents. Common's CSM's get to know residents on a more personal level, facilitating the resolution of any interpersonal conflicts or exploring reasonable alternatives, such as transferring rooms, to make the most out of their time at Common
- Resident Experience Managers - Proactively establish partnerships and program events to cultivate community and convenience for Common residents

Building community among members is one of the pillars of Common. Through the implementation of industry-leading technology, they are able to build community on a suite, building and city level. Common's dedication to community ensures a social living experience that also enhances resident retention. Resident events happen in two ways at Common:

- Common-organized events: Common will curate and purchase tickets to a variety of experiences, allowing residents from different buildings within the same market to connect based on shared interests. They also organize larger scale, mixers and events that are open to all residents in a region.
- Resident-organized events: A more organic route where residents can plan events (i.e. Friendsgiving or movie night) within their own building. They can also request support from Common for planning, execution, and funding.
- All Common residents have access to a Resident Directory through the Connect by Common app. This allows residents to see their housemates, as well as other Common residents. Each individual decides what information to publicize and can include: Name, Photo, Common Home, Interests, and Social Media Profiles (Instagram, Facebook, LinkedIn)

In addition to event programming, the functionality of the Connect by Common app allows Common residents to chat with other individuals in the building (with oversight by Common) and plan smaller, interest-based gatherings. Connect by Common also provides the opportunity for Common to patronize surrounding businesses through partnership and perk programs.

2.4 Compliance with Boston Zoning

The Site is located in the Neighborhood Shopping Sub-district (NS-1) in the Allston-Brighton Neighborhood District as established under the Boston Zoning Code (Article 51) and as shown on Map 7A/7B/7C/7D (Allston/Brighton). Multi-family dwellings are conditional as a use in an NS-1 sub-district.

The Project will require variances relating to use, height, floor area ratio, and rear yard setback. Pursuant to Article 51, section 51-56, parking and loading dock requirements will be determined as part of the Article 80 (Large Project Review) process with the BPDA. **Table 2-3** below compares the Project with the NS-1 zoning sub-district which governs the use of the Site.

Table 2-3 Project vs. Zoning Requirements Comparison Table

| Applicable Requirement | NS-1 Sub-district | Proposed Project |
|--|---------------------------------|---|
| Use (Multi-family Dwelling) | Conditional | Multi-family Dwelling |
| Maximum Floor Area Ratio (FAR) | 1.0 | 3.96 |
| Maximum Building Height | 35' (Three Stories) | 69' 10" |
| Minimum Lot Size | NONE | 32,589 SF |
| Minimum Usable Open Space – SF per Dwelling Unit | 50 SF per Dwelling Unit | 112 SF per Dwelling Unit |
| Minimum Lot Width | NONE | Greater than 50' |
| Minimum Lot Frontage | NONE | Greater than 100' |
| Minimum Front Yard Setback | NONE | 3.4' (Cambridge Street frontage) 2.5' (Lincoln Street frontage) |
| Minimum Side Yard Setback | NONE | 22.3' |
| Minimum Rear Yard Setback | 20' | NONE |
| Off-street Parking Spaces | Article 80 Large Project Review | 30 Parking Spaces |
| Off-street Loading Requirements | Article 80 Large Project Review | 40' Trash Pick-Up Loading Zone (Lincoln Street) 20' Drop-Off/Pick up Loading Zone (Lincoln Street) |

2.5 Alternatives Analysis

This section summarizes the impacts of a No Build Alternative, an As-of-Right Alternative, and the Preferred Alternative as it has evolved since Preliminary Design.

2.5.1 No Build Alternative

The No Build Alternative would leave the Site as it exists currently – approximately 0.75 acres of an underutilized surface parking/undeveloped lot. The associated housing stock increase would not occur. The creation of new market rate and income-restricted housing would not exist. Additionally, the redefinition of this part of Lincoln Street

would not occur, because the retail and residential street would not be developed. There would be no improvement to pedestrian access on the surrounding streets. A No Build Alternative would be an underutilized design that does not improve pedestrian connections and would not be consistent with the Allston-Brighton Mobility Study. The value of this parcel is not only its individual development, but also in its effect on the community at large.

2.5.1.1 Impact Summary

Under the No Build Alternative, there is no increase in water, sewer, or inflow and infiltration revenues to the City.

The stormwater management system would not be improved and would remain the same as it exists today. Currently, the Site is covered with an asphalt-paved parking area amounting to approximately 64% impervious area. The stormwater runoff from the existing parking lot sheet flows towards existing drainage structures within Lincoln Street. There are currently no modern Stormwater Best Management Practices on-site.

Under the No Build Scenario, there is no change to the traffic nor the vehicle trips per day.

Under the No Build Scenario, the Greenhouse Gas Emissions would be unchanged from the current condition.

There are no new land impacts under the no-build alternative.

In summary, the no build alternative would leave the Site as it exists today and would provide none of the added benefits of housing, income-restricted housing, urban development, community contributions and environmental improvements would be experienced by the Site, the neighborhood, or the City.

See **Figure 2-12** for an existing conditions plan of the Site.

2.5.2 As-of-Right Alternative

Per BPDA standards an as-of-right alternative design has been considered which included buildings that conform to the dimensional requirements of underlying zoning, i.e. allowed by Article 50 of the Boston Zoning Code.

The underlying zoning for the Project is Allston/Brighton Neighborhood Shopping District which allows commercial uses such as retail and office. Proposed developments would be restricted to a maximum floor area ratio of 1.0 and a building height of 35 feet under current zoning. As such, the As-of-Right alternative would likely consist of a one (1) story office or industrial use.

Such a development with the reduced scale and program would not meet the expectations of the North Allston-Brighton Community-Wide Plan (“CWP”) for the area, which envisions the location of the Site as a major entry point with a use that will engage street-level pedestrian activity. As detailed below, without this Project as it is proposed in the preferred development scenario, the many associated benefits, including the full level of creation of construction and full time jobs, additional housing and flexible community space would not be realized.

2.5.2.1 Impact Summary

To analyze the As-of-Right Alternative, a conceptual development was considered that adheres to the underlying zoning bylaws. Under this alternative the Proponent would pay substantially less in water and sewer fees to the City, as well as contribute less inflow and infiltration fee as compared to the Preferred Alternative.

Under the As-of-Right development alternative the traffic would increase over the No-Build Alternative. The As-of-Right Alternative would not include the proposed mitigation, the surrounding streets would not experience pedestrian improvements and enhanced accessibility.

The overall land would be impacted under this scenario by developing the Site into an assumed 95% impervious area. The Site layout would not lend itself to any courtyard or gathering areas and the only vegetated areas would come from minimal Site vegetation and potential street trees.

The As-of-Right alternative would not conform to the CWP and would not provide any added benefits to help establish a vibrant community.

As stated above, under the current zoning bylaws the Project would have very little density, minimal open space, and would not adhere to the use or density goals as outlined by the CWP. Additionally, with a decreased program, the job creation and the community benefits would not be possible.

2.5.3 Preferred Project Alternative

As detailed in the Development Summary, the Proponent proposes to redevelop the Site with a vibrant, economically feasible residential development. The Project will include a new 6-story co-living building with a total of approximately 129,175 square feet, that will contain ten (10) rental studios, seventy (70) rental co-living suites, 1,250 square feet of flexible community space, residential amenities, and a thirty (30) space parking structure.

In addition, residential and community-oriented elements of the Project contribute to the City’s vision for this neighborhood as outlined in the recent North Allston-Brighton

Community-Wide Plan. This Project will enhance this section of Lincoln Street and act as a catalyst for future development and encourage more projects to invest in the surrounding area.

The Project will also provide other benefits to the City including enhancements to the neighborhood, increased local, state, and federal tax revenues, construction and permanent jobs

The Proponent will continue to work with the BPDA and the surrounding community in an effort to achieve a comprehensive design that is integrated with the neighborhood. The preliminary design called for additional residential units to have frontage and access along Lincoln Street. After conversations with the community, it was determined that a better use for this space would be to create a flexible community space that could be open to the public for gathering, events, workshops, maker space, and similar uses. The community suggested this concept after explaining that there were limited available spaces like this in the neighborhood, and that it would see frequent usage. The Proponent in receipt of these comments has developed the preferred alternative with the incorporated flexible community space and continues to work with the surrounding community to design and curate the space to best suit the needs of the neighborhood. See **Figure 2-13** for the Preferred Alternative.

Figure 2-12 No Build Alternative

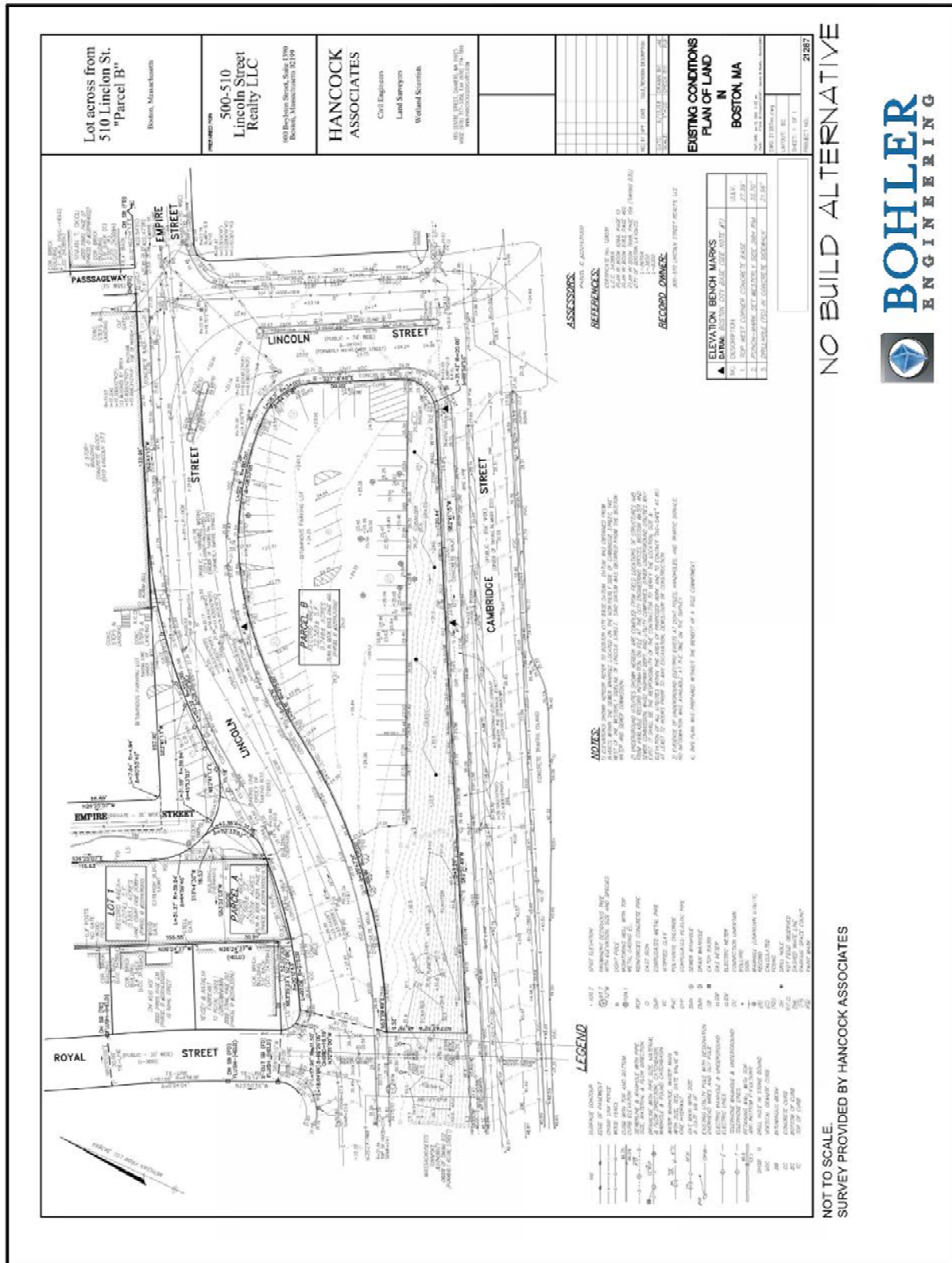
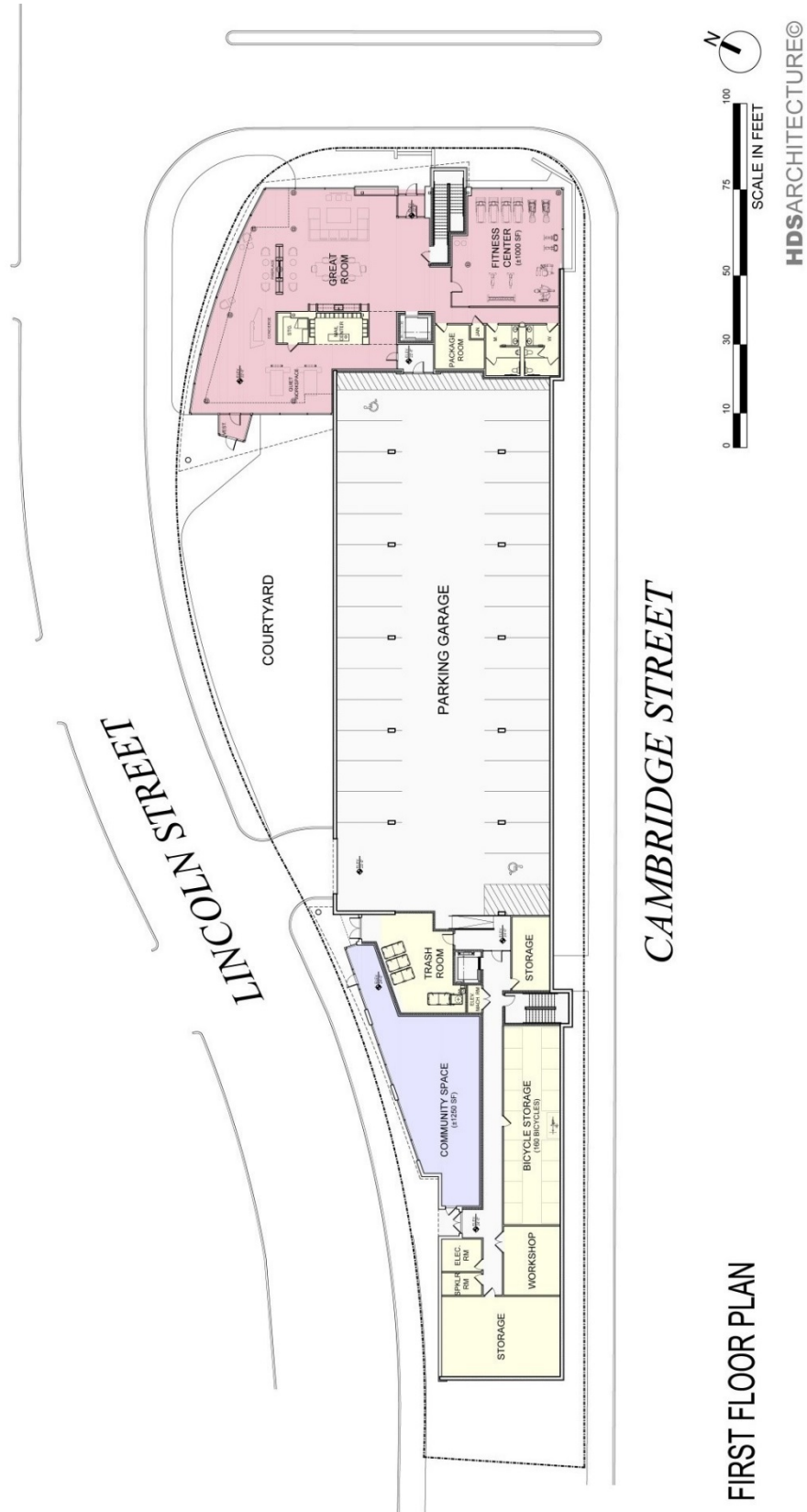


Figure 2-13 Preferred Alternative (Ground Floor Plan)



Currently, the Site is an untested area for a residential multifamily community. There is little retail and pedestrian activity surrounding the Site. Few housing units have emerged. Taking these market dynamics into consideration, and the vision outlined by the North Allston-Brighton Community-Wide Plan, the Proponent identified a flexible community space component, residential lobby, and improved green space as the best use group to activate the street scape of the Site and encourage new residential and commercial growth. The Site's adequate frontage along Lincoln Street and unique location next to the MassDOT Allston Multimodal Project will help to revitalize the area, provide a complementary use to the surrounding community, and help to promote future growth in the neighborhood and Neighborhood Shopping Subdistrict.

2.5.3.1 Impact Summary

The Preferred Alternative will generate an estimated 31,020 gpd of sewer discharge and use approximately 34,122 gpd of water. Per conversations with the Boston Water and Sewer Commission ("BWSC"), the City's infrastructure has the capacity to meet the water and sewer needs of the Preferred Alternative. The Proponent will pay the City additional water and sewer fees, as well as a substantial inflow and infiltration fee to upgrade the infrastructure.

The Preferred Alternative will dramatically improve the existing stormwater management system by reducing existing peak rates and volumes of stormwater runoff from the Site and infiltrating the first inch of rainfall from the impervious areas. The Project will increase pervious area on-site, introduce new green space to the Site, and encourage groundwater recharge by infiltrating stormwater via a subsurface infiltration system.

The Preferred Alternative will include necessary mitigation for traffic impacts including Traffic Demand Management ("TDM") measures, bicycle amenities, Building-dedicated electric car-sharing, transportation awareness events and transportation information and material.

The Preferred Alternative will meet the State Stretch Code requirements and Boston's Article 37 – Green Buildings and Climate Resiliency Guidelines. **Section 5.6** fully describes the greenhouse gas analysis of the Preferred Alternative.

The Site will incorporate Boston Complete Street Initiatives, open courtyard areas, and various vegetated areas to create a vibrant community space.

Additionally, the Preferred Alternative achieves the goals of the North Allston-Brighton Community-Wide Plan by providing vibrant community mixed-uses and

residential development. The development will also provide economic benefit in the form of construction and permanent jobs.

2.5.4 *Alternatives Analysis Conclusion*

After thorough analysis of possible project alternatives, it was determined that the Preferred Alternative provides an economically feasible project that best achieved the goals of providing an enhanced street scape and community growth potential, meeting the intent of the North Allston-Brighton Community-Wide Plan. Other alternatives were found to hinder the Proponent's ability to provide an innovative new housing alternative, community benefits, and a better pedestrian experience. The Preferred Alternative generates the greatest benefits to the local community, works in harmony with the neighborhood and meets the goals of the Community-Wide Plan.

3.0 URBAN DESIGN

3.1 Introduction

The Project is being designed to provide a much-needed urban revitalization and enhanced pedestrian experience along Lincoln Street, Cambridge Street, and the surrounding area. The Project is highly visible from Cambridge Street and the Mass Pike and is the first of what may be many projects that would contribute to the vision proposed by the MassDOT Allston Multimodal Project. A key aspect of the urban design planning is connecting the Site to the current neighborhood by introducing flexible exterior public spaces along the edges of the Site, the rehabilitation and expansion of the existing Lincoln Street Green Strip, as well as the introduction of a dedicated public space within the Building. The goal is to create a permeable Site plan with a denser mixed-use fabric of residential and public spaces both inside and out. See **Figure 3-1** for a Context Plan of the site.

The Site is approximately 0.75 acres (32,589-square foot) of land area bound by Lincoln Street to the north and east, Cambridge Street to the south, and the Lincoln Street Green Strip to the west. The parcel is located two blocks west of the Mass Turnpike and Storrow Drive and is within walking distance of the new Boston Landing station on the MBTA Framingham/Worcester Commuter Rail Line. The property currently contains an approximately forty-five (45) space surface parking lot. With various other mixed-use/residential developments being proposed adjacent to the Site, there is the opportunity of enhancing the neighborhood community. The Project will be an important component in improving the overall pedestrian experience along Cambridge Street.

Buildings in the immediate area have varied scale, use, and materials, providing the opportunity to design a building that is reflective of the diverse, creative urban fabric. The Project will be a landmark building that connects the Lincoln Street neighborhood to Cambridge Street and to any future developments that may occur in the area.

The Project will be built along the perimeter of the Site to maximize green space, providing a generous landscaped buffer along Cambridge Street and a proposed courtyard for the public to enjoy. The interior public space and residential amenities create a transparent first floor façade that along with the additional green space, will all work together to form a dynamic streetscape that activates the public realm along the edges of the Site. See **Figure 3-2** and **Figure 3-3** for existing and proposed Site conditions.

Figure 3-1 Context Plan



Figure 3-2 Existing Site Conditions



Figure 3-3 Future Site Conditions



3.2 Massing

The immediate area is characterized by different scales and a mixed use of buildings, surrounded by residential neighborhoods to the north, and busy traffic routes of Cambridge Street and the Mass Turnpike to the south. These existing conditions combined with the current use of the Site as a parking lot effectively creates a streetscape uninviting to pedestrians. The Site is an important edge along Cambridge Street that over time, according to MassDOT's Allston Multimodal Project vision, will become a two-sided street with new development on both sides of the corridor. As local pedestrian paths and public transit improvements are implemented, and adjacent sites are redeveloped, the area ultimately takes form and becomes its own destination.

The Proponent's approach is to create a Building massing that is an outward expression of the points of visual interest adjacent to the Site. To the north of the Site is an existing mural of great value to the existing residents in the neighborhood, which becomes physically expressed as two bookends at each end of the Building. The bookends are linked by a brick façade in keeping with the existing character of the neighborhood and other buildings along Cambridge Street. The two main residential entrances are defined by the vertical stair towers, one at the corner of Lincoln Street and Cambridge Street, and the other up the hill on Cambridge Street.

The massing follows the unique geometry of the Site to form an L-shaped configuration, opening the northern edge of the Site, creating the opportunity for a public green space/courtyard. The northern Site edge along Lincoln Street is further activated and enhanced through the use of large expanses of glass and expressive canopies, defining the location of the interior residential amenities at one end of the Building and the proposed interior public space near the other. The Building's interior parking garage is hidden from the street to further improve the public experience along Lincoln Street. See **Figure 3-4** through **Figure 3-7** for Architectural Diagrams.

Figure 3-4 Existing Conditions Diagram



EXISTING CONDITIONS DIAGRAM

Figure 3-5 Proposed Concept Diagram

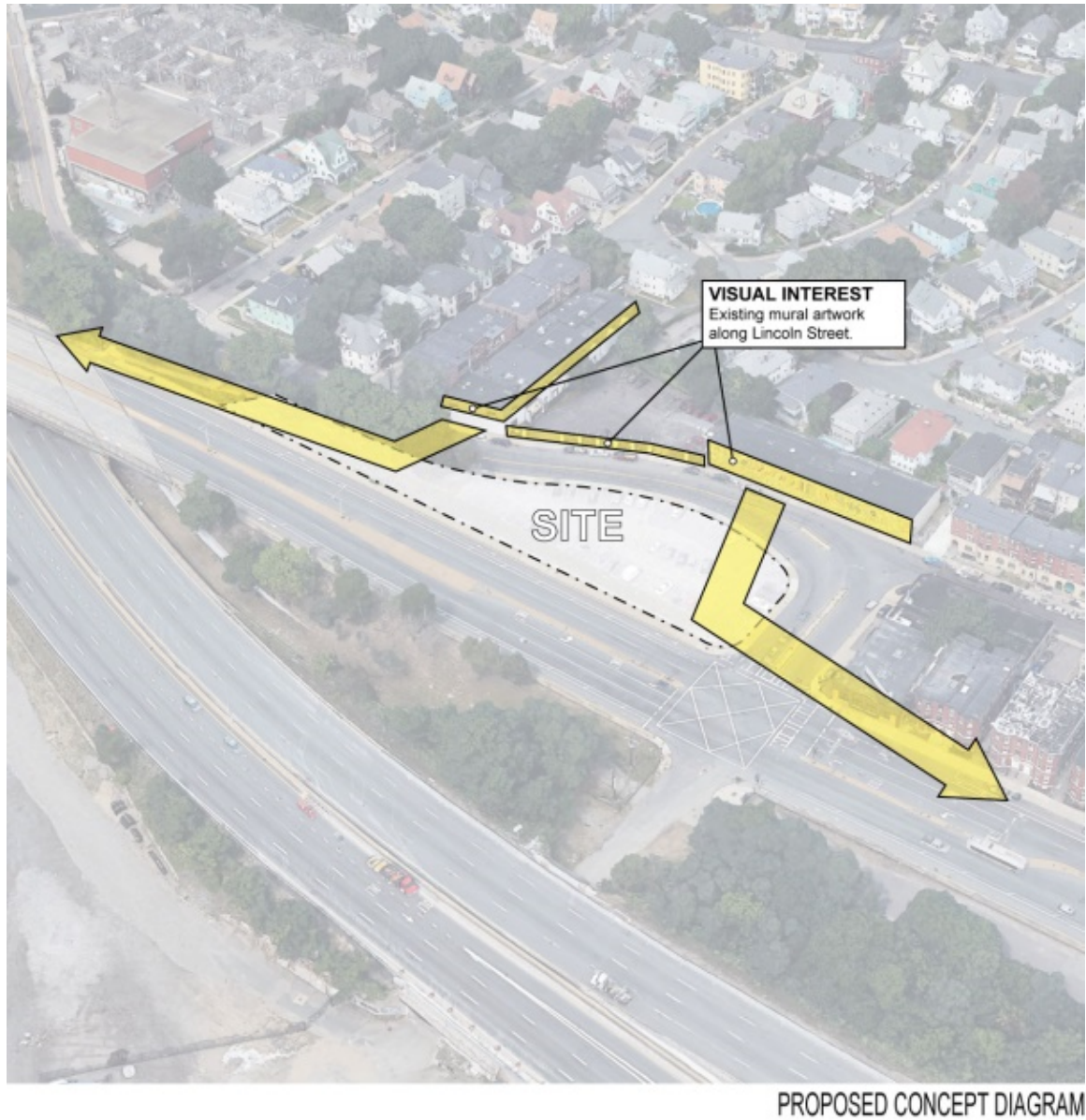


Figure 3-6 Proposed Site Plan Concept 1

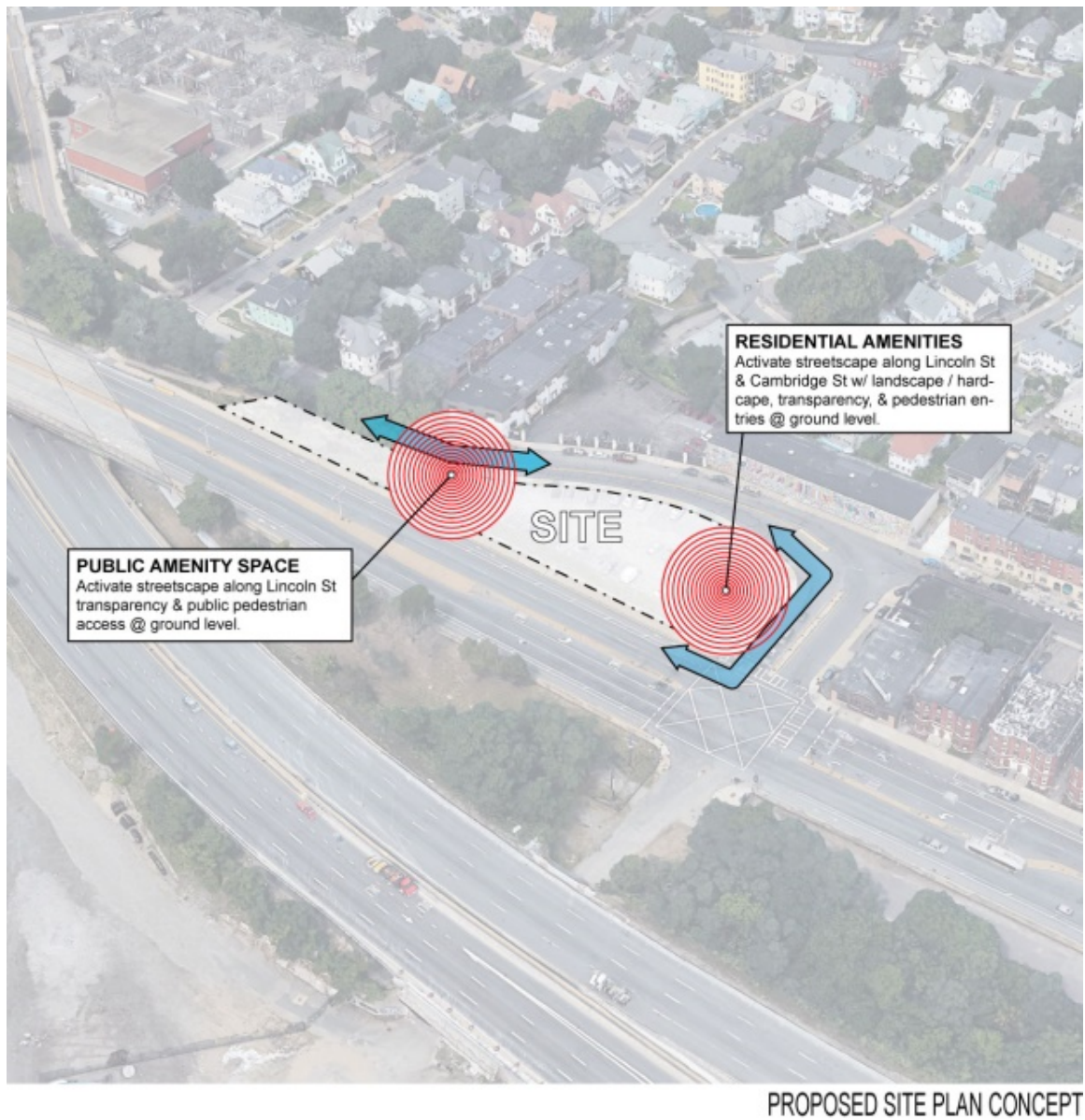
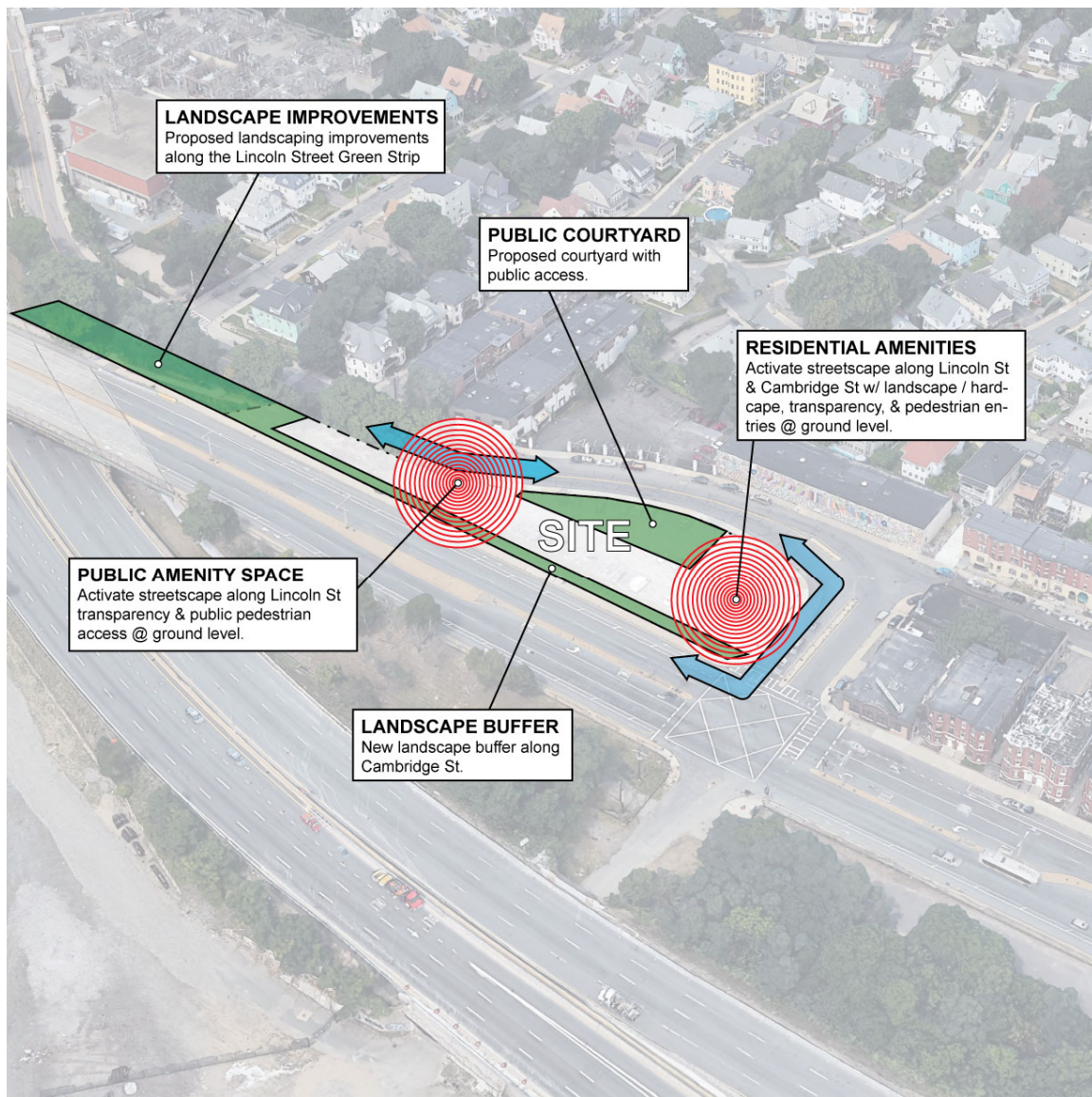


Figure 3-7 Proposed Site Plan Concept 2



PROPOSED SITE PLAN CONCEPT

3.3 Character and Materials

The Building will provide diverse expressions, broken into primary and secondary components in a scale appropriate for a mixed-use neighborhood of primarily multi-family residences. The design palette is proposed to be a combination of masonry, metal panels, and fiber cement panels. The materials are combined in a way to reflect the diverse visual fabric of the surrounding context. Bookends at each end of the Building will be clad in metal paneling to create a ‘framed opening’ effect within a field of fiber cement panels. The massing is enhanced with the introduction of accent panels along the inside of metal panel frames and along the stair towers. The brick façade between the book ends will introduce dynamic brick detailing to reflect some of the existing masonry character in the neighborhood. Glazed public space and residential amenities at ground level along with landscape and streetscape improvements will enhance the public realm. See **Figure 3-8** and **Figure 3-9** for Building material diagrams. See **Figure 3-10** through **Figure 3-14** for Building elevations.

Figure 3-8 Material Diagram 1



Figure 3-9 Material Diagram 2



Figure 3-10 Northwest Elevation



Figure 3-11 Southeast Elevation



Figure 3-12 Northeast Elevation



Figure 3-13 Southwest Elevation 1



Figure 3-14 Southwest Elevation 2



3.4 Landscape and Streetscape

The Project will reinforce the MassDOT Allston Multimodal Project vision and will be pedestrian-oriented by providing street level community uses, streetscape improvements, and landscaping. Pedestrian activity will be both enhanced and generated by the introduction of a new Blue Bike hub with direct connection to the bike path along Cambridge Street and by residents who will live in the apartments above. The streetscape along Lincoln Street directly adjacent to the Project will include two vehicular travel lanes, with parallel parking opposite and a drop-off/pick-up lane in front of the Building. The streetscape will be furnished with new street trees, wide pedestrian friendly sidewalks, and flexible public seating areas along the perimeter of the Site. A new publicly-accessible courtyard is proposed on the northern edge of the Site along Lincoln Street.

There is a pedestrian link between Lincoln Street and Cambridge Street within the existing Lincoln Street Green Strip to the west of the Site. This green strip will be rehabilitated and create visual connection to the proposed courtyard on the Site improving pedestrian connectivity from Lincoln Street to Cambridge Street.

See **Figure 3-15** for the proposed landscaping plan.

Figure 3-15 Conceptual Landscape Plan



3.5 Consistency with Area Plans

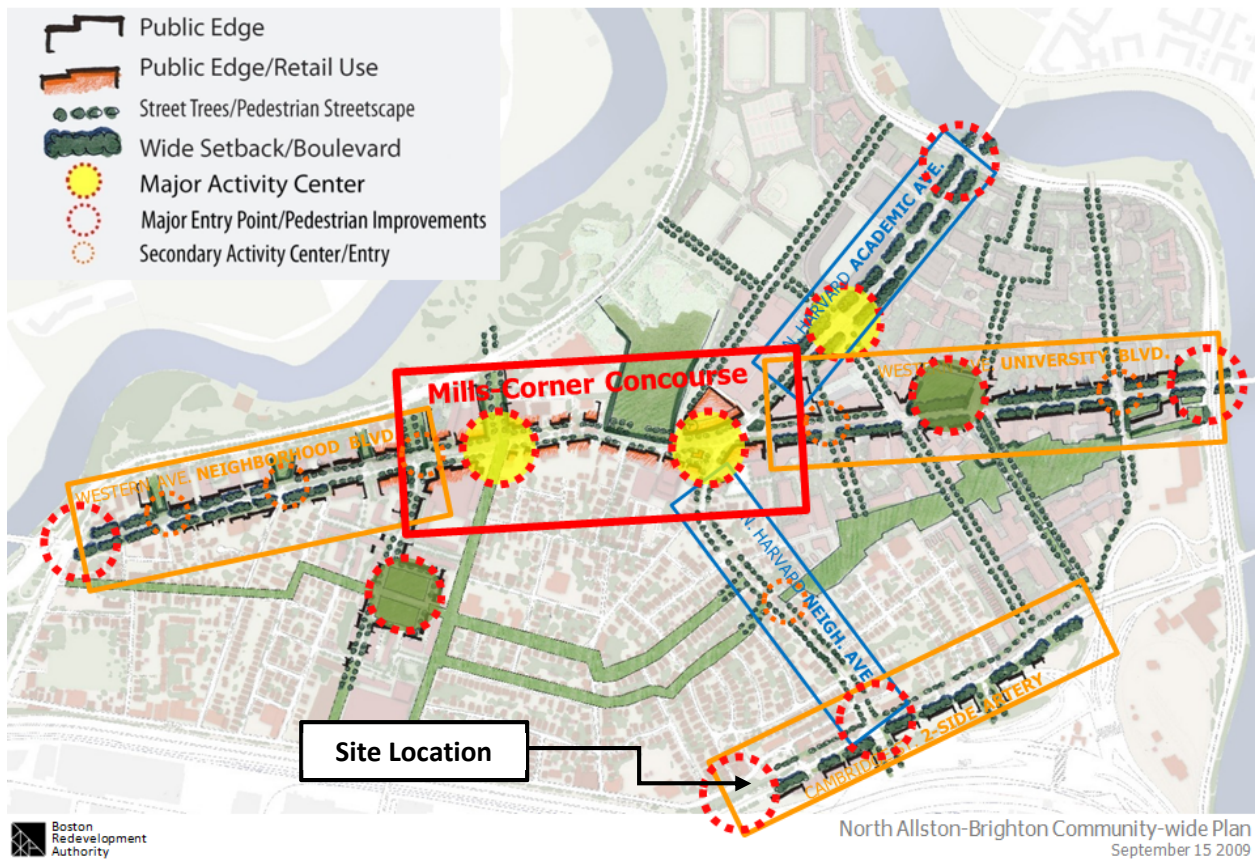
The Site is located at an integral connection point between the BPDA North Allston-Brighton Community-Wide Plan (“CWP”) and the MassDOT Allston Multimodal Project (“Multimodal Project”). The CWP was finalized in 2009 to identify a series of specific planning and implementation measures to best incorporate the traditional residential neighborhood with Harvard’s Institutional Master Plan. Within its development framework recommendation, the CWP designated the exact location of the Site as a major entry point in need of pedestrian improvements. See **Figure 3-16** for greater detail of this designation. The Project and its community benefits of an improved pedestrian experience and new transportation options are consistent with the goals of the CWP and cater-well to serving as a pedestrian- and biker-friendly entry point to the North Allston-Brighton neighborhood.

The Multimodal Project started in 2014 to develop a concept for the replacement of the Allston Interchange, the area directly across Cambridge Street from the Site. In 2016, the BPDA prepared a Placemaking Report to establish placemaking standards that are specifically intended to provide input and guidance on key aspects of the infrastructure improvements being planned by MassDOT. The Placemaking Report identified five placemaking categories which would be essential for fostering urban growth this area: Public Realm and Open Space; Mobility/Connectivity; Development Potential/Flexibility; Distinctive Place/Context Sensitivity; and, Energy Efficiency/Sustainability. The Project is consistent with each of these five categories established by the Placemaking Report by providing an active mix of residential housing, street-level community space and renewed public green space, which will both create pedestrian activity around the Site and enhance pedestrian and biking mobility in the neighborhood. By providing much needed urban revitalization and an enhanced pedestrian experience Lincoln Street, Cambridge Street, and the surrounding area, the Project will be a substantial contributor and gateway connector to the Multimodal Project’s vision of the area as a large, new mixed-use district in North Allston.

The Project is also consistent with the Allston-Brighton Mobility Study (“Mobility Study”). The Mobility Study was started in 2018 to improve mobility in the neighborhood by leveraging development opportunities to contribute to transportation infrastructure improvements. The Project proposes to improve the pedestrian realm through streetscape improvements and contribute to bicycle amenities in the neighborhood. The Project also plans to improve safety by narrowing the intersection of Lincoln Street at Empire Street to reduce vehicular speeds.

Figure 3-16 North Allston-Brighton Community-Wide Plan Overall Development Framework

OVERALL DEVELOPMENT FRAMEWORK



4.0 SUSTAINABLE DESIGN

4.1 Sustainable Design Background

The following section highlights the sustainable design elements incorporated in the preliminary design of the Project. As designed, the Project will meet the requirements of Article 37 and the City's Green Building requirements. The design and construction team for the Project includes LEED Accredited Professionals ("AP").

The proposed Building will incorporate sustainable principles into its design, construction, and continued operation activities to achieve a minimum of Silver level certifiability. The Project will adhere to standards incorporated in the United States Green Building Council's (USGBC) Leadership in Energy and Environmental Design ("LEED") Multifamily Midrise rating system (LEED MR V4).

4.1.1 *Compliance with Article 37*

The City's Article 37 requires the Project to achieve a minimum of 40 points, or the LEED Certifiable rating. As proposed, the Building incorporates exemplary sustainable design and construction principles into the Project. It is projected to achieve the LEED Silver certifiability. The preliminary LEED Scorecard is tracking 56 'yes' points and 39 'maybe' credits for a preliminary rating of Silver. The credits designated under the 'maybe' category will continue to be assessed as the Project progresses. A preliminary checklist is included at the end of this section.

4.2 LEED Overview

The following is a summary of LEED compliance for the Project.

4.2.1 *Integrative Process*

The Integrative Process ("IP") category facilitates communication between the many different parties belonging to the Project team. This communication ensures that the Project's desired goals are met throughout the entirety of the Building's design, construction, and operation.

Integrative Process Credits

IP: Integrative Process

2 Pt.

OPTION 1: At least four team members meet and have continuous meetings monthly. All meeting notes are to be distributed to the team

4.2.2 Location and Transportation

The Location and Transportation (“LT”) category aims to reduce the development outside of existing infrastructure, public transportation, and undeveloped land.

The Project is a redevelopment of an existing parking lot that is adjacent to existing utility lines and public transportation stops, as well as community resources and recreation spaces. Furthermore, the Site is outside of the FEMA flood plains. See **Figure 5-15** for the FEMA map. The Project is also designed to maximize the available lot area to achieve the Compact Development criteria.

Location and Transportation Credits

LT: Floodplain Avoidance

Prereq.

All previously developed sites automatically comply with this prerequisite. The Project is listed as a minimal flood hazard according to FEMA. See **Figure 5-15**.

LT: Site Selection

8 Pts.

OPTION 1: Path 1 - The lot is such that a minimum of 75% of the lot is previously developed. It is located atop an existing parking lot. See **Figure 2-1** for the existing parking lot. (4 pts.)

OPTION 2: Infill Development - The lot is such that at least 75% of the land within ½ mile of the Site is previously developed. (2 pts.)

OPTION 3: Open Space - The Site is within ½ mile of a publicly accessible open space of at least ¾ of an acre in size. (Library Park & Hooker-Sorrento Playground) (1 pt.)

OPTION 4: Street Network - The Project achieves a “Walk Score” of 90 at <https://walk.sc/2Jgvpx7>. Refer to Appendix B for the Walk Score results (1 pt.)

LT: Compact Development

3 Pts.

The Project achieves 3 points for having ≥ 80 units per acre.
80 units / 0.748 acres = 107 units/ acre. (3 pts.)

LT: Community Resources**2 Pts.**

Resilient Buildings Group (RBG) confirmed, at minimum, 12 community resources are within a half mile distance from the proposed Building's main entrance. The community resources are listed below:

1. CVS Pharmacy (Pharmacy)
2. Walter Brown Arena (Sports)
3. US Post Office (Postal office)
4. Model Hardware (Hardware store)
5. Honan-Allston Branch of the Boston Public Library (Library)
6. Eastern Bank (Bank)
7. People's Federal Savings Bank (Bank)
8. Trader Joe's (Grocery store)
9. Regina Pizzeria (Restaurant)
10. Azama Grill (Restaurant)
11. St. Anthony Elementary School (School)

See **Appendix 4** for the Community Resources Map.

LT: Access to Transit**2 Pts.**

The Project is within ¼ mile of 6 bus stops and within ½ mile of Cambridge Street and Brighton Ave MBTA stops, the Harvard Avenue stop on the Green Line subway, and the Boston Landing commuter rail station.

4.2.3 Sustainable Sites

The Sustainable Sites ("SS") category ensures that the Project sustainably integrates the built and natural worlds. A comprehensive erosion control plan will be implemented during construction to reduce the negative impacts on the Site and water shed. The Landscape Design will utilize vegetation that is native and drought tolerant.

The Building is designed to limit its heat island effect through the installation of high albedo hardscapes and roofing materials.

Rainwater management is an essential component of the Building's design. The Site will feature an underground stormwater infiltration system that will capture a minimum of 1.25 inches of runoff over the impervious areas.

Sustainable Sites Credits

SS: Construction Activity Pollution Prevention

Prereq.

Bohler Engineering is responsible for creating the Erosion and Sedimentation Control plan. Key features include:

- Erosion Control Barriers will be placed around the perimeter of the Site. These Erosion Control Barriers will be inspected daily and kept in good condition.
- Silt Sacks to be installed in existing catch basins prior to construction and to be cleaned and maintained during construction.
- Construction Access Drive shall be crushed stone to minimize mud from being tracked onto roadways.
- Contractor to employ measures to control dust during construction. All inactive soil piles shall be kept covered and moist to limit dust generation.

SS: No Invasive Plants

Prereq.

Bohler Engineering will prepare a Landscape Plan. The Landscape Plan will not include any plants listed as invasive by the Massachusetts Invasive Plants Advisory Group. See **Figure 3-15** for the Landscape Plan.

<http://www.massnrc.org/mipag/invasive.htm>

SS: Heat Island Reduction

2 Pts.

The team is designing the Project to comply with Option 2: Nonabsorbent Materials. The Solar Reflectance of all hardscapes is to be at least 0.28 and the roof will have an SRI of no less than 0.78 when calculated based on ASTM E 1980. (2 pts.)

SS: Rainwater Management

3 Pts.

The Project is using Case 1: Low Impact Development techniques including underground infiltration to treat and collect rainwater runoff. The underground stormwater infiltration system is being designed to capture 1.25 inches of rainwater runoff minimum.

SS: Nontoxic Pest Control

2 Pts.

Qualifying measures to be used include (1/2 pt. each, 2 pts. max.):

- Seal exterior cracks, joints, etc. and install pest-proof screens
- Install no wood to concrete connections
- Use non-cellulosic wall structure
- Use solid concrete foundations or pest-proof masonry walls
- Project is including IPM policy and guidance in Tenant Manuals, as required.

4.2.4 **Water Efficiency**

The Water Efficiency (“WE”) category aims to holistically reduce the amount of water used indoors and outdoors on the Site.

The proposed Building will utilize efficient irrigation methodology to ensure minimal outdoor water waste. The landscape design will utilize techniques to reduce the amount of irrigation needed, as well as employ a high-efficiency drip irrigation system.

Each apartment is expected to achieve a 35% water reduction from high-efficiency toilets and plumbing fixtures. There will be water sub-meters for each unit in order to help track demand and productivity and also to identify leaks.

Water Efficiency Credits

WE: Water Metering

Prereq.

A water meter will be installed to meter water usage for the entire Building.

WE: Total Water Use

6 Pts.

A high-efficiency irrigation system will be used to irrigate landscaping on the Site. The Project is pursuing the total water use performance path for the credit. A 35 percent water reduction is expected.

The following measures are planned for interior water use:

- 1.28 gallon per flush toilets
- 1.5 gpm sinks
- 1.5 gpm shower heads

4.2.5 **Energy and Atmosphere**

The Energy and Atmosphere (“EA”) category addresses the Building’s energy usage and performance. The proposed Building will meet Massachusetts’s Stretch Energy Code, which is a minimum energy use reduction of 10% from ASHRAE 90.1-2013.

The Project is designed to utilize improved insulation, windows, efficient HVAC and improved lighting power density to achieve the reduction. The Project will also follow the ASHRAE Guideline 0: Commissioning Process for Buildings and Systems.

Each of the suites and studios will have a separate energy meter in conjunction to the Building’s master meter. Additionally, the Building’s domestic hot water system is designed to transport hot water efficiently by strategically placing plumbing fixtures near hot water heaters.

At completion of construction, the Property Manager will be provided with an Operations and Maintenance Manual to guarantee the Building is operated correctly and efficiently.

Energy and Atmosphere Credits

EA: Minimum Energy Performance

Prereq.

The Project will reduce total energy use by a minimum of 10% over the baseline of ASHRAE 90.1-2013. The Project will utilize improved insulation, windows, efficient HVAC and improved lighting power density to achieve the reduction.

This prerequisite also requires the Project's central HVAC systems be commissioned. The following Option 2 required items will meet this requirement:

1. Duct Leakage Testing
2. Central HVAC Commissioning
3. Review of air barrier and compartmentalization details in drawings and specs
4. Inspection of Energy Star Thermal Enclosure Checklist items

EA: Energy Metering

Prereq.

As required, the Project is including an electric meter for each residential unit and a gas meter for the entire Building.

EA: Education of Homeowner, Tenant or Building Manager

Prereq.

An Operations and Maintenance Manual will be prepared and will include the following items as required:

1. LEED Checklist
2. Energy Star Checklists
3. Equipment and Appliance Manuals
4. General information about conserving resources
5. Guidance on green cleaning, water efficient landscaping, IPM, lighting and appliance selection and green power options.

As required, a minimum 1-hour walkthrough will be conducted for the Property Manager.

EA: Annual Energy Use

5 Pts.

Preliminary energy modeling shows expected energy use reduction of by 12% (from ASHRAE 90.1-2013) to earn 5 points for this credit. The Project will utilize improved insulation, windows, efficient HVAC and improved lighting power density to achieve the reduction. (5 pts.)

EA: Efficient Hot Water Distribution**2 Pts.**

Using Option 1, the Project is keeping pipe runs from the water heaters to the fixtures under 43' for 1/2" piping and under 21' for 3/4" piping for 2 points. (2 pts.)

4.2.6 Materials and Resources

The Materials and Resources (MR) category focuses on reducing embodied energy associated with the production of materials used in the building's construction. Although the Project is not pursuing the Energy Star Program path, the Project will meet the requirements of and complete the Energy Star for Homes version 3, water management system builder checklist.

The Project will utilize concrete, drywall, and framing materials that are locally produced. Furthermore, materials with recycled content, FSC certified wood, fly ash concrete and/or products from manufacturers that participate in an Extended Producer Responsibility program will be included in the Project construction.

During construction, a waste diversion plan will be created and implemented to reduce waste by using a minimum of 60% from the LEED baseline waste amount.

Materials and Resources Credits**MR: Certified Tropical Wood****Prereq.**

All wood in the Building will either be non-tropical, reused or reclaimed, or certified by the Forest Stewardship Council as required.

MR: Durability Management**Prereq.**

The following required moisture control measures have been incorporated into the design:

- Non-paper faced backer board is used behind tubs / showers.
- Water resistant flooring will be used in Kitchens, Bathrooms, Laundry Rooms and entry ways.
- Tank water heaters, if used, and clothes washers will have a drain pan or automatic water shut offs.
- Clothes dryers will be vented to outdoors.

MR: Durability Management Verification**1 Pt.**

As the Verification Team/Green Rater, RBG will inspect and verify that all the measures in the Energy Star Water Management System Builder Checklist have been completed. (1 pt.)

MR: Environmentally Preferable Products

2 Pts.

OPTION 1: The Project is pursuing 1 point for Local Production of Concrete Aggregate, Framing and Drywall. (1 pt.)

OPTION 2: The Project is pursuing at least 1 more point for products containing recycled content, FSC certified wood, fly ash concrete and/or products from manufacturers that participate in an Extended Producer Responsibility program. (1 pt.)

MR: Construction Waste Management

1 Pt.

A Construction Waste Management Plan will be created, and construction waste will be reduced by 60% from the LEED Baseline (212,667 lbs). Mandatory waste recycling will be implemented during construction. (1 pt.)

4.2.7 Indoor Environmental Quality

The Indoor Environmental Quality ("EQ") category promotes occupant health by combining prescriptive and performance measures to eliminate or reduce hazards found in the built environment.

The proposed Building and its garage will be designed to meet the ASHRAE 6.2-2010 ventilation standard. The proposed garage will not house any air-handling equipment servicing the Building and all penetrations between the garage and the interior space will be properly sealed. Furthermore, no unvented combustion appliance will be installed in the Building and each unit will have a carbon monoxide detector.

All mechanical ventilation systems will be equipped with a minimum MERV 8 filtration media. To eliminate occupant exposure to unwanted tobacco smoke, smoking will be prohibited within 25 feet of the Building. Airborne contaminant transfer between each unit will be limited by reducing the air leakage of each unit to 0.3 cfm/ft² of shell area.

During construction, all ductwork will be sealed to prevent contaminant spread when the Building mechanical systems are in operation.

Indoor Environmental Quality Credits

IEQ: Ventilation

Prereq.

All applicable spaces are being designed to meet the ASHRAE 62.2-2010 Ventilation Code. Fresh air is being supplied to all apartments via roof mounted energy recovery ventilators. Bathrooms and kitchens are being exhausted as required.

IEQ: Combustion Venting**Prereq.**

- Carbon Monoxide detectors will be in each unit.
- No unvented combustion appliances will be installed.

IEQ: Garage Pollutant Protection**Prereq.**

Any air handling equipment will be placed outside of the fire rated envelope of the garage. Any penetrations from the garage into conditioned spaces will be tightly sealed.

IEQ: Radon Resistant Construction**Prereq.**

This prerequisite applies to projects in the US Environmental Protection Agency ("EPA") Radon Zone 1 only. Boston is in Suffolk County which is considered Zone 3 by the EPA Radon Zone Map, which means Radon Resistant Construction is not required per LEED. The Project is utilizing radon resistant construction as good practice nonetheless. These include garage under majority of the Building and sub-slab ventilation with vapor barrier in other locations.

IEQ: Air Filtering**Prereq.**

In-unit Fan Coils will utilize MERV 8 filters at a minimum. Mechanically supplied outdoor air will have MERV 8 filters at a minimum.

IEQ: Environmental Tobacco Smoke Control**Prereq.**

Smoking inside the Building will be prohibited via tenant leases. Any outdoor smoking areas, if included, will be at least 25 feet away from operable windows and doors.

IEQ: Compartmentalization of Units**Prereq.**

The design will include details showing how each unit is compartmentalized from other units and the outdoors. RBG will be conducting mid-construction blower door testing to guide the construction team with air sealing details and will conduct the required final testing at the Project's end to confirm the allowable maximum leakage of 0.30 cfm50/SF of shell area is not exceeded.

IEQ: Enhanced Outdoor Air Ventilation**2 Pts.**

The Project is using central Heat / Energy Recovery Ventilators to meet this credit. ASHRAE 62.1-2010 ventilation rates will not be exceeded by more than 10%. (2 pts.)

IEQ: Contaminant Control**0.5 Pt.**

The Project is pursuing Option 3: Duct work will be protected from debris during construction and a pre-occupancy flush lasting at least 48 hours will be conducted. (0.5 pt.)

IEQ: Balancing of Heating and Cooling Distribution Systems **2 Pts.**

The Project is attempting two options for the Forced Air Systems Path.

OPTION 1: Apartments under 1200 SF in MF buildings meet this by having a single thermostat. All apartments in the Project are under 1200 SF. (1 pt.)

OPTION 2: A Testing and Balancing (TAB) Contractor will test all flow rates for heating and cooling distribution and confirm that they are within 20% of specified rates. (1 pt.)

IEQ: Enhanced Compartmentalization **3 Pts.**

With the mid-construction testing described above, the project is attempting to achieve 0.23 cfm50/SF of shell area as an enhanced air tightness target. (3 “maybe” pts.)

IEQ: Enhanced Combustion Venting **2 Pts.**

OPTION 1: The Project plans to install a gas fired fireplace. The fireplace will be EPA certified as required for the credit. (2 pt.)

IEQ: Enhanced Garage Pollutant Protection **1 Pt.**

The garage will include a ventilation system satisfying ASHRAE 62.1-2010. (1 pt.)

IEQ: Low-Emitting Products **3 Pts.**

The team anticipates achieving 0.5 points for each of the following products that meet the requirements of CA Section 01350: Site-applied interior paints and coatings, Flooring, Insulation, and Site-applied adhesives and sealants. In addition, compliant composite wood containing Ultra Low Emitting Formaldehyde (ULEF) will be used for 1 point. (3 pts.)

IEQ: No Environmental Tobacco Smoke **1 Pt.**

Smoking is prohibited within apartments. The lease will state this and RBG will confirm its inclusion. (1 pt.)

4.2.8 Innovation

The Innovation Credit category recognizes sustainable practices or features that are forward-thinking and innovative. The proposed Building achieves the credit category prerequisite or conducting a Preliminary Rating at the start of the Project. Additional Innovation Credits will be pursued as the Project progresses.

Innovation and Design Process Credits

ID: Preliminary Rating **Prereq.**

A LEED for Mid-Rise Preliminary Rating facilitated by RBG was conducted on 5/08/19 at HDS Architecture in Cambridge, MA. The team reviewed the Rating System requirements and 53 “likely yes” points were identified putting the Project in the “SILVER” category.

ID: Innovation

1 Pt.

Up to 5 additional Innovation or Exemplary Performance points may be earned by LEED for Mid-Rise projects. At this stage the team is exploring meeting at least one of the yet-to-be-determined Innovation or Exemplary Performance point. (1 pts.)

4.2.9 *Regional Priority*

The Regional Priority credit category is important because many environmental issues are particular to the Building’s location. The Project will achieve the Access to Transit and Non-Toxic Pest Control Credits, both designated as Regional Priority Credits.

RP: Regional Priority Credits

1-4 Pts.

Based on zip code 02134’s LEED Regional Priority credits, the Project anticipates two additional points for having achieved each of the following credits above:

- Access to Transit (1 pt. threshold)
- Non-Toxic Pest Control (with 2 pt. threshold) (2 pts.)

4.2.10 *Climate Change Preparedness and Resiliency*

The BPDA’s Climate Change Preparedness and Resiliency Checklist has been filled out by the project team. See **Appendix 2** for the completed checklist.

4.2.11 *Addressing Anticipated Sea Level Rise and Flooding*

The Project is not located within any flood zones. See **Figure 5-15** for the FEMA Map.

4.2.12 *Addressing Extreme Weather and Heat Events*

The Project will reduce existing peak rates and volumes of stormwater runoff from the Site by introducing new greenspace and infiltrating the first 1.25 inches of rainfall from the impervious areas. The Project will also encourage groundwater recharge by infiltrating this stormwater via a subsurface infiltration system.

5.0 ENVIRONMENTAL PROTECTION

5.1 Introduction

This section focuses on how the Project will impact the surrounding environment. This review focuses on potential environmental impacts and how the Project will mitigate and manage those impacts. The following is a list of environmental areas of concern:

- Wind
- Shadow
- Daylight
- Solar Glare
- Air Quality
- Noise
- Flood Zones
- Water Quality
- Geotechnical
- Solid and Hazardous Waste
- Construction Impacts/Construction Management Plan

5.2 Wind

5.2.1 *Introduction*

A qualitative wind study was performed to assess the potential pedestrian wind conditions for the proposed Project. The Project consists of one six-story co-living residential rental Building. The Project also includes an enclosed parking garage. The objective of this assessment is therefore to provide a qualitative evaluation of wind comfort conditions and recommend mitigation measures, if necessary.

This qualitative assessment is based on the following:

- A review of regional long-term meteorological data;
- Preliminary building design drawings, and
- Engineering judgment and knowledge of wind flow patterns.

This qualitative approach provides a screening-level estimation of potential wind conditions.

5.2.2 *Project Layout*

As shown in **Appendix 5-A, Figure 1**, the Project is a proposed six-story residential Building, which will be built on top of the existing parking lot. The Project will have a

courtyard along a portion of the north-side of the Site, and the main entrance will face west into the courtyard along the northeastern portion of the Building. To the north of the Site is Lincoln Street and along with several residential buildings and a parking lot flanked by two small commercial buildings. To the east of the Site is Lincoln Street along with several residential buildings and small commercial buildings. To the south of the Site is Cambridge Street and green space followed by Interstate 90 ("I-90"). To the west of the Site is greenspace and I-90. The buildings to the north and west will shelter the courtyard on the north-side of the Site from the prevailing west/northwesterly winds in the winter and spring. The buildings to the north and east, in addition to the shape of the eastern area of the proposed Building, will shelter the courtyard from the gusty northeasterly winds in the spring, summer and fall. The courtyard will be protected by the proposed Building from prevailing southeasterly winds in the summer and fall.

5.2.3 Meteorological Wind Conditions

The most recent five years of wind direction and wind speed data measured at Boston-Logan International Airport between 2014 and 2018 were analyzed for the spring (March to May), summer (June to August), fall (September to November) and winter (December to February) seasons. **Appendix 5-A, Figure 2** graphically depicts the distributions of wind frequency and directionality for these four seasons and for the annual period. The predominant wind directions are from the west/northwest and southwest. Although not as frequent, northeasterly winds correspond with higher wind speeds, especially during the fall. Therefore, winds from the west/northwest, southwest and northeast directions are considered most relevant for this qualitative analysis, while winds from other directions are also considered in this analysis.

5.2.4 BPDA Wind Criteria

The BPDA wind comfort criteria include two standards for assessing the relative wind comfort of pedestrians. The first criterion states that an effective gust velocity (hourly mean wind speed +1.5 times the root mean square wind speed) of 31 mph should not be exceeded more than one percent of the time. The second set of criteria is used by the BPDA to determine the acceptability of specific locations. This set of criteria is used to determine the relative level of pedestrian wind comfort for activities such as sitting, standing, or walking. The criteria are expressed in terms of point of reference for the 1-hour mean wind speed exceeded 1% of the time (i.e., the 99-percentile mean wind speed) and are presented in **Table 5-1**.

Table 5-1 BPDA Wind Comfort Criteria

| Criteria Description | Wind Speed (mph) |
|---------------------------|-------------------|
| Dangerous | >27 |
| Uncomfortable for Walking | >19 and ≤ 27 |
| Comfortable for Walking | >15 and ≤ 19 |
| Comfortable for Standing | >12 and < 15 |
| Comfortable for Sitting | <12 |

Pedestrians on sidewalks will be active and wind speeds comfortable for walking are appropriate. Lower wind speeds comfortable for standing are desired for building main entrances where people tend to remain. For outdoor terraces, low wind speeds comfortable for sitting are desired during the summer. In other seasons, wind conditions in these areas may not be of a serious concern due to limited usage.

5.2.5 Potential Wind Conditions

As discussed in **Section 5.2.3**, winds are mostly from the northeast, southwest and west/northwest directions (**Appendix 5-A, Figure 2**). Winds from the northeast will generally be reduced at the courtyard by the residential buildings to the north and east. The shape of the Building will also assist with reducing gusty winds from the northeast. Winds from the southwest will generally be reduced at by the trees to the west and from blocking by the Building. Winds from the west/northwest will generally be reduced by the residential neighborhoods to the north. Although the courtyard and main entrance are slightly vulnerable to this wind direction, the shape of the eastern side of the Building will prevent wind from the west/northwest from channeling through the courtyard and into the Building entrance. The Project will include a line of trees along the perimeter of the Site, which will help to reduce wind conditions at the pedestrian level on sidewalks, in the courtyard, and at the entrance. **Appendix 5-A, Figure 3** shows the general wind flow patterns for the Site.

Vertical wind flows can also cause increased wind conditions at the ground due to “downwash effect” which could impact the courtyard, especially when winds are out of the southwest.

Building Courtyards and Entrances

A combination of the local wind climate, existing surroundings and the proposed Building design, were found to generally support conditions that are comfortable for walking, although there is potential for uncomfortable conditions at the Building corners during

the winter and spring seasons. Lower wind conditions are likely for the Site in the summer, but it may not be comfortable for sitting, especially around the exposed Building corners.

Since the Building is only six stories in height, the wind criterion is anticipated to be met. With the main entrance to the Building facing west, some uncomfortable conditions may occur due to the frequency and speed of westerly. However, the entrance will be somewhat removed from the corner of the Building, which will reduce the wind impacts from west/northwest winds channeling down the road, and easterly winds rounding the corner of the Building. Furthermore, the main entrance will be designed with a vestibule where patrons can wait indoors on windy and cold days, and wind will be prevented from channeling into the lobby.

As a result, suitable wind conditions are predicted around these entrances throughout the year. Trees are planned around the entrance and corners of the Building which will lessen wind conditions.

Sidewalks

Pedestrians using the sidewalks are typically active along Lincoln Street, and less active along Cambridge Street. Wind speeds for comfortable walking is expected to be met on all sidewalks along Lincoln Street. The sidewalk along Cambridge Street may be uncomfortable under southwesterly winds, especially around the southeast corner of the proposed Building. However, conditions are not expected to be worse than the current wind conditions with the existing open parking lot. Periodic wind gusts may occur around the Building corners. As discussed above, coniferous or deciduous trees will be planted along the perimeter of the Site, which will reduce the impacts of wind gusts around corners. Trees that keep their leaves reasonably well in the winter and spring will absorb wind energy throughout the year.

5.2.6 Conclusions

A qualitative wind study was performed to assess the potential pedestrian wind conditions for the Project. The results of the study predict that there will be suitable wind conditions for pedestrians using adjacent sidewalks and accessing the main entrance to the Building. However, uncomfortable wind conditions may occur along the Cambridge Street sidewalk, but not any worse than the current conditions with the existing open parking lot. Uncomfortable conditions may also occur at exposed Building corners. This will be minimized with planting of coniferous or deciduous trees around the perimeter of the Site.

5.3 Shadow

A shadow analysis was conducted for the Project to ensure that the proposed Building will not create adverse shadow impacts. **Table 5-2** identifies the dates and times for which shadow conditions have been simulated.

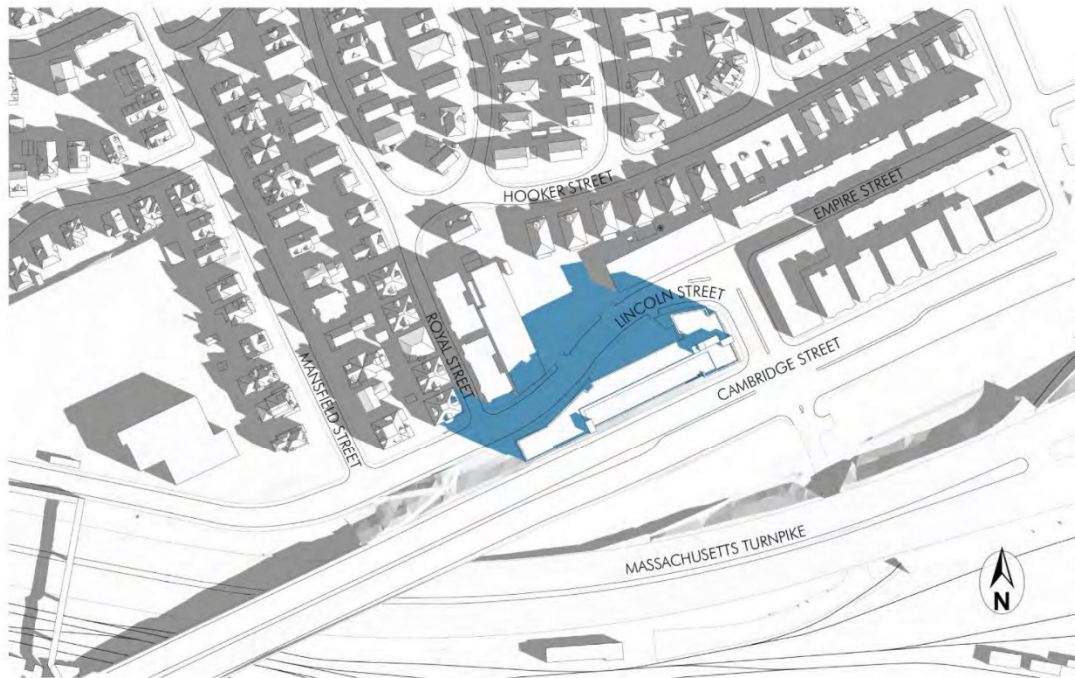
Table 5-2 Shadow Study and Times

| Date | Time |
|---|-------------------------------------|
| Vernal Equinox – March 21st | 9:00 AM, 12:00 PM, 3:00 PM, 6:00 PM |
| Summer Solstice – June 21st | 9:00 AM, 12:00 PM, 3:00 PM, 6:00 PM |
| Autumnal Equinox – September 21 st , EDT | 9:00 AM, 12:00 PM, 3:00 PM, 6:00 PM |
| Winter Solstice – December 21 st , EST | 9:00 AM, 12:00 PM, 3:00 PM |

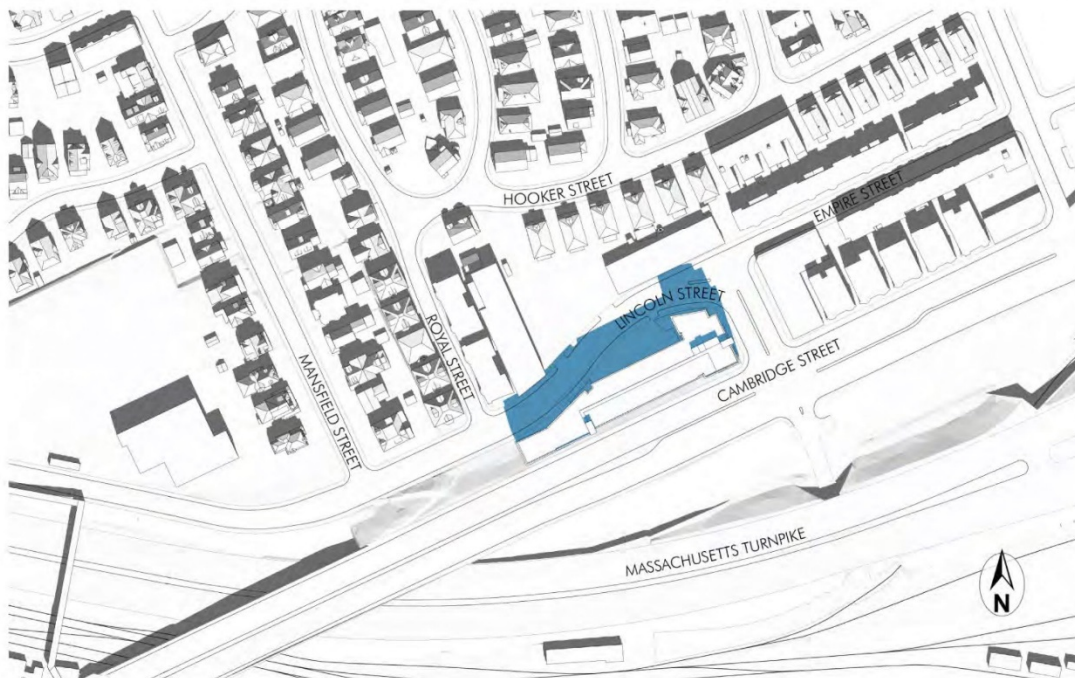
The study presents both the existing conditions and the proposed conditions. The following is in reference to the shadow study images shown in **Figure 5-1** through **Figure 5-6**.

Figure 5-1 Shadow Studies – Proposed Context (March Morning)

PROPOSED CONTEXT, MARCH 21st



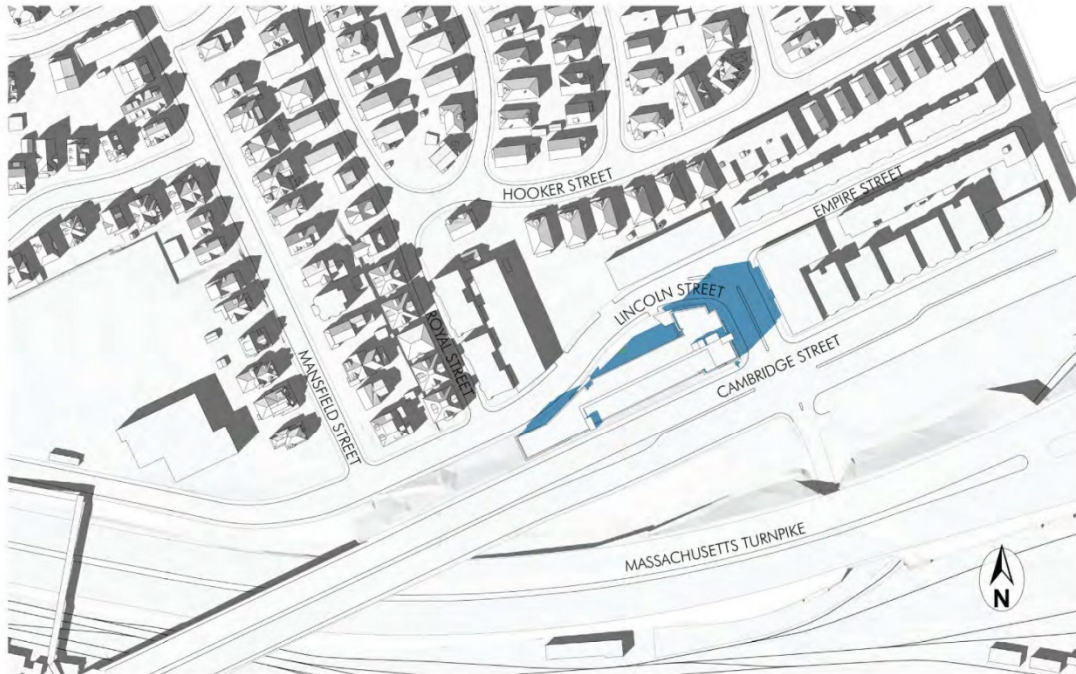
9 am



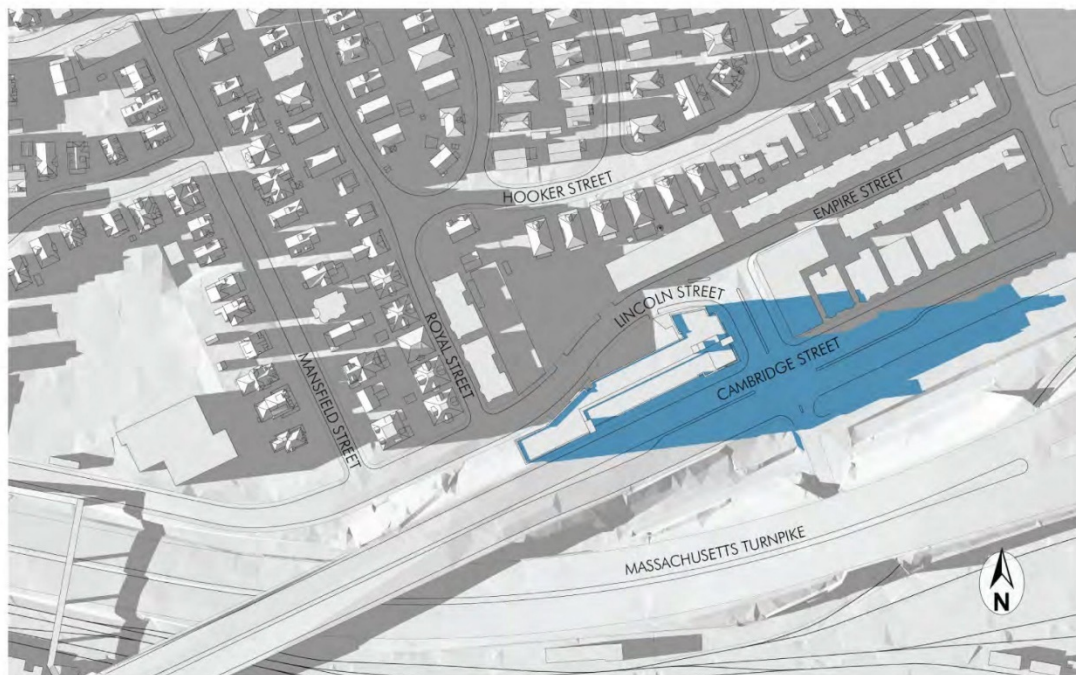
12 pm

Figure 5-2 Shadow Studies – Proposed Context (March Afternoon)

PROPOSED CONTEXT, MARCH 21st



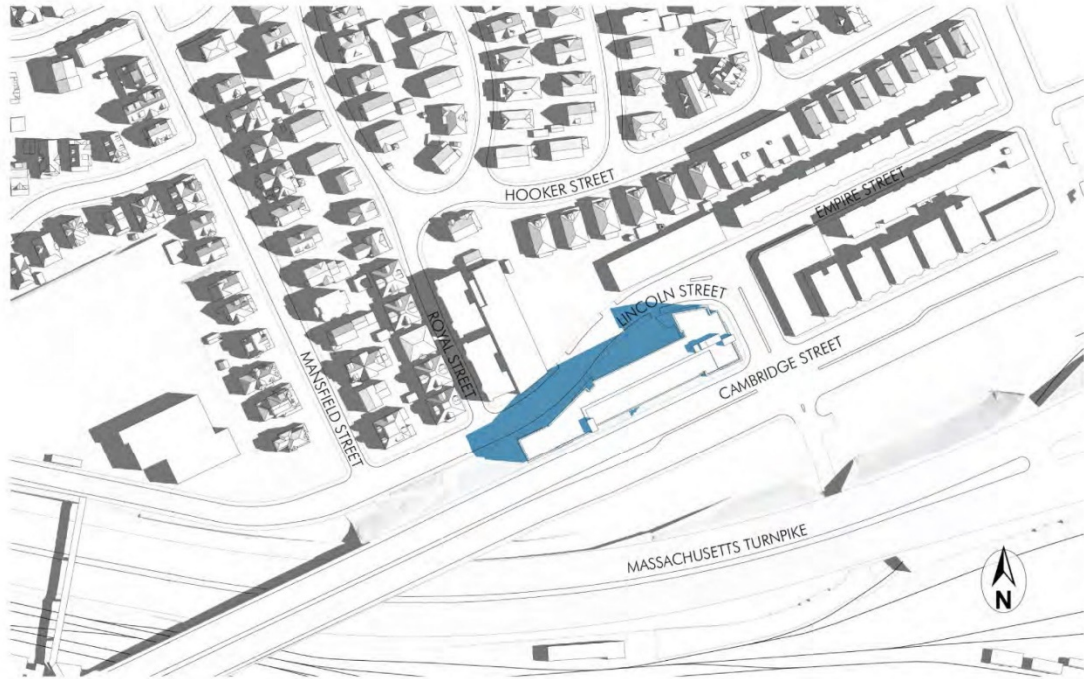
3 pm



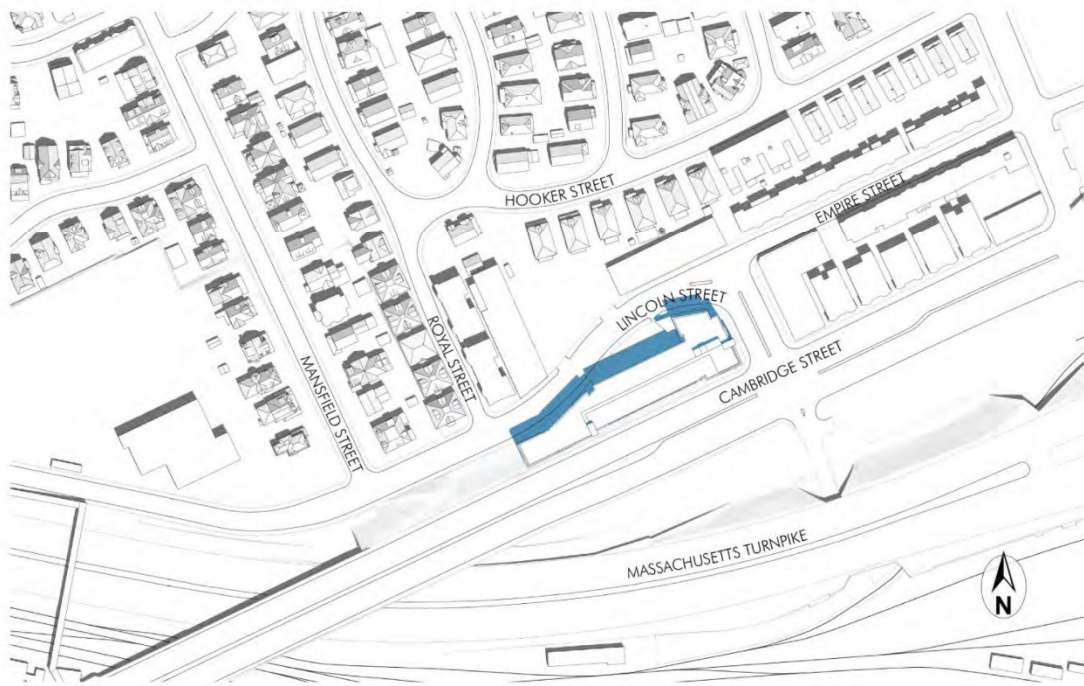
6 pm

Figure 5-3 Shadow Studies - Proposed Context (June Morning)

PROPOSED CONTEXT, JUNE 21st



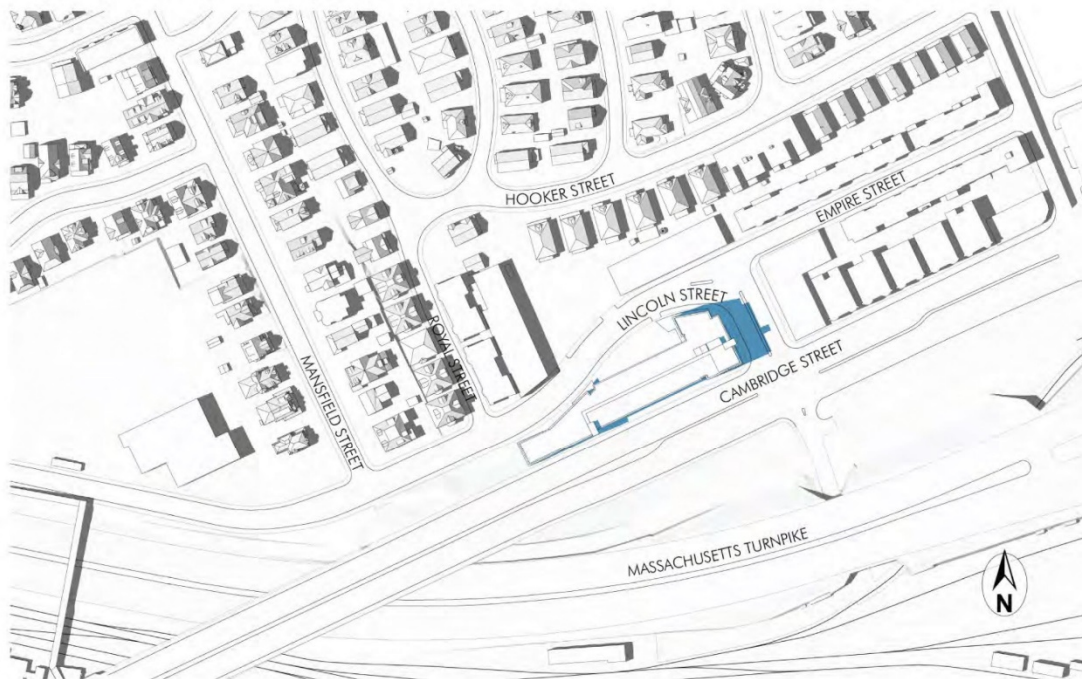
9 am



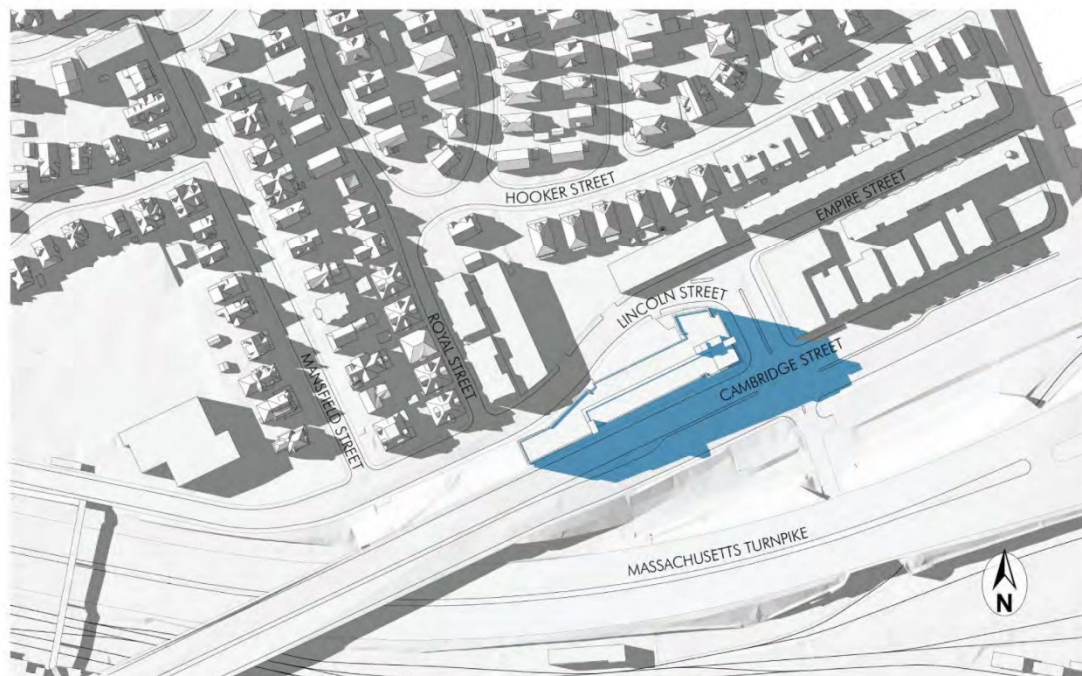
12 pm

Figure 5-4 Shadow Studies - Proposed Context (June Afternoon)

PROPOSED CONTEXT, JUNE 21st



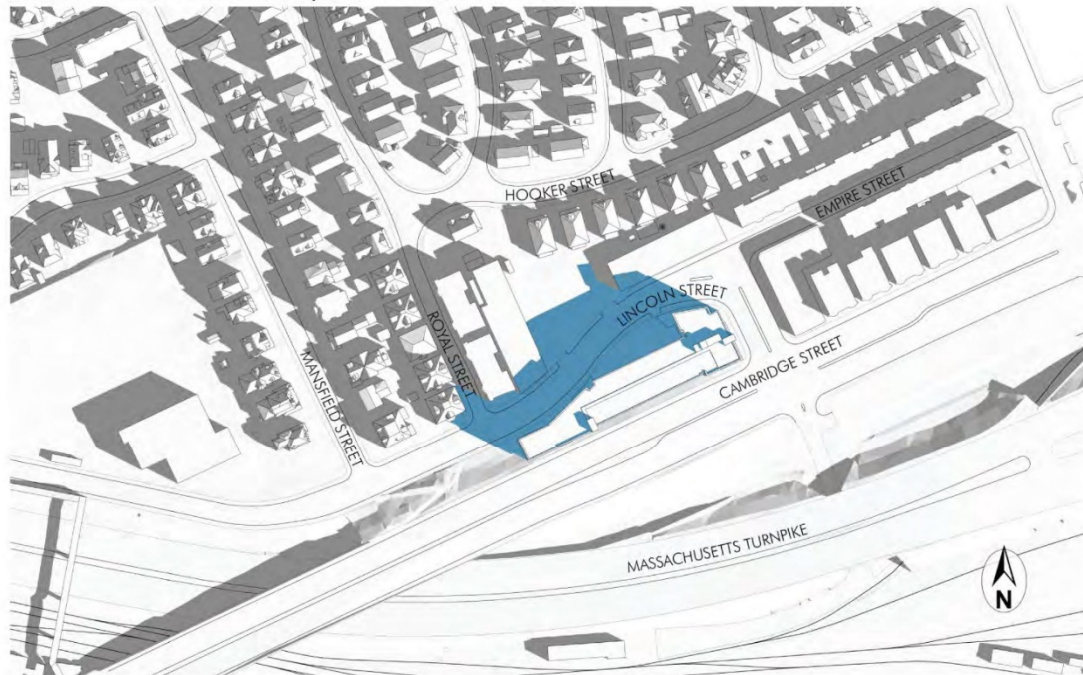
3 pm



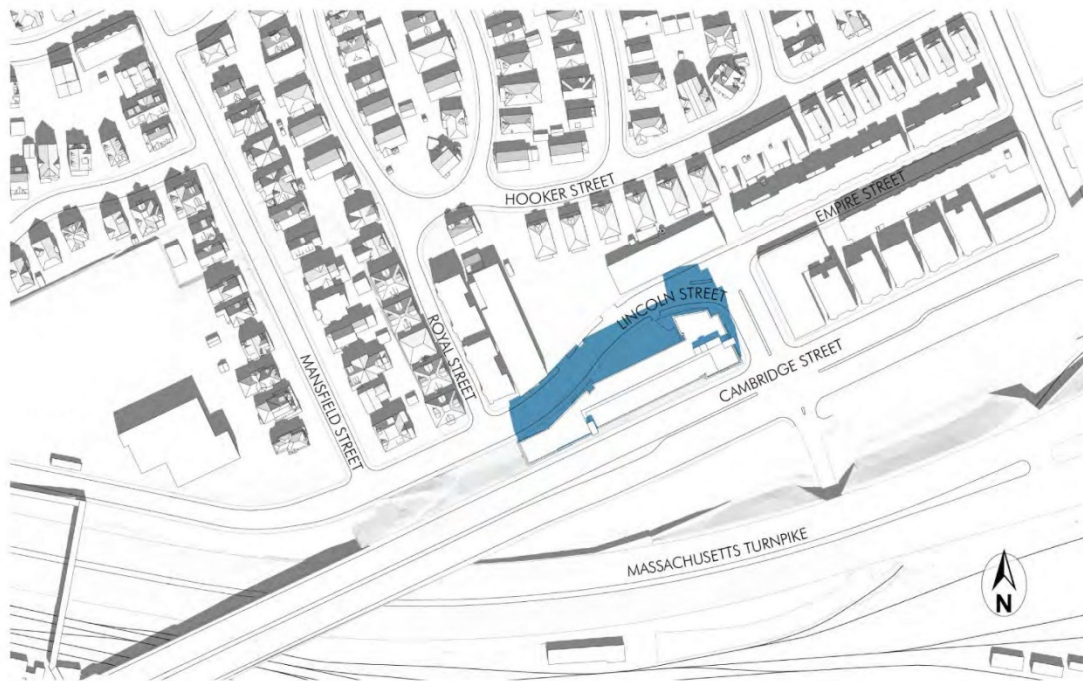
6 pm

Figure 5-5 Shadow Studies – Proposed Context (September Morning)

PROPOSED CONTEXT, SEPTEMBER 21st



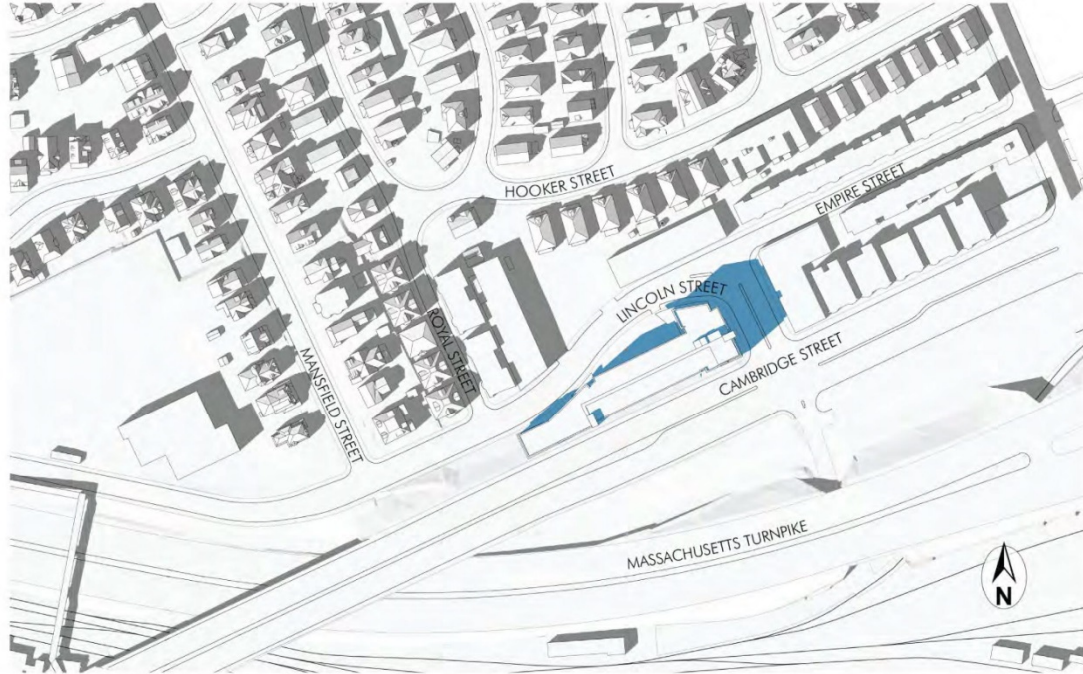
9 am



12 pm

Figure 5-6 Shadow Studies– Proposed Context (September Afternoon)

PROPOSED CONTEXT, SEPTEMBER 21st



3 pm



6 pm

Figure 5-7 Proposed Context (December Morning)

PROPOSED CONTEXT, DECEMBER 21st



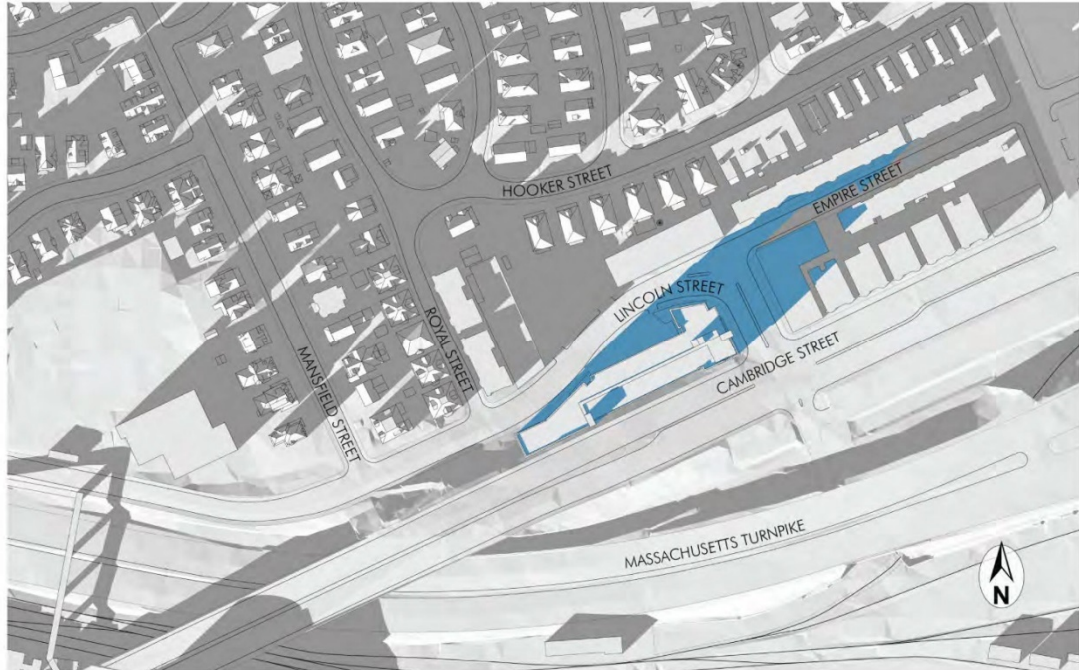
9 am



12 pm

Figure 5-8 Proposed Context (December Afternoon)

PROPOSED CONTEXT, DECEMBER 21st



3 pm

5.4 Daylight Analysis

This section describes the daylight coverage analysis at the Site based on a comparison of existing and proposed conditions. The analysis is a requirement of the Article 80 Large Project Review (Section 80B-2(c) of the City of Boston Zoning Code). The daylight analysis was prepared using the BRA's Boston Redevelopment Authority Daylight Analysis Program ("BRADA") and the architectural plans for the Project.

5.4.1 Summary

The analysis was completed at four locations along the perimeter of the Site on Cambridge Street, Lincoln Street, and the adjacent park area. At each location, there will be an increase in "skyplane" obstruction under the Build Condition. The results were expected and cannot be avoided when replacing an undeveloped parking lot with a building.

The results of the analysis are presented in **Figure 5-9** through **Figure 5-14**.

5.4.2 Analysis

The analysis was completed using the BRADA software provided by the BPDA, which was developed in 1985 by the Massachusetts Institute of Technology to evaluate the effects of building massing and materials on pedestrians on the public right of way. The analysis includes a calculation of the percentage of the skyplane that is obstructed for the existing and proposed conditions. The output of the model includes a numerical percentage of the daylight blockage, a block drawing of the faces that are modelled and a graphic that visually represents the obstructed skyplane.

The modelling is based on plans and elevations from HDS Architecture. Based on a discussion with the BPDA, the model was set up with non-reflective building materials, which simplifies the models and is more conservative.

The following views were analyzed and are shown in Figures "Existing Daylight Analysis Views" and "Proposed Daylight Analysis Views":

- View 1 – From Cambridge Street (facing northwest)
- View 2 – From Lincoln Street (facing southwest)
- View 3 – From Lincoln Street (facing southeast)
- View 4 – From park area (facing northeast)

5.4.3 ***Existing Condition***

The site is approximately 0.75 acres occupied by an existing parking lot with no structures to obstruct the skyplane.

View 1 represents the frontage along Cambridge Street with the existing parking lot in the background. The resulting skyplane blockage is 0.0%.

View 2 represents the northeast frontage of Lincoln Street with the existing parking lot in the background. The resulting skyplane blockage is 0.0%.

View 3 represents the northwest frontage of Lincoln Street with the existing parking lot in the background. The resulting skyplane blockage is 0.0%.

View 4 represents the southwest frontage of the Site along the park area with the existing parking lot in the background. The resulting skyplane blockage is 0.0%.

5.4.4 ***Proposed Condition***

The proposed condition consists of one six-story Building and associated green space.

View 1 represents the frontage along Cambridge Street with the proposed six-story Building in the background. The resulting skyplane blockage is 43.9%.

View 2 represents the northeast frontage of Lincoln Street with the proposed six-story Building in the background. The resulting skyplane blockage is 50.9%.

View 3 represents the northwest frontage of Lincoln Street with the proposed six-story Building in the background. The resulting skyplane blockage is 42.9%.

View 4 represents the southwest frontage of the Site along the park area with the proposed six-story Building in the background. The resulting skyplane blockage is 29.3%.

5.4.5 ***Conclusion***

As previously stated, constructing a building where no buildings exist will increase the skyplane blockage, which is the case in each of the studied views above. In conclusion, the Project is similar in size and scale to the other projects in the Allston neighborhood, and the daylight impacts will be further reduced when factoring in the Building's materials and glazing, which will provide a level of reflectance and improve the overall daylight experience.

Figure 5-9 Existing BRADA Views

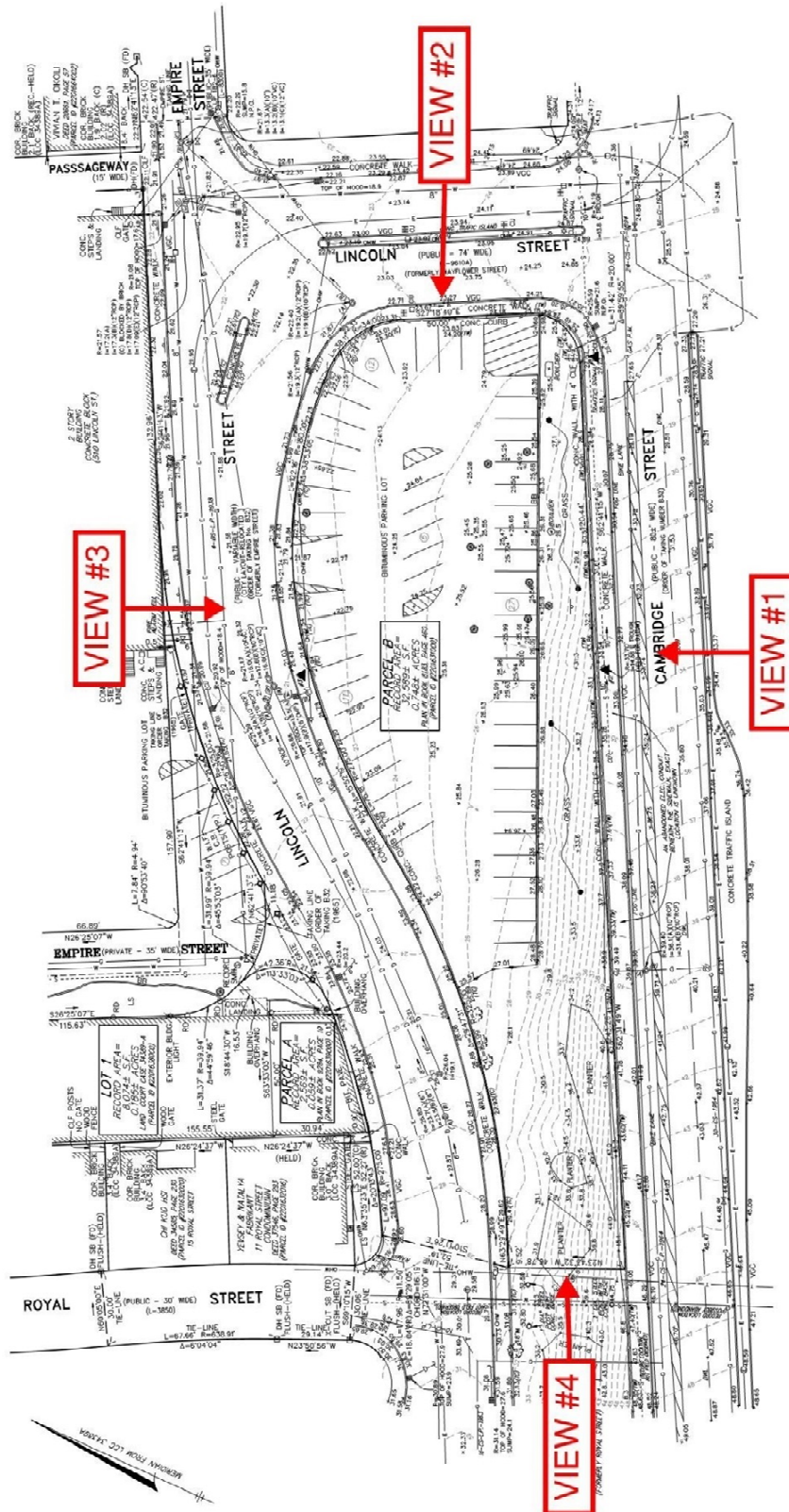
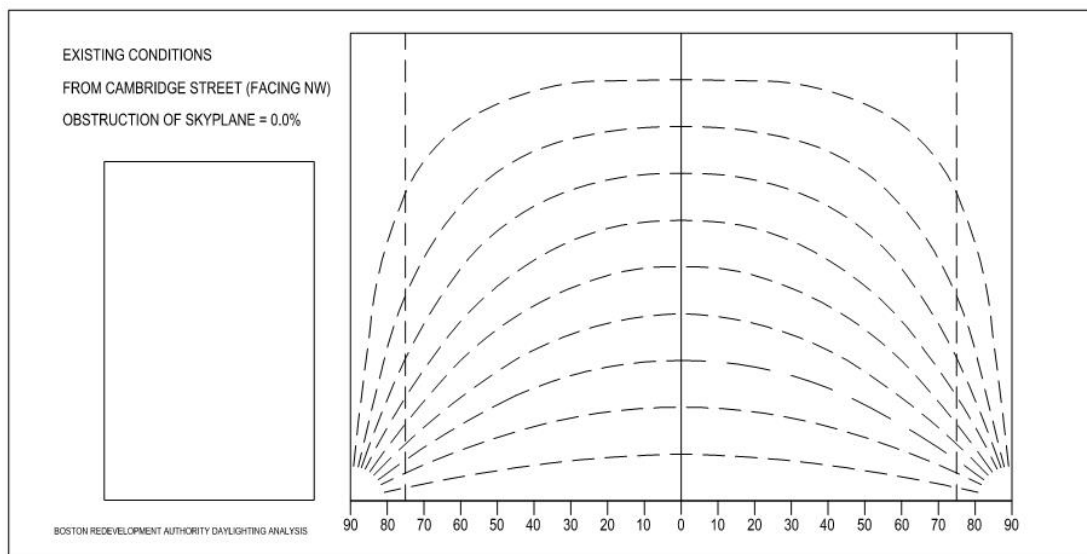
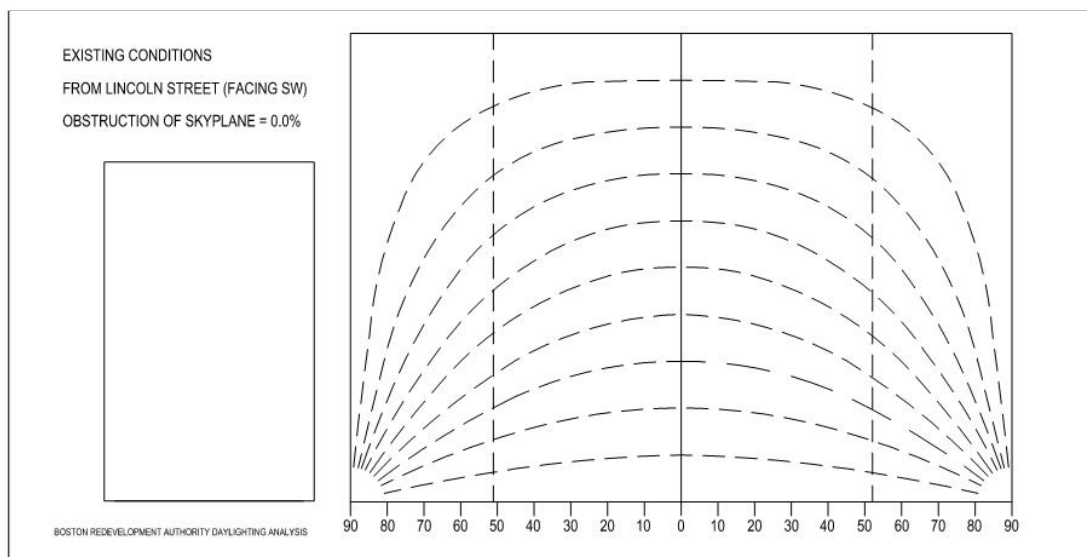


Figure 5-10 Existing Conditions View 1 and View 2

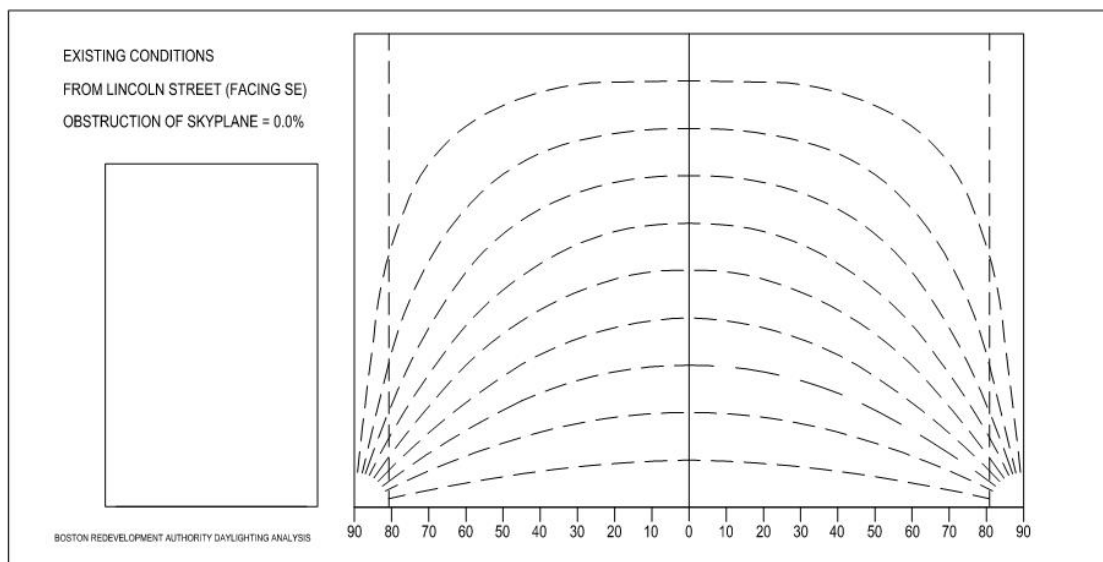


VIEW 1

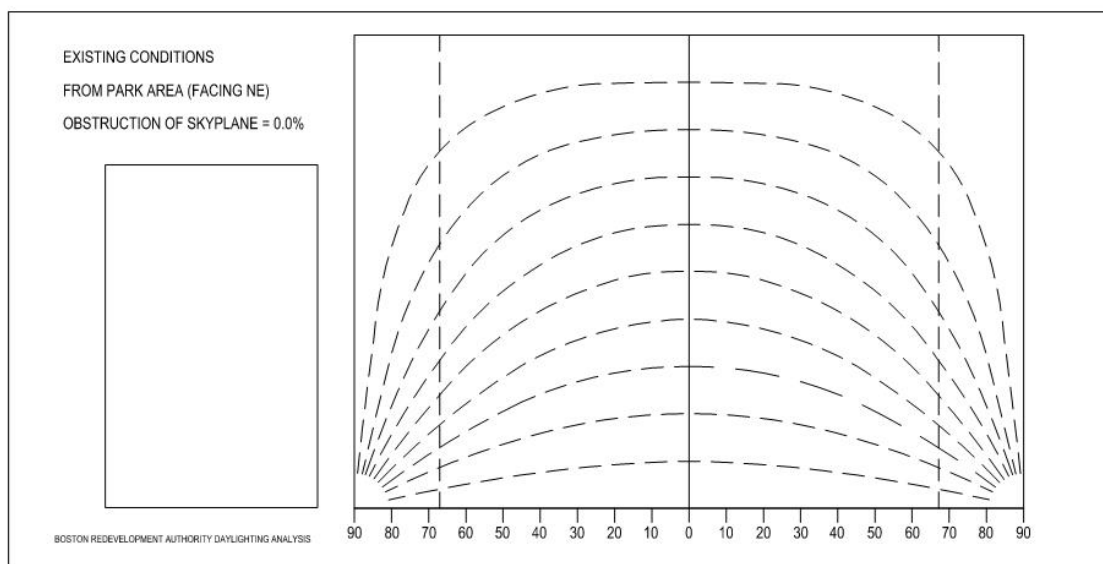


VIEW 2

Figure 5-11 Existing Conditions View 3 and View 4



VIEW 3



VIEW 4

Figure 5-12 Proposed BRADA Views

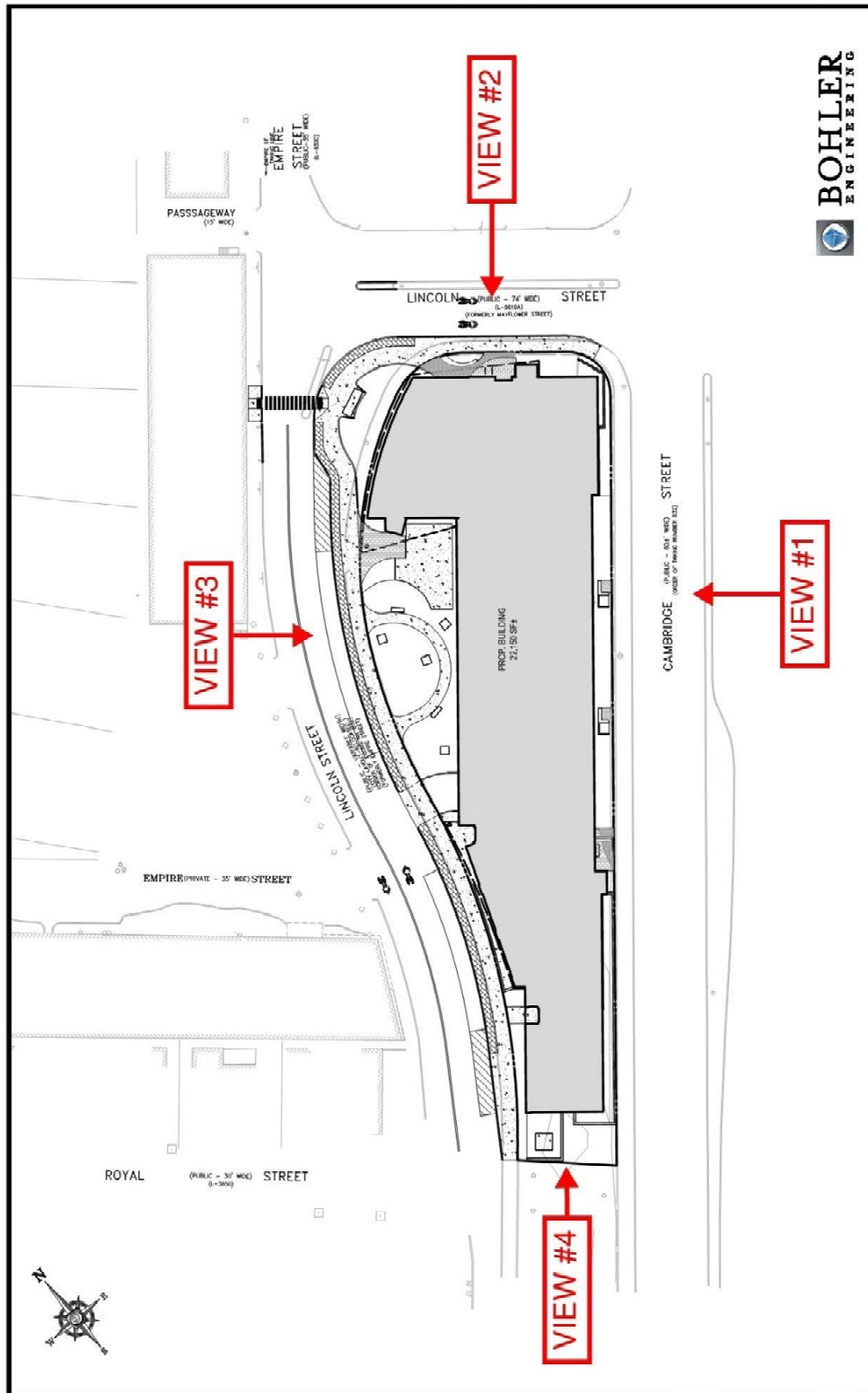
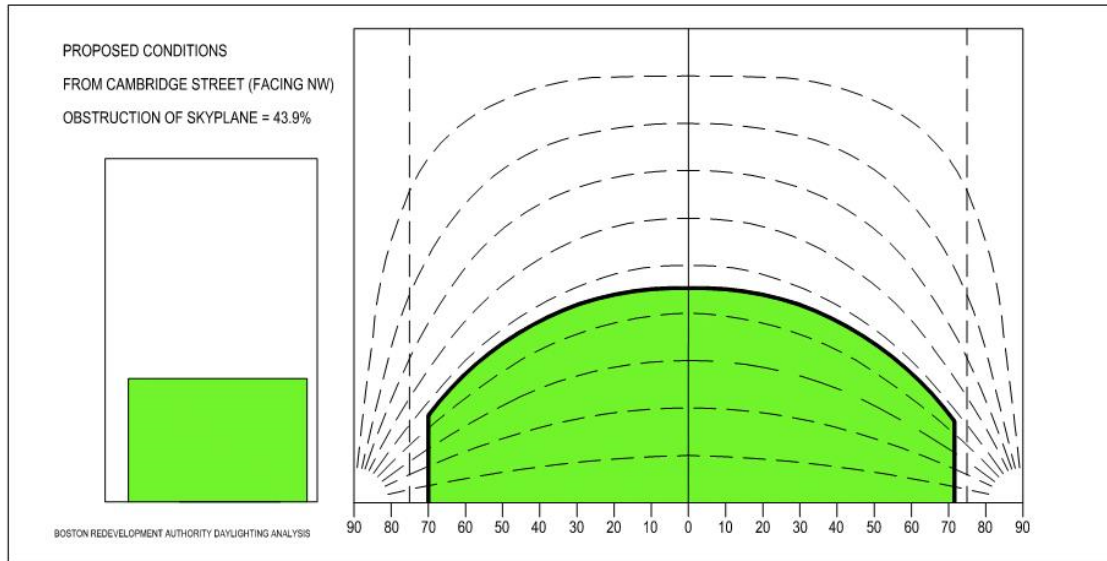
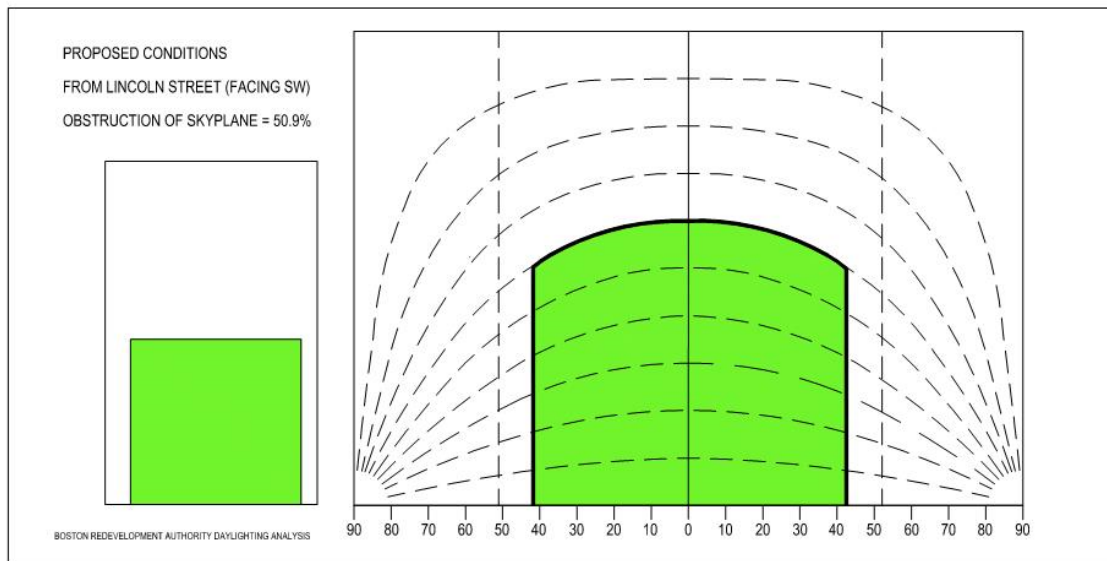


Figure 5-13 Proposed Conditions View 1 and View 2

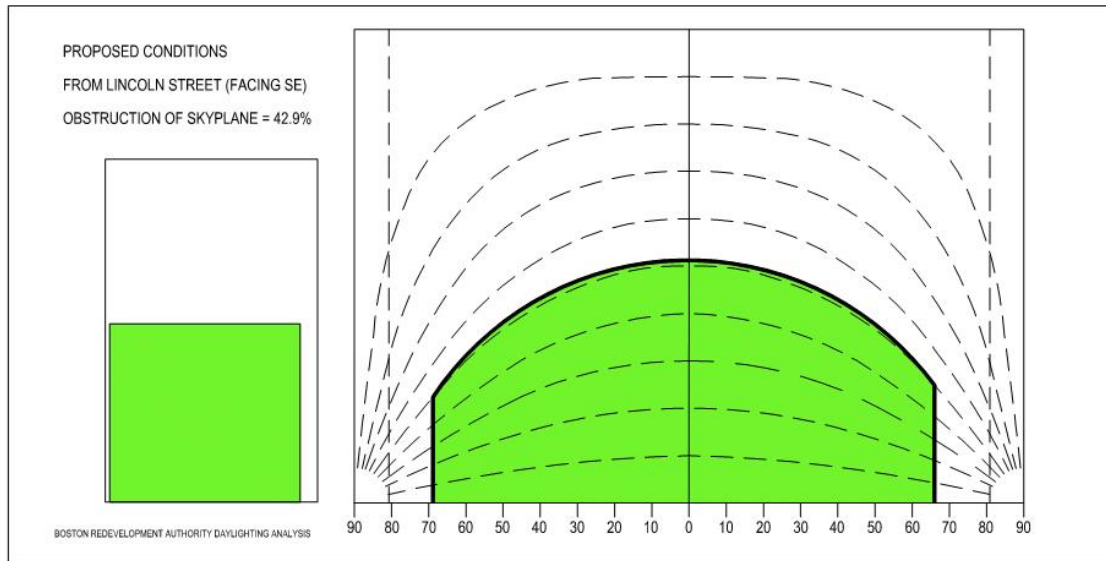


VIEW 1

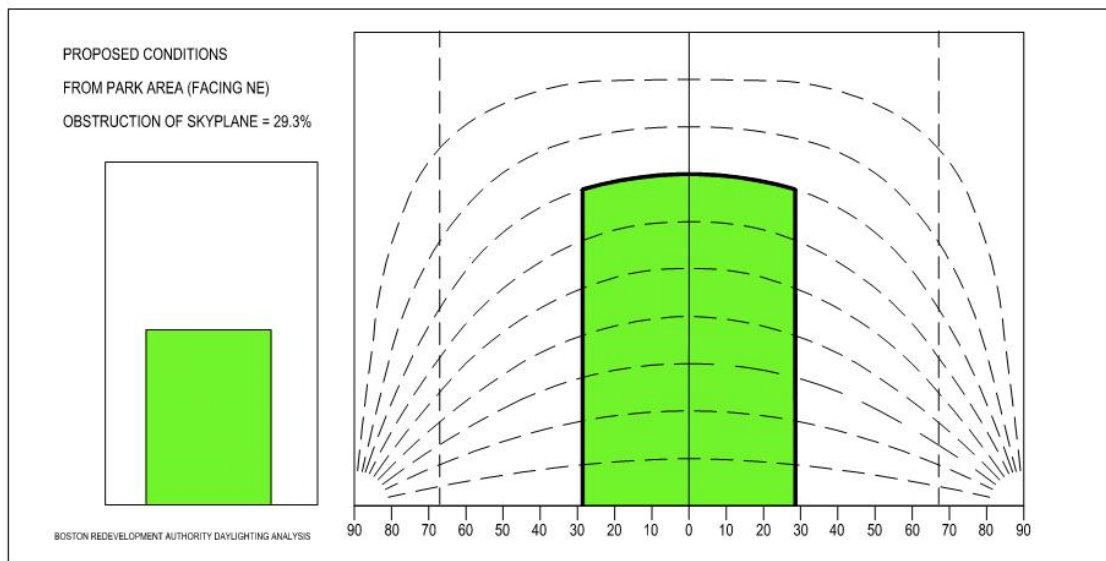


VIEW 2

Figure 5-14 Proposed Conditions View 3 and View 4



VIEW 3



VIEW 4

5.5 Solar Glare

Buildings with the Site will utilize high-performance materials and facades that are cognizant of the necessary balance of visual aesthetics, thermal performance, cost, heat gain and construction efficiency. The Project will comply with Article 37 of the Boston Zoning Code and will be “LEED Certifiable” per LEED Residential Mid-rises definitions. As such, all of the Building’s structures will incorporate significant efficiencies related to energy conservation into their design.

Further, the Proponent does not believe that there will be any solar glare issues resulting from material and façade choices. Glazing performance will balance the metrics of visible light transmittance, thermal insulation value and solar heat gain. Highly mirrored finishes or glazing with a high degree of reflectivity will not be used within the Site.

5.6 Air Quality

5.6.1 *Introduction*

Air quality analyses were performed for the Building, a one (1) six-story co-living residential rental building with an enclosed parking garage. These analyses consisted of: 1) an evaluation of existing air quality; 2) an evaluation of potential carbon monoxide (“CO”) impacts from the Project’s parking garage, and 3) a microscale CO analysis for intersections in the Project area that meet the BPDA criteria for requiring such an analysis.

5.6.2 *Background Concentrations*

The City is currently classified as being in attainment of the Massachusetts and National Ambient Air Quality Standards (“NAAQS”) for all of the criteria air pollutants except ozone (see **Table 5-3**). These air quality standards have been established to protect the public health and welfare in ambient air, with a margin for safety.

The Massachusetts Department of Environmental Protection (“MassDEP”) currently operates air monitors in various locations throughout the city. The closest, most representative, MassDEP monitors for carbon monoxide (CO), sulfur dioxide (SO₂), nitrogen dioxide (NO₂), fine particulate matter (PM_{2.5}), coarse particulate matter (PM₁₀), and lead are located at Kenmore Square and Dudley Square on Harrison Avenue, Boston, MA.

Table 5-4 summarizes the MassDEP air monitoring data, for the most recent available, complete, three-year period (2015-2017), that are considered to be representative of the Project area. **Table 5-4** shows that the existing air quality in the Project area is generally much better than the NAAQS. The highest impacts relative to a NAAQS are for ozone and PM_{2.5}. Ozone is a regional air pollutant on which the small amount of additional traffic

generated by this Project will have an insignificant impact. The Project's operations will not have a significant impact on local PM_{2.5} concentrations.

5.6.3 Air Quality Modeling Methodology and Results

Air quality dispersion modeling analyses consisted of: 1) an evaluation of potential carbon monoxide (CO) impacts from the operation of the Project's parking garage, and 2) a microscale CO analysis for intersections in the Project area that meet the BPDA criteria for requiring such an analysis. Emissions calculations and modeling approach for both air dispersion modeling analyses are presented below.

Table 5-3 Massachusetts and National Ambient Air Quality Standards (NAAQS)

| Pollutant | Averaging Time | NAAQS (µg/m ³) |
|---|--|--|
| Sulfur Dioxide (SO ₂) | 1-hour ^P 3-hour ^S Annual ^P (Arithmetic Mean) | 196 ^a 1,300 ^b 80 |
| Carbon Monoxide (CO) | 1-hour ^P 8-hour ^P | 40,000 ^b 10,000 ^b |
| Nitrogen Dioxide (NO ₂) | 1-hour ^P Annual ^{P/S} (Arithmetic Mean) | 188 ^c 100 |
| Coarse Particulate Matter (PM ₁₀) | 24-hour ^{P/S} | 150 |
| Fine Particulate Matter (PM _{2.5}) | 24-hour ^{P/S} Annual ^P (Arithmetic Mean) Annual ^S (Arithmetic Mean) | 35 ^d 12 ^{e,f} 15 |
| Ozone (O ₃) | 8-hour ^{P/S} | 137 ^g |
| Lead (Pb) | Rolling 3-Month Avg. ^{P/S} | 0.15 |

P = primary standard; S = secondary standard.

^a 99th percentile 1-hour concentrations in a year (average over three years).

^b One exceedance per year is allowed.

^c 98th percentile 1-hour concentrations in a year (average over three years).

^d 98th percentile 24-hour concentrations in a year (average over three years).

^e Three-year average of annual arithmetic means.

^f As of March 18, 2013, the U.S. EPA lowered the PM_{2.5} annual standard from 15 µg/m³ to 12 µg/m³.

^g Three-year average of the annual 4th-highest daily maximum 8-hour ozone concentration must not exceed 0.070 ppm (137 µg/m³) (effective December 28, 2015); the annual PM₁₀ standard was revoked in 2006.

Table 5-4 Representative Existing Air Quality in the Project Area

| Pollutant, Averaging Period | Monitor Location | Value ($\mu\text{g}/\text{m}^3$) | NAAQS ($\mu\text{g}/\text{m}^3$) | Percent of NAAQS |
|--------------------------------|---|---------------------------------------|---------------------------------------|---------------------|
| CO, 1-hour | Harrison Avenue, Boston | 2,758 (2.4 ppm) | 40,000 | 7% |
| CO, 8-hour | Harrison Avenue, Boston | 1,438 (1.3 ppm) | 10,000 | 14% |
| NO ₂ , 1-hour | Kenmore Square, Boston | 93.4 | 188 | 50% |
| NO ₂ , Annual | Kenmore Square, Boston | 47.5 | 100 | 47% |
| Ozone, 8-hour | Harrison Avenue, Boston | 120 | 137 | 87% |
| PM ₁₀ , 24-hour | Kenmore Square & Harrison Avenue, Boston | 30 | 150 | 20% |
| PM _{2.5} , 24-hour | Kenmore Square, Boston | 13.2 | 35 | 37% |
| PM _{2.5} , Annual | Kenmore Square, Boston | 6.3 | 12 | 52% |
| Lead, Quarterly | Harrison Avenue, Boston | 0.017 | 0.15 | 12% |
| SO ₂ , 1-hour | Kenmore Square, Boston | 10.8 | 196 | 6% |

Source: MassDEP, <http://www.mass.gov/dep/air/priorities/agreports.htm>, downloaded May 2, 2019.

Notes:

- (1) Annual averages are highest measured during the most recent three-year period for which data are available (2015 - 2017). Values for periods of 24-hours or less are highest, second-highest over the three-year period unless otherwise noted.
- (2) The eight-hour ozone value is the 3-year average of the annual fourth-highest values, the 24-hour PM_{2.5} value is the 3-year average of the 98th percentile values, the annual PM_{2.5} value is the 3-year average of the annual values – these are the values used to determine compliance with the NAAQS for these air pollutants.
- (3) The one-hour NO₂ value is the -year average of the 98th percentile values and the one-hour SO₂ value is the -year average of the 99th percentile values
- (4) The one-hour ozone standard was revoked by the US EPA in 2005; the annual PM₁₀ standard was revoked in 2006 and the 3-hour SO₂ standard was revoked by the US EPA in 2010.
- (5) Kenmore Square PM10 data not available in 2017 report. 2017 PM10 data is from Harrison Avenue.

5.6.3.1 Impacts from Parking Garage

The Project includes an enclosed ground level parking garage designed to provide parking spaces for 30 vehicles with the ability to add approximately additional thirty (30) spaces with a mechanical parking solution if necessary. An analysis of the worst-case air quality impacts from the proposed parking garage was performed (see **Appendix 5-B**). The procedures used for this analysis are consistent with U.S. EPA's Volume 9 guidance.¹ The objective of this analysis was to determine the maximum CO concentrations inside the garage and at the

¹ US EPA, "Guidelines for Air Quality Maintenance Planning and Analysis Volume 9 (Revised): Evaluating Indirect Sources," EPA-450/4-78-001, September 1978.

closest sensitive receptors surrounding the Project. These closest sensitive receptors include: air intakes located on the proposed Building and nearby existing buildings and pedestrians at ground level anywhere near the Project. CO emissions from motor vehicles operating inside the garage were calculated and the CO concentrations inside the garage and surrounding the Project were based on morning and afternoon peak traffic periods. The parking garage CO emissions were modeled using an EPA-approved air model.

Ventilation System

The proposed parking garage will require mechanical ventilation. The garage ventilation system will be designed to provide adequate dilution of the motor vehicle emissions before they are vented outside. The design of the garage ventilation system will meet all building code requirements. Full ventilation of the garage will require fans that will supply a flow of approximately 11,500 cubic feet per minute (cfm) of fresh air. This quantity of air is designed to meet the building code and will be more than adequate to dilute the emissions inside the parking garage to safe levels before they are vented outside. For the analysis, the garage ventilation exhaust was conservatively assumed to be at 10 feet above ground level.

Peak Garage Traffic Volumes

The peak weekday morning and afternoon one-hour entering and exiting traffic volumes for the parking garage are shown in **Table 5-5**.

Table 5-5 Peak Hour Garage Traffic Volumes

| Time Period | Entering (vehicles/hour) | Exiting (vehicles/hour) | Total (vehicles/hour) |
|-----------------------------------|-------------------------------------|------------------------------------|----------------------------------|
| Weekday Morning Peak hour | 3 | 7 | 10 |
| Weekday Afternoon Peak Hour | 10 | 7 | 17 |

Source: CHA Companies.

Motor Vehicle Emission Rates

The EPA MOVES2014b emission factor model was used to calculate single vehicle CO emissions rates, for a vehicle speed of 5 mph. The inputs to the MOVES2014b model followed the latest guidance from the MassDEP and were performed for the Build year of 2024. The CO emission rate calculated by MOVES2014b, for a speed of 5 mph, was

2.976 grams per hour (gph) for each entering and exiting vehicle. These emission rates apply to wintertime conditions when motor vehicle CO emissions are greatest due to cold temperatures. MOVES2014b model output is provided in the **Appendix 5-B**.

To determine the maximum one-hour CO emissions inside the garage it was necessary to estimate the amount of time each motor vehicle will be in the parking garage with its engine running. To be conservative, it was assumed that every car entering the garage will travel to the farthest parking spot, and that the vehicles leaving the garage will have to travel the same distance from inside the garage to the exit. The calculations in **Appendix 5-B** show how long each vehicle was calculated to travel in the garage for the weekday afternoon peak hour.

The peak one-hour CO emission rate for the parking garage was calculated to be 0.029 grams per minute (0.00048 grams/second) for the weekday afternoon peak hour. Applying the maximum volumetric garage ventilation flow rate for the parking garage, the peak one-hour CO concentration inside the garage was calculated to be 0.079 parts of CO per million parts of air (ppm) for the weekday afternoon peak hour. This prediction represents conservative estimates of the peak garage CO emissions and concentrations.

5.6.3.2 Parking Garage Air Quality Results

Worst-case concentrations of CO from the parking garage were predicted for locations around the Building using AERMOD model (Version 18081) in screening-mode. The results of the air quality analysis for locations outside and around the Building are summarized in **Table 5-6**. **Appendix 5-B** contains the AERMOD model output.

The AERMOD model in screening-mode was used to predict the maximum concentration of CO by modeling the parking garage emissions as volume sources using worst-case meteorological conditions for an urban area. The screening-mode option simulates modeling results predicted by AERMOD. The predicted concentrations presented here represent the worst-case air quality

impacts from the Building parking garage at all locations on and around the Project. AERMOD predicted one-hour average concentrations of air pollutants.

AERMOD predicted that the maximum one-hour CO concentration from the parking garage exhaust vents will be 0.047 ppm (54.1 $\mu\text{g}/\text{m}^3$). This concentration represents the maximum CO concentration at any location surrounding the Project.

The maximum predicted eight-hour CO concentration at any ambient (outside) location will be significantly smaller than the one-hour prediction. This is because: 1) the average number of vehicles entering and exiting the garage over the peak eight-hour period will be significantly less than the peak one-hour values used to predict the peak one-hour CO impact, 2) the worst-case meteorological conditions used to predict the peak one-hour impact will not persist for eight consecutive hours. AERSCREEN guidance allows the maximum eight-hour CO impact to be conservatively estimated by multiplying the maximum one-hour impact by a factor of 0.9 (i.e. the eight-hour impact is 90% of the one-hour impact). The maximum predicted eight-hour CO concentration was determined to be approximately 0.043 ppm (0.047 ppm x 0.9).

The EPA has established NAAQS to protect the public health and welfare in ambient air, with a margin for safety. The NAAQS for CO are 35 ppm for a one-hour average and 9 ppm for an eight-hour average. The Commonwealth of Massachusetts has established the same standards for CO. The CO background values of 2.4 ppm for a one-hour period and 1.3 ppm for an eight-hour period were added to the maximum predicted parking garage ambient impacts to represent the CO contribution from other, more distant, sources. With the background concentration added, the peak, total, one-hour and eight-hour CO impacts from the parking garage, at any location around the Building, will be no larger than 2.5 ppm and 1.3 ppm, respectively. These maximum predicted CO concentrations are safely in compliance with the NAAQS. This analysis demonstrates that the operation of the parking garage will not have an adverse impact on air quality.

Table 5-6 Parking Garage Air Quality Impacts

| Location | Peak Predicted One-Hour Impact (ppm) | One-Hour NAAQS (ppm) | Peak Predicted Eight-Hour Impact (ppm) | Eight-Hour NAAQS (ppm) |
|-------------------------|--------------------------------------|----------------------|--|------------------------|
| Ambient Air Near Garage | 2.3 | 35 (NAAQS) | 1.4 | 9 (NAAQS) |

NAAQS = Massachusetts and National Ambient Air Quality Standards for CO (ppm = parts per million)

*Representative of maximum CO impact at all nearby residences, buildings, and sidewalks.

5.6.3.3 Microscale CO Analysis for Selected Intersections

The BPDA typically requires a microscale air quality analysis for any intersection in the Project study area where the level of service (“LOS”) is expected to deteriorate to D and the Project causes a ten percent (10%) increase in traffic or where the level of service is E or F and the Project contributes to a reduction in LOS. For such intersections, a microscale air quality analysis is required to examine the carbon monoxide (CO) concentrations at sensitive receptors near the intersection.

A microscale air quality analysis was not performed for this Project due to the Project trip generation having minimal impacts on the overall delays at the four intersections. The Project will generate approximately 10 motor vehicle trips during the morning peak traffic hour and approximately 17 motor vehicle trips during the afternoon traffic hour.

The overall LOS will be the same during the morning peak traffic hour for the Cambridge Street and Lincoln Street intersection for the Existing, No-Build and Build scenarios. The overall LOS degrades from C to D in the No-Build and Build scenarios at the Cambridge Street and Lincoln Street intersection. This degradation is due to increases in future background traffic (No-Build) at the Cambridge Street and Lincoln Street intersection. Furthermore, the increase in traffic at this intersection is less than 10% and the LOS is better than D.

Table 5-7 shows a comparison of the Existing (2019) and Build (2024) LOS at the Cambridge Street and Lincoln Street intersection. The motor vehicle trip generation from the Project will not have a significant impact on motor vehicle delays and air pollutant emissions at the analyzed intersections. Therefore, the motor vehicle traffic generated by the Project will not have a significant impact on air quality at any intersection in the Project area and a microscale air quality analysis is not necessary for this Project.

Table 5-7 Summary of Level of Service

| Intersection | Existing LOS (AM/PM) | No Build LOS (AM/PM) | Build LOS (AM/PM) | Requires Analysis? |
|--|----------------------|----------------------|-------------------|--------------------|
| Cambridge Street & Lincoln Street-signalized | C/A | C/D | C/D | NO* |

Source: CHA Companies

The LOS shown represents the overall delay at each signalized intersection and the worst approach at the un-signalized intersection.

*Project does not contribute to reduction in level of service.

5.7 Noise

5.7.1 Introduction

Tech Environmental, Inc., performed a noise study to determine whether the operation of the proposed Project will comply with the City of Boston Noise Regulations, the Massachusetts Department of Environmental Protection (MassDEP) Noise Policy and Housing and Urban Development (“HUD”) guideline.

5.7.2 Noise Terminology

The unit of sound pressure is the decibel (dB). The decibel scale is logarithmic to accommodate the wide range of sound intensities to which the human ear is subjected. A property of the decibel scale is that the sound pressure levels of two separate sounds are not directly additive. For example, if a sound of 70 dB is added to another sound of 70 dB, the total is only a 3-decibel increase (or 73 dB), not a doubling to 140 dB. Thus, every 3-dB increase represents a doubling of sound energy. For broadband sounds, a 3-dB change is the minimum change perceptible to the human ear. **Table 5-8** gives the perceived change in loudness of different changes in sound pressure levels.²

Table 5-8 Subjective Effects of Changes in Sound Pressure Levels

| Change in Sound Level | Apparent Change in Loudness |
|-----------------------|-----------------------------|
| 3 dB | Just perceptible |
| 5 dB | Noticeable |
| 10 dB | Twice (or half) as loud |

² American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc., 1989 ASHRAE Handbook-- Fundamentals (I-P) Edition, Atlanta, GA, 1989.

Non-steady noise exposure in a community is commonly expressed in terms of the A-weighted sound level (dBA); A-weighting approximates the frequency response of the human ear. Levels of many sounds change from moment to moment. Some are sharp impulses lasting 1 second or less, while others rise and fall over much longer periods of time. There are various measures of sound pressure designed for different purposes. To establish the background ambient sound level in an area, the L90 metric, which is the sound level exceeded 90 percent of the time, is typically used. The L90 can also be thought of as the level representing the quietest 10 percent of any time period. Similarly, the L10 can also be thought of as the level representing the quietest 90 percent of any time period. The L10 and L90 are broadband sound pressure measures, i.e., they include sounds at all frequencies. The Leq, or equivalent sound level, is the steady-state sound level over a period of time that has the same acoustic energy as the fluctuating sounds that actually occurred during that same period. Federal noise guidelines are based on the Ldn, which is the A-weighted equivalent sound level for a 24-hour period with an additional 10 dB imposed on the equivalent sound levels for night time hours of 10 p.m. to 7 am.

Sound level measurements typically include an analysis of the sound spectrum into its various frequency components to determine tonal characteristics. The unit of frequency is Hertz (Hz), measuring the cycles per second of the sound pressure waves, and typically the frequency analysis examines 10 octave bands from 32 Hz to 16,000 Hz.

The acoustic environment in an urban area such as the Project area results from numerous sources. Observations show that major contributors to the background sound level in the Project area include motor vehicle traffic on local and distant streets, aircraft over-flights, mechanical equipment on nearby buildings, and general city noises such as street sweepers and police/fire sirens. Typical sound levels associated with various activities and environments are presented in **Table 5-9**.

5.7.3 Noise Regulations and Criteria

Commonwealth Noise Policy

The MassDEP regulates noise through 310 CMR 7.00, "Air Pollution Control." In these regulations "air contaminant" is defined to include sound and a condition of "air pollution" includes the presence of an air contaminant in such concentration and duration as to "cause a nuisance" or "unreasonably interfere with the comfortable enjoyment of life and property."

Regulation 7.10 prohibits “unnecessary emissions” of noise. The MassDEP DAQC Policy Statement 90-001 (February 1, 1990) interprets a violation of this noise regulation to have occurred if the noise source causes either:

- An increase in the broadband sound pressure level of more than 10 dBA above the ambient level; or
- A “pure tone” condition.

The ambient background level is defined as the L90 level as measured during equipment operating hours. A “pure tone” condition occurs when any octave band sound pressure level exceeds both of the two adjacent octave band sound pressure levels by 3 dB or more.

The MassDEP does not regulate noise from motor vehicles accessing a site or the equipment backup notification alarms. Therefore, the provisions described above only apply to a portion of the sources that may generate sound following construction of the Project.

Local Regulations

The City of Boston Environment Department regulates noise through the Regulations for the Control of Noise as administered by the Air Pollution Control Commission. The Project is located in an area consisting of commercial and residential uses. The Project will have low-rise residential uses to the north, single family homes to the west, and to the south. The Project must comply with Regulation 2.2 for noise levels in Residential Zoning Districts at these residential locations. **Table 5-10** lists the maximum allowable octave band and broadband sound pressure levels for residential and business districts. Daytime is defined by the City of Boston Noise Regulations as occurring between the hours of 7:00 a.m. and 6:00 p.m. daily except Sunday. Compliance with the most restrictive nighttime residential limits will ensure compliance for other land uses with equal or higher noise limits.

HUD Site Acceptability Standards

Noise monitoring at the Site during the daytime and nighttime were used to evaluate the existing ambient sound levels and to evaluate conformance with the Site Acceptability Standards established by HUD for residential development. The purpose of the HUD guidelines is to provide standards for determining the acceptability of residential project locations with regards to existing sound levels. The HUD criteria regarding the day-night average sound level (“Ldn”) are listed below. These standards apply to Ldn measurements taken several feet from the Building in the direction of the predominant source of noise.

Normally Acceptable – L_{dn} not exceeding 65 dBA

Normally Unacceptable – L_{dn} above 65 dBA, but not exceeding 75 dBA

Unacceptable – L_{dn} above 75 dBA.

These HUD standards do not apply to this Project, but are used as guidance regarding the suitability of the Project area with regard to background sound levels.

5.7.4 Existing Conditions

5.7.4.1 Baseline Noise Environment

The acoustic environment in an urban area such as the Project area results from numerous sources. Observations show that major contributors to the background sound level in the Project area include motor vehicle traffic on the Massachusetts Turnpike, local and distant streets, aircraft over-flights.

5.7.4.2 Noise Measurement Methodology

Existing baseline sound levels in the Project area were measured during the quietest overnight period when human activity and street traffic were at a minimum, and when the Project's mechanical equipment (the principal sound sources) could be operating. Since the Project's mechanical equipment may operate at any time during a 24-hour day, a weekday between 12:00 a.m. and 4:00 a.m. was selected as the worst-case time period, i.e., the time period when Project-related sounds may be most noticeable due to the quieter background sound levels. Establishing an existing background (L_{90}) during the quietest hours of the facility operation is a conservative approach for noise impact assessment and is required by the MassDEP Noise Policy.

Table 5-9 Common Indoor and Outdoor Sound Levels

| Outdoor Sound Levels | Sound Pressure (μPa) | Sound Level (dBA) | 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 1m |
| | 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 | Average Whisper |
| | | 15 | Broadcast and Recording Studios |
| | 63 | 10 | |
| | | 5 | Human Breathing |
| Reference Pressure Level | 20 | 0 | Threshold of Hearing |

Notes: μPa , or micro-Pascals, describes sound pressure levels (force/area). DBA, or A-weighted decibels, describes sound pressure on a logarithmic scale with respect to 20 μPa (reference pressure level).

Table 5-10 City of Boston on Maximum Allowable Sound Pressure Levels (db)

| Octave Band (Hz) | Zoning District | | |
|------------------------|---|-----------|-----------------------|
| | Residential (Daytime) (All Other Times) | | Business (anytime) |
| 32 Hz | 76 | 68 | 79 |
| 63 Hz | 75 | 67 | 78 |
| 125 Hz | 69 | 61 | 73 |
| 250 Hz | 62 | 52 | 68 |
| 500 Hz | 56 | 46 | 62 |
| 1000 Hz | 50 | 40 | 56 |
| 2000 Hz | 45 | 33 | 51 |
| 4000 Hz | 40 | 28 | 47 |
| 8000 Hz | 38 | 26 | 44 |
| Broadband (dBA) | 60 | 50 | 65 |

The nighttime noise measurement locations are as follows (see the Figure 1 in the **Appendix 5-C**):

- Location #1: 50 Empire Street
- Location #2: 525 Lincoln Street
- Location #3: 3 Holman Street

5.7.4.3 Measurement Equipment

Broadband (dBA) and octave band sound level measurements were made with a Bruel and Kjaer (B&K) Model 2250 environmental sound level analyzer, at each monitoring location, for a duration of approximately thirty minutes. The full octave band frequency analysis was performed on the frequencies spanning 16 to 16,000 Hertz. A time integrated statistical analysis of the data used to quantify the sound variation was also performed, including the calculation of the L90, which is used to set the ambient background sound level.

The B&K model 2250 is equipped with a ½" precision condenser microphone and has an operating range of 5 dB to 140 dB and an overall frequency range of 3.5 Hz to 20,000 Hz. This meter meets or exceeds all requirements set forth in the ANSI S1.4 1983 Standards for Type 1 quality and accuracy and the State and City requirements for sound level instrumentation. Prior to any measurements, this sound analyzer was calibrated with an ANSI Type 1 calibrator that has an

accuracy traceable to the National Institute of Standards and Technology (NIST). During all measurements, the B&K 2250 was tripod mounted at approximately five feet above the ground in open areas away from vertical reflecting surfaces.

5.7.4.4 Baseline Ambient Noise Levels

The daytime sound level monitoring was conducted on Wednesday, April 10, 2019, and the nighttime sound level monitoring was conducted overnight on Thursday, April 11 into Friday morning April 12, 2019. Weather conditions during the sound surveys were conducive to accurate sound level monitoring: the skies were partially cloudy, and the winds were light (i.e., less than 15 mph). The microphone of the sound level analyzer was fitted with a 7-inch windscreen to negate any effects of wind-generated noise.

The daytime sound level measurements taken in the vicinity of the Site reveal sound levels that are typical for an urban area. A significant source of existing sound at all locations is motor vehicle traffic on nearby highways and local streets, residential, and aircraft over-flights. Similarly, the nighttime sound level measurements taken in the vicinity of the Site reveal sound levels that are typical for an urban area. A significant source of existing sound at all locations is motor vehicle traffic on nearby highways and local streets, residential and commercial air handling equipment, and aircraft over-flights.

Noise monitoring at the Site during the daytime were used to evaluate the existing ambient sound levels and to evaluate conformance with the Site Acceptability Standards established by HUD for residential development. These sound level measurements were taken to help estimate the Ldn for the Site. A 30-minute sound level measurement was taken during the afternoon on Wednesday, April 10th between 3:43 p.m. and 4:13 p.m. at 525 Lincoln Street (Location #2) representing the closest location to the Site.

The main source of noise during the daytime sound level measurement was motor vehicle traffic on the Massachusetts Turnpike, Cambridge Street and local streets, nearby construction, sirens, and aircraft over-flights. The Leq measured during the morning period was 65.8 dBA. The Leq sound level measured during the nighttime at the same location was 60.7 dBA. Using both the daytime and nighttime Leq sound levels, the calculated Ldn for the Site is 69.6 dBA, which is above the HUD guideline noise limit of 65 dBA.

The results of the nighttime baseline sound level measurements are presented in **Table 5-11**. The nighttime background L90 level ranged from 39.1 dBA at Location #3 to 53.7 dBA at Location #2. The octave band data in Table 5-11 shows that one pure tone was detected at Location #1 and #2 in the nighttime noise

measurements. It is assumed that this pure tone is due to the constant traffic on the Massachusetts Turnpike.

Table 5-11 Nighttime Baseline Sound Level Measurements – April 27-28, 2017

| Sound Level Measurement | Location #1 50 Empire Street 11:00 PM- 11:30- PM | Location #2 525 Lincoln Street 11:35 PM- 12:05 AM | Location #3 3 Holman Street 12:08 AM - 12:38 AM |
|------------------------------------|---|--|--|
| Background (L₉₀) | 50.8 | 53.7 | 39.1 |
| 16 Hz | 52.4 | 55.1 | 47.7 |
| 32 Hz | 55.0 | 58.3 | 47.4 |
| 63 Hz | 55.0 | 59.0 | 46.4 |
| 125 Hz | 50.7 | 54.2 | 39.7 |
| 250 Hz | 46.0 | 48.9 | 36.0 |
| 500 Hz | 45.3 | 47.7 | 35.4 |
| 1000 Hz | 48.4* | 51.2* | 36.5 |
| 2000 Hz | 40.9 | 44.4 | 26.6 |
| 4000 Hz | 24.5 | 29.1 | 11.5 |
| 8000 Hz | 12.1 | 16.3 | 10.1 |
| 16000 Hz | 10.5 | 11.1 | 10.2 |
| Pure Tone? | Yes | Yes | No |

*Pure tone associated with traffic along the MassPike (I-90).

5.7.5 *Overview of Potential Project Noise Sources*

The mechanical systems for the Project are in the early design stage. Typical sound power data for the equipment of the expected size and type for the Project have been used in the acoustic model to represent the Project's mechanical equipment. The sound levels from all potential significant Project noise sources are discussed in this section.

The design for the Project is expected to include the following roof-top mechanical equipment:

- 80 apartment rooftop units

The equipment listed above, which will be located on Building roof levels, was included in the noise impact analysis. The Project's traffic was not included in the noise analysis because motor vehicles are exempt under both the City and MassDEP noise regulations.

The sound generation profiles for the mechanical equipment noise sources operating concurrently under full-load conditions were used to determine the maximum possible resultant sound levels from the Site as a whole, to define a worst-case scenario. To be in

compliance with City and MassDEP regulations, the resultant sound level must not exceed the allowable octave band limits in the City of Boston Noise Regulation and must be below the allowable incremental noise increase, relative to existing noise levels, as required in the MassDEP Noise Policy.

This sound level impact analysis was performed using sound generation data for representative equipment to demonstrate compliance with noise regulations. As the Building design evolves, the sound generation for the actual equipment selected may differ from the values that were utilized for the analysis.

5.7.6 Modeling Methodology

Future maximum sound levels at the upper floors of all existing residences bordering the Project, were calculated with acoustic modeling software assuming simultaneous operation of all mechanical equipment at their maximum loads.

The Cadna-A computer program, a comprehensive 3-dimensional acoustical modeling software package was used to calculate Project generated sound propagation and attenuation.³The model is based on ISO 9613, an internationally recognized standard specifically developed to ensure the highly accurate calculation of environmental noise in an outdoor environment. ISO 9613 standard incorporates the propagation and attenuation of sound energy due to divergence with distance, surface and Building reflections, air and ground absorption, and sound wave diffraction and shielding effects caused by barriers, buildings, and ground topography.

The closest/worst-case sensitive (residential) location is to the northwest of the project area on Royal Street. This location was selected based on the proximity of the equipment (smaller distances correspond to larger noise impacts) and the amount of shielding by other buildings (taller nearby residential locations will experience less shielding from the Project's rooftop mechanical equipment, which may result in larger potential noise impacts from the Project). This location is expected to receive the largest sound level impacts from the Project's rooftop mechanical equipment. It can be classified as a residential zone.

The sound level impacts from the Project's mechanical equipment were predicted at the closest residential locations to the north, west, and south. The Site is bound by commercial uses to the east. Figure 1 in **Appendix 5-C** shows the locations of the modeled noise receptors. Noise impacts at other nearby noise-sensitive locations farther from the Site will be less than those predicted for these receptors.

³ Cadna-A Computer Aided Noise Abatement Program, Version 2017.

5.7.7 *Future Sound Level of Project*

The City and MassDEP noise standards apply to the operation of the mechanical equipment at the Project. The details of the noise predictions are presented in **Table 5-12** to **Table 5-17**. The sound impact analysis includes the simultaneous operation of the Project's rooftop mechanical equipment. The predicted sound levels are worst-case predictions that represent all hours of the day, as the analysis assumes full operation of the mechanical equipment 24-hours a day. The typical sound level impacts from the mechanical equipment will likely be lower than what is presented here, since most of the mechanical equipment will operate at full-load only during certain times of the day and during the warmer months of the year, it is not likely that all of the mechanical equipment will operate at the same time. Sound level impacts at locations farther from the Project (e.g. other residences, etc.) will be lower than those presented in this report.

5.7.7.1 **City of Boston Noise Standards**

The noise impact analysis results, presented in **Table 5-12** to **Table 5-17**, reveal that the sound level impact at the noise-sensitive receptors will be between 35 and 41 dBA. The smallest sound level impact of 35 dBA is predicted to occur at 50 Empire Street (Location R5) and 225 Cambridge Street (Location R6). The largest sound level impact of 41 dBA is predicted to occur at 11 Royal Street (Location R1). Noise impacts predicted at all locations are in compliance with the City's nighttime noise limit (50 dBA) for a residential area. Note that sound levels from the Project will be below the residential nighttime limits at all times. The results also demonstrate compliance with the City, residential, non-daytime, octave band noise limits at all locations.

The City noise limits for business areas are significantly higher than the nighttime noise limits for residential areas (see **Table 5-10**). The Project will also easily comply with the City business area noise limits at all surrounding commercial properties.

5.7.7.2 **MassDEP Noise Regulations**

The predicted sound level impacts at the noise-sensitive locations were added to the measured L90 value of the quietest daily hour to test compliance with MassDEP's noise criteria. Assuming the Project's mechanical noise is constant throughout the day, the Project will cause the largest increase in sound levels during the period when the lowest background noise occurs. Minimum background sound levels (diurnal) typically occur between 12:00 a.m. and 4:00 a.m.

As shown in **Table 5-12** to **Table 5-17**, the Project is predicted to produce a less than 3 dBA change in the background sound levels at all modeled locations. Therefore, the Project's worst-case sound level impacts during the quietest

nighttime periods will be in compliance with the MassDEP allowed noise increase of 10 dBA. The noise predictions for each octave band indicate that the mechanical equipment will not create a pure tone condition at any location.

5.7.7.3 HUD Site Acceptability Standards

The maximum predicted sound level impacts from the Project are well below 65 dBA and will not increase the existing Ldn in the Project area. Therefore, the Project area will still comply with HUD's Site Acceptability Standards without any additional mitigation incorporated into the Building design after the Project is completed

5.7.8 *Conclusions*

Sound levels at all nearby sensitive locations and at all property lines will fully comply with the most stringent City and MassDEP daytime and nighttime sound level limits, and the HUD design Noise Levels. This acoustic analysis demonstrates that the Project's design will meet the applicable acoustic criteria.

Table 5-12 11 Royal Street (Location R1) Estimated Future Level Impacts at Anytime

| Octave Bands | Residential Nighttime Noise Standards | Maximum Predicted Sound Levels* |
|---|--|--|
| 32 Hz | 68 | 51 |
| 63 Hz | 67 | 44 |
| 125 Hz | 61 | 40 |
| 250 Hz | 52 | 40 |
| 500 Hz | 46 | 39 |
| 1000 Hz | 40 | 37 |
| 2000 Hz | 33 | 33 |
| 4000 Hz | 28 | 25 |
| 8000 Hz | 26 | 12 |
| Broadband (dBA) | 50 | 41 |
| Compliance with the City of Boston Noise Regulation? | | Yes |

| Sound Level Metric | Maximum Sound Levels* (dBA) |
|--|------------------------------------|
| Existing Nighttime Background, L_{90} (Location # 2) | 53.7 |
| 525 Lincoln Street Project* | 41.4 |
| Calculated Combined Future Sound Level | 53.9 |
| Calculated Incremental Increase | +0.2 |
| Compliance with MassDEP Noise Policy? | Yes |

* Assumes full-load operation of all mechanical equipment.

Note: MassDEP Policy allows a sound level increase of up to 10 dBA.

Table 5-13 21 Royal Street (Location R2) Estimated Future Level Impacts at Anytime

| Octave Bands | Residential Nighttime Noise Standards | Maximum Predicted Sound Levels* |
|---|---------------------------------------|---------------------------------|
| 32 Hz | 68 | 45 |
| 63 Hz | 67 | 39 |
| 125 Hz | 61 | 35 |
| 250 Hz | 52 | 36 |
| 500 Hz | 46 | 35 |
| 1000 Hz | 40 | 34 |
| 2000 Hz | 33 | 30 |
| 4000 Hz | 28 | 23 |
| 8000 Hz | 26 | 7 |
| Broadband (dBA) | 50 | 38 |
| Compliance with the City of Boston Noise Regulation? | | Yes |

| Sound Level Metric | Maximum Sound Levels* (dBA) |
|---|-----------------------------|
| Existing Nighttime Background, L ₉₀ (Location # 3) | 39.1 |
| 525 Lincoln Street Project* | 37.7 |
| Calculated Combined Future Sound Level | 41.5 |
| Calculated Incremental Increase | +2.4 |
| Compliance with MassDEP Noise Policy? | Yes |

* Assumes full-load operation of all mechanical equipment.

Note: MassDEP Policy allows a sound level increase of up to 10 dBA.

Table 5-14 15-17 Hooker Street (Location R3) Estimated Future Level Impacts at Anytime

| Octave Bands | Residential Nighttime Noise Standards | Maximum Predicted Sound Levels* |
|---|---------------------------------------|---------------------------------|
| 32 Hz | 68 | 46 |
| 63 Hz | 67 | 40 |
| 125 Hz | 61 | 36 |
| 250 Hz | 52 | 36 |
| 500 Hz | 46 | 35 |
| 1000 Hz | 40 | 34 |
| 2000 Hz | 33 | 29 |
| 4000 Hz | 28 | 20 |
| 8000 Hz | 26 | 4 |
| Broadband (dBA) | 50 | 37 |
| Compliance with the City of Boston Noise Regulation? | | Yes |

| Sound Level Metric | Maximum Sound Levels* (dBA) |
|--|-----------------------------|
| Existing Nighttime Background, L_{90} (Location # 3) | 39.1 |
| 525 Lincoln Street Project* | 37.5 |
| Calculated Combined Future Sound Level | 41.4 |
| Calculated Incremental Increase | +2.3 |
| Compliance with MassDEP Noise Policy? | Yes |

* Assumes full-load operation of all mechanical equipment.

Note: MassDEP Policy allows a sound level increase of up to 10 dBA.

Table 5-15 27-29 Hooker Street (Location R4) Estimated Future Level Impacts at Anytime

| Octave Bands | Residential Nighttime Noise Standards | Maximum Predicted Sound Levels* |
|---|--|--|
| 32 Hz | 68 | 47 |
| 63 Hz | 67 | 41 |
| 125 Hz | 61 | 37 |
| 250 Hz | 52 | 37 |
| 500 Hz | 46 | 36 |
| 1000 Hz | 40 | 34 |
| 2000 Hz | 33 | 29 |
| 4000 Hz | 28 | 20 |
| 8000 Hz | 26 | 4 |
| Broadband (dBA) | 50 | 38 |
| Compliance with the City of Boston Noise Regulation? | | Yes |

| Sound Level Metric | Maximum Sound Levels* (dBA) |
|--|------------------------------------|
| Existing Nighttime Background, L_{90} (Location # 1) | 50.8 |
| 525 Lincoln Street Project* | 37.8 |
| Calculated Combined Future Sound Level | 51.0 |
| Calculated Incremental Increase | +0.2 |
| Compliance with MassDEP Noise Policy? | Yes |

* Assumes full-load operation of all mechanical equipment.

Note: MassDEP Policy allows a sound level increase of up to 10 dBA.

Table 5-16 50 Empire Street (Location R5) Estimated Future Level Impacts at Anytime

| Octave Bands | Residential Nighttime Noise Standards | Maximum Predicted Sound Levels* |
|---|--|--|
| 32 Hz | 68 | 47 |
| 63 Hz | 67 | 40 |
| 125 Hz | 61 | 35 |
| 250 Hz | 52 | 35 |
| 500 Hz | 46 | 33 |
| 1000 Hz | 40 | 31 |
| 2000 Hz | 33 | 25 |
| 4000 Hz | 28 | 16 |
| 8000 Hz | 26 | 1 |
| Broadband (dBA) | 50 | 35 |
| Compliance with the City of Boston Noise Regulation? | | Yes |

| Sound Level Metric | Maximum Sound Levels* (dBA) |
|---|------------------------------------|
| Existing Nighttime Background, L ₉₀ (Location # 1) | 50.8 |
| 525 Lincoln Street Project* | 35.1 |
| Calculated Combined Future Sound Level | 50.9 |
| Calculated Incremental Increase | +0.1 |
| Compliance with MassDEP Noise Policy? | Yes |

Table 5-17 225 Cambridge Street (Location R6) Estimated Future Level Impacts at Anytime

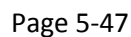
| Octave Bands | Residential Nighttime Noise Standards | Maximum Predicted Sound Levels* |
|---|--|--|
| 32 Hz | 68 | 46 |
| 63 Hz | 67 | 39 |
| 125 Hz | 61 | 35 |
| 250 Hz | 52 | 35 |
| 500 Hz | 46 | 33 |
| 1000 Hz | 40 | 31 |
| 2000 Hz | 33 | 25 |
| 4000 Hz | 28 | 17 |
| 8000 Hz | 26 | 3 |
| Broadband (dBA) | 50 | 35 |
| Compliance with the City of Boston Noise Regulation? | | Yes |

| Sound Level Metric | Maximum Sound Levels* (dBA) |
|--|------------------------------------|
| Existing Nighttime Background, L_{90} (Location # 1) | 50.8 |
| 525 Lincoln Street Project* | 35.3 |
| Calculated Combined Future Sound Level | 50.9 |
| Calculated Incremental Increase | +0.1 |
| Compliance with MassDEP Noise Policy? | Yes |

5.8 Flood Zones

The Site is not located within any flood zones. See **Figure 5-15** for the FEMA Flood Insurance Rate Map for the Site.

Project Notification Form
525 Lincoln Street



5.9 Water Quality

The water quality runoff from the Site will be greatly enhanced in the built condition. It is anticipated that stormwater runoff will be collected and treated on-site, as necessary, and will be routed to subsurface infiltration systems to reduce the impact on the BWSC drainage system. At a minimum, on-site systems will be designed with a capacity of 1.25-inches over the impervious area of the Site. For larger storms, these systems will be equipped with overflow connections to the municipal system. Appropriate stormwater best management practices (BMP's) are to be included in the Project to improve the quality of stormwater runoff discharged from the Site, to promote infiltration to groundwater, and to ensure peak flows are at or below existing levels.

5.10 Geotechnical

This section addresses the geotechnical aspects of excavation and foundation construction work anticipated for the Project. Presented below are descriptions of existing soil and groundwater conditions; foundation construction methods and excavation work anticipated for the project based on preliminary evaluations completed to date; and potential project impacts and proposed mitigation measures. Mitigation efforts focus on protection of nearby streets and utilities.

5.10.1 *Site and Subsurface Conditions*

The Site consists of an irregularly-shaped property bounded by Lincoln Street to the north, Lincoln Street and the intersection of Lincoln Street with Cambridge Street to the east, Cambridge Street to the south and a narrow grass landscaped area locally known as the Lincoln Street Green Strip to the west.

Currently the Site is occupied primarily by a bituminous paved at-grade parking lot with a sloping grass covered berm along the southern boundary of the Site which supports the approach grading of Cambridge Street to a bridge abutment where Cambridge Street crosses over the Massachusetts Turnpike to the west of the Site. Ground surface within the parking lot slopes gently down towards Lincoln Street from about Elevation +26 (BCB) at the base of the berm to about Elevation +22 (BCB) near Lincoln Street. The berm on the southern edge of the property slopes moderately to steeply upward from about Elevation +26 (BCB) at the parking lot to Cambridge Street. Cambridge Street varies from about Elevation +27 (BCB) at the southeast corner of the Site to about Elevation +45 (BCB) at the southwest corner of the Site.

Subsurface conditions generally consist of a granular fill deposit which is up to 9 feet in thickness within the paved parking lot and is anticipated to increase in thickness with the height of the berm on the southern side of the Site. A thin marine clay and silty sand deposit is anticipated to be present below the fill. The marine deposit is underlain by a thick glacial outwash deposit consisting of sand and gravel. Glacial till is present below the glacial outwash deposit.

5.10.2 *Groundwater Conditions*

Groundwater present in observation wells installed at the Site has been measured between about 10 and 14 feet below the existing ground surface.

5.10.3 *Groundwater Control*

The proposed Building will consist of at-grade parking with podium style construction above. As such, groundwater control will generally be limited to precipitation which collects on the Site.

It is anticipated that during construction, groundwater will be controlled with localized sumps and be recharged on-site where possible. However, if groundwater must be discharged off-site, a groundwater discharge permit from the Massachusetts Department of Environmental Protection (DEP) and the EPA will be required in order to legally dispose of groundwater collected during construction to a storm drain. The permit would require chemical analysis of groundwater samples obtained from the Site.

5.10.4 *Excavation and Foundation Construction*

Excess soil excavated to construct the at-grade parking and Building foundations will require off-site disposal at approved off-site disposal facilities. Excavation for the Building foundations will be performed within the lateral earth support system anticipated to consist of a steel soldier piles and timber lagging system with up to two levels of tiebacks to provide horizontal support. The Contractor will work throughout Building construction to avoid adverse impacts on adjacent roadways and utility infrastructure.

5.10.5 *Proposed Foundation Construction*

The proposed Building is planned to occupy the majority of the Site. Foundation support will consist of conventional footing foundations bearing directly on existing fill and marine deposits improved with ground improvement techniques. Construction of the foundations and at-grade parking level will require an excavation benched into the Cambridge Street berm which is anticipated to vary from approximately 5 to 25 feet deep. The lateral earth support system is anticipated to consist of a steel soldier pile and timber lagging system with up to two levels of post-tensioned tie-backs to provide horizontal support. Deformation instrumentation, such as inclinometers, will be used to monitor potential movements of the earth support system and deformation monitoring points will be surveyed to monitor potential movements of the roadways and infrastructure adjacent to the excavation.

5.10.6 *Probable Project Impacts and Mitigation Measures*

Prior to construction, instrumentation will be installed on adjacent roadways and utilities. Instrumentation locations will be coordinated with adjacent property and utility owners. A preconstruction survey of property immediately adjacent to the excavation will also be

performed to document existing conditions. The performance of the soldier pile and timber lagging lateral support system will be monitored during construction using inclinometers or offset survey monitoring devices to monitor horizontal movements of the earth support walls and settlement points to check potential vertical deflections.

5.11 Solid and Hazardous Waste

Previous environmental due diligence investigations have been performed by others at the Site. Additional environmental due diligence is planned to be performed by the Proponent as part of the design process. The Site is currently in compliance with the Massachusetts Contingency Plan ("MCP").

As part of the proposed construction, the proponent plans to perform additional due diligence and soil pre-characterization including subsurface investigations and chemical testing to manage the soils to be generated from the Site during construction which involves the documentation, handling, and removal of the materials to maintain Site compliance with the MCP.

The Proponent will retain a Licensed Site Professional ("LSP") to manage the environmental aspects of the Project, including management and/or disposal of soil and groundwater encountered during construction. The LSP will also prepare required MCP regulatory submittals, if necessary.

5.11.1 *Previous Due Diligence*

Previous due diligence performed at the Site consists of a Phase I Environmental Site Assessment dated July 16, 2010 and a Phase II Limited Subsurface Investigation dated May 31, 2012 each prepared by EBI Consulting ("EBI"). The Phase I report presents historic Sanborn Fire Insurance Maps and aerial photographs that indicate the Site was occupied by a dry cleaning company prior to 1925 through 1950 and a gasoline service station, including two gasoline tanks. By 1963 the Site was occupied by a machine shop and air conditions sales operation. Previously existing buildings had been demolished by 1978 and the Site had been converted to an at-grade parking area which has remained through present.

EBI's Phase I findings for the Site indicated that a large drycleaner facility and the former presence of a gasoline service station have the potential to have impacted subsurface conditions at the Site and recommended a Phase II Limited Subsurface Investigation be performed.

On May 15, 2012 five borings were advanced on the Site, two within the footprint of the former gas station and three within the footprint of the former drycleaner. Soil samples were collected and submitted for analytical testing and four of the borings were completed with groundwater observation wells. Subsequent groundwater samples were also collected and submitted for analytical testing.

Soil analytical testing results indicated concentrations of volatile organic compounds (“VOCs”), extractable petroleum hydrocarbon (“EPH”) fractions, and volatile petroleum hydrocarbon (“VPH”) fractions were detected in soil samples from within the footprint of the former drycleaner facility, however, the detected concentrations were below Reportable Concentrations outlined in the MCP.

Groundwater analytical testing results indicated concentrations of chlorinated solvents and petroleum hydrocarbons in two of the observation well samples. The detected concentrations of each of these contaminants were below Reportable Concentrations outlined in the MCP.

Based on the analytical results described, no further investigation was recommended at that time due to the lack of a reportable condition. A vapor barrier was recommended to be installed below any future proposed Building to mitigate against potential contaminant migration into the indoor air.

5.11.2 *Proposed Excavation*

The proposed excavation for construction of the at-grade parking level and Building foundations will remove a portion of the granular fill deposit. Prior to general excavation, the soils anticipated to be excavated will be evaluated for environmental contaminants and characterized in accordance with current Massachusetts DEP policies and procedures and disposed of off-site at various locations dictated by the results of the soil characterization and applicable environmental policies.

5.11.3 *Anticipated Off-Site Soil Disposal*

In order to construct the proposed at-grade parking and Building foundations, existing site soils will be excavated to a depth of about 5 feet on the north side of the Site and up to 25 feet deep on the south side of the Site. Prior to the start of the construction excavation, a detailed soil pre-characterization program will be completed to characterize the volume of soil and evaluate/assign disposal options for the excavated soil. Quantitative estimates of disposal volumes will be developed upon completion of the soil pre-characterization program.

5.11.4 *Groundwater Impacts*

Groundwater encountered during construction will be managed as necessary given the analytical data available for the Site. Groundwater and precipitation which accumulates on the Site surface will be recharged on-site in localized sumps to the greatest extent possible. If groundwater is required to be discharged off-site, a Discharge General Permit (“DGP”) or Remediation General Permit (“RGP”) will be obtained from the EPA obtained by the Proponent to facilitate discharge of groundwater generated during Project’s dewatering operations into the storm drain system in the vicinity of the Site.

5.12 Construction Impacts/Construction Management Plan

5.12.1 *Construction Management Plan*

The Construction Management Plan (“CMP”) will be submitted to The Boston Transportation Department for their approval prior to the start of construction and will include specific mitigation measures and staging plans to minimize impacts to abutters. The construction manager will be bound by the CMP.

5.12.2 *Construction Methodology*

5.12.2.1 Construction Activity Schedule

The construction period for the Project is expected to be approximately 18 months in duration. It is anticipated that the Project will start in the spring of 2020. Typically, construction hours will be from 7:00 a.m. to 6:00 p.m. Monday through Saturday. Weekend and off-hours work is anticipated on the Project in order to minimize impact on vehicular and pedestrian traffic. We will attain all necessary permits in advance of these potential off hour activities occurring.

5.12.2.2 Construction Staging Area

The Logistics Plan will be designed to isolate the construction while providing safe access for pedestrians and automobiles during normal day-to-day activities and emergencies. Interaction with the public will occur mainly along Cambridge Street and Lincoln Street.

The Project consists of demolishing the existing parking lot, relocations of existing utilities, placing spread footings/foundation walls and the erection of the Building, which includes a parking structure, residential co-living studios and suites, and amenity spaces.

The Site will be secured by a 6-foot high fence with privacy screening in accordance with the Logistics Plan. The Site will utilize two (2) primary gates for access.

All construction material delivery trucks will be able to drive directly into the Site to load/unload. Trucks will not be allowed to park or idle on the neighborhood streets. For major deliveries, such as steel, large pieces of mechanical equipment, etc., an off-site staging and marshaling area will be utilized. If necessary, a wheel wash station will be located at the exit to the Site. Also, adjacent streets/sidewalks will be swept as necessary to minimize accumulations of dirt and dust. Mechanical sweeping will be utilized, continuously during the excavation and foundation phases.

If it becomes necessary, off hour work will require a special permit and will be coordinated with BTM and the Mayor's Office of Neighborhood Services ("ONS").

Proper signage and way finding will direct pedestrians safely around the construction job site and activities.

5.12.2.3 Perimeter Protection/Public Safety

The Contractor will work to ensure the staging areas minimize impact to pedestrian and vehicular flow. The specific configuration of staging and pedestrian access around the Site will vary depending on the phase of the work being performed. In general, secured fencing will be used to isolate construction areas from pedestrian traffic, pedestrian way finding signage will be installed and police details will be provided as needed to facilitate traffic flow. Work will be performed outside of the Site fence for utility work and connections. This work will be isolated from traffic and pedestrians utilizing traffic barriers. All utility work within the public ways, will also have a dedicated police detail.

Construction procedures will be designed to meet all OSHA safety standards for specific Site construction activities. Subcontractors will implement and manage their own Health and Safety Program for the Project. All Subcontractors are required to wear appropriate personal protective equipment.

Snow removal and ice treatment will be provided on the surrounding sidewalks, as will trash and debris clean up. Snow removal will occur in a timely manner and will predominantly occur on off hours.

5.12.3 Construction Traffic Impacts

5.12.3.1 Construction Trip Generation and Worker Parking

The number of workers required during the construction will vary with an estimated average daily workforce of 140 during peak of construction. Because the workforce will arrive prior to peak traffic periods, these trips are not expected to impact traffic conditions. Additionally, jobsite personnel will be encouraged to utilize public transportation. No personal vehicles will be allowed to park on the adjacent residential streets. Terms and conditions related to workforce parking and public transportation use will be written into each subcontract.

5.12.3.2 Truck Routes and Volumes

Truck traffic will vary throughout the construction period, depending on the activity. Given the Sites location, with easy access to major roadways such as Cambridge Street, Brighton Avenue and I-90, there will be limited truck or construction access through local roads.

5.12.4 **Construction Air Quality**

5.12.4.1 **Dust Control**

To reduce emission of fugitive dust and minimize impacts on the local environment, the Contractor will adhere to a number of strictly enforced mitigation measures. These include:

- Wetting agents will be used regularly to control and suppress dust that may come from the construction materials;
- All trucks used for transportation of construction debris will be fully covered;
- Actual construction practices will be monitored to ensure that unnecessary transfers and mechanical disturbances of loose materials are minimized and to ensure that any emissions of dust are negligible;
- Street and sidewalks will be cleaned periodically to minimize dust accumulations;
- A wheel wash station will be implemented prior to exiting to the City streets during site work activities, if warranted;
- A preconstruction survey will be conducted to determine the existing dust particle levels in the area and set a baseline for our controls. This survey will also document the conditions of the surrounding structures to establish existing dust levels on these structures.

5.12.5 **Construction Noise**

The Project will require the use of equipment that can be heard from off-site locations. The Project is committed to mitigating noise impacts. Increased community sound levels, however, are an inherent consequence of construction activities. Contractor will record baseline neighborhood sound levels before the start of construction to better understand the existing conditions at the Site. Construction will occur during the daytime hours as defined by the Boston Noise Regulation (7:00 a.m. to 6:00 p.m. except Sundays). In some instances, a second shift, off hour, holiday and Saturday may be required. When these events arise, all required permits will be in place.

5.12.6 **Rodent Control**

The City has declared that the infestation of rodents in the City is a serious problem. In order to control the infestation, the City enforces the requirements established under the Massachusetts State Sanitary Code and the State Building Code that the extermination of rodents shall be required for issuance of permits for demolition, excavation, foundation and basement rehabilitation. The Project will develop a rodent control program prior to its construction start. We will conduct a preconstruction survey to establish the rodent

level. This survey will also document existing conditions that may affect the ability to manage the rodent control such as trash containment, etc.

5.13 Wildlife Habitats

According to the most recent GIS polygons maintained by the Natural Heritage and Endangered Species Program (“NHESP”) of the Massachusetts Division of Fisheries and Wildlife, the Project is located outside of the Estimated Habitats of Rare Wildlife and the Priority Habitats of Rare Species.

5.14 Historic and Archaeological Impacts

This Section describes the historic and archeological resources that may be affected by the Project.

5.14.1 *Historic Resources Within the Site*

The Site does not contain any properties included in the Inventory of Historic and Archeological Assets of the Commonwealth (Inventory), maintained by the Massachusetts Historical Commission (“MHC”).

5.14.2 *Historic Resources Within Vicinity of the Site*

The Site is not listed on any State and National Registers of Historic Places.

5.14.3 *Archeological Resources on the Site*

No known archeological resources listed in the State and National Registers of Historic Places or included in the Inventory located within the Site.

5.14.4 *Massachusetts Historical Commission (MHC) Review*

The Site is not within any Historic Districts and therefore is not subject to MHC review.

5.14.5 *Article 85 – Demolition Delay*

The Site is currently used as a surface level parking lot with no buildings or structures. Therefore, Article 85 – Demolition Delay is not applicable to the Project.

5.15 Tidelands

The Site is not in proximity to any tidelands or lands subject to flooding.

6.0 TRANSPORTATION

6.1 Introduction

This section provides a description of the Project’s transportation operations and assesses any impacts to existing infrastructure. The transportation analysis conforms to the BTM Transportation Access Plans Guidelines and is consistent with the City’s policy for Complete Streets which puts pedestrians, bicyclists and transit users on equal footing with motor-vehicle drivers.

The transportation analysis assesses the Site’s transportation infrastructure today and in the future with and without the Project under the following conditions:

- 2019 Existing Condition
- 2024 No-Build Condition
- 2024 Build Condition

6.2 Project Overview

The Project is located within the Allston-Brighton Neighborhood District, containing approximately 0.75 acres (32,589 SF) of land area and fronts both Lincoln Street and Cambridge Street. The Site is located within walking distance of the new Boston Landing commuter rail station, the Green Line and several local bus routes.

The existing property consists of an approximate forty-five (45) space surface parking lot that will be replaced with a six (6) story co-living residential Building with ten (10) studios and seventy (70) co-living suites. The Project will also include approximately 4,850 SF of residential amenity space, including both indoor and outdoor spaces and approximately 1,250 SF of dedicated, flexible community space. The residential uses will be supported by approximately thirty (30) structured parking spaces with an additional sixteen (16) spaces available for night parking in the nearby 510 Lincoln Street parking lot. The Proponent has the potential to also add approximately thirty (30) spaces with a mechanical parking solution if necessary. See **Table 6-1**.

Table 6-1 Development Program Summary

| Use | Size |
|-----------------|------------|
| Residential | 80 units |
| Parking | 30 spaces* |
| Bicycle Parking | 160 spaces |

*An additional 16 spaces can be provided nearby. Approximately additional thirty (30) spaces may be added with a mechanical parking solution if necessary.

The Project will provide a comprehensive Transportation Demand Management (“TDM”) plan to encourage non-auto dependent trips to the Site. As proposed there will be one-hundred sixty (160) bicycle parking spaces (two per unit) and a public bicycle-sharing station (Blue Bike or other). Additionally, the Proponent plans to partner with Envoy, an electric car-sharing company, to provide vehicles dedicated only to residents as an amenity of their tenancy. Residents will be able to rent electric vehicles as-needed, sharing with other tenants in the Building, which reduces the need for additional parking spaces and maximizes the use and efficiency of the vehicles. The Envoy vehicles at the Project will be one-hundred percent (100%) electric, complete with the required electric charging infrastructure in the Building, in-line with the Proponent’s commitment to sustainability. Further the Proponent is evaluating instituting a Transit Wallet which would provide tenants monthly credit for using public transportation or bikes to further encourage non-auto dependent trips.

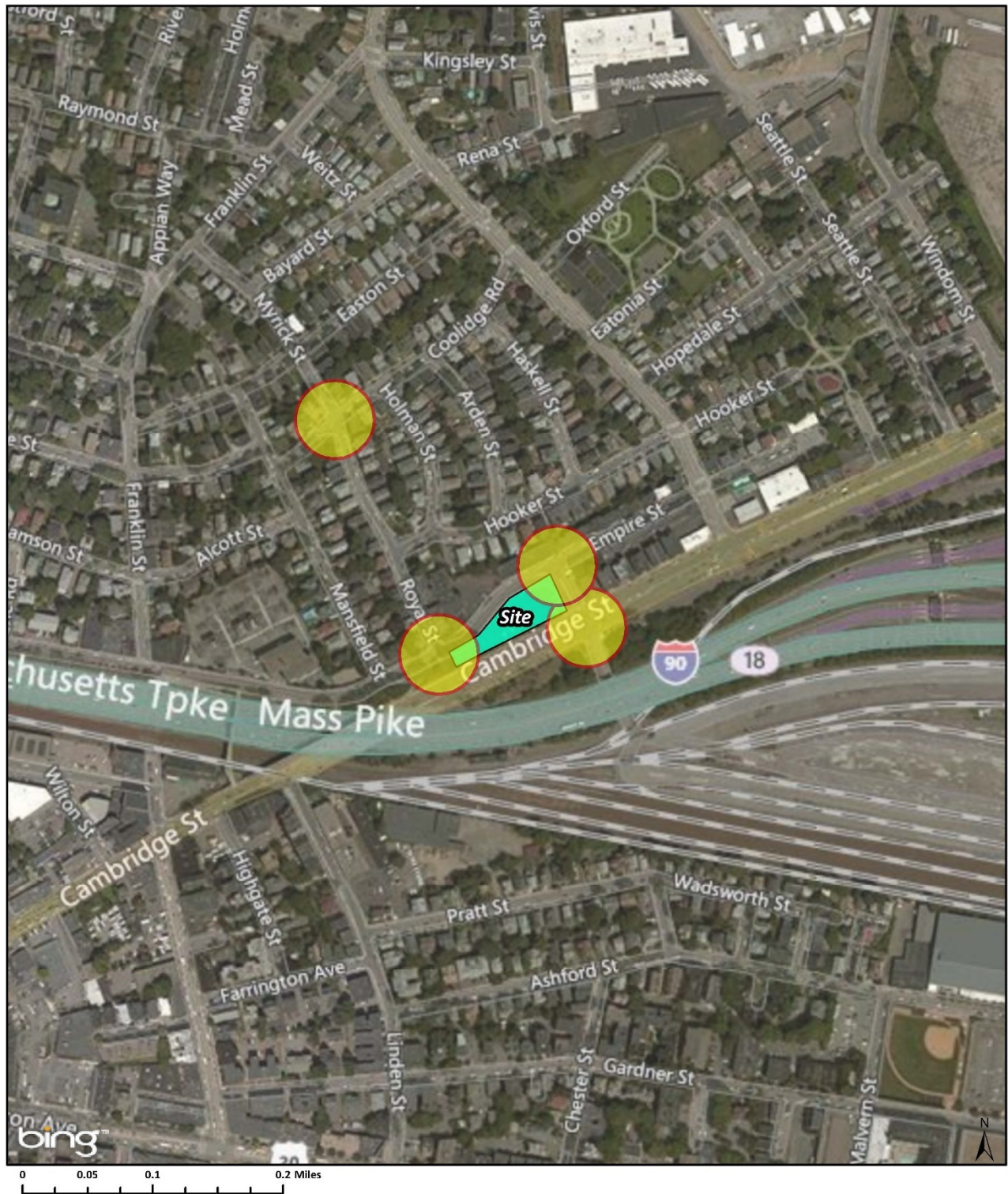
6.3 Study Area

The study area was developed in coordination with the BTM and includes the intersections that are most likely to accommodate Project-generated traffic. These intersections are:

- Lincoln Street / Cambridge Street
- Lincoln Street / Empire Street
- Lincoln Street / Royal Street
- Royal Street/ Coolidge Road

The study area is shown in **Figure 6-1**.

Figure 6-1 Study Area



Legend


 Study Area Intersection

figure 6.1

Study Area



6.4 Existing Conditions

This section describes the 2019 Existing conditions of the study area's transportation facilities, including the area's street network, pedestrian and bicycle facilities, public transportation services, and nearby public parking.

6.4.1 *Data Collection*

Traffic turning movement counts ("TMC's") were conducted during the AM and PM peak periods at the study area intersections on April 9, 2019. These counts included passenger vehicles, heavy vehicles, pedestrians and bicycles.

The resulting peak hours from the counts are 7:30 AM to 8:30 AM and 5:00 PM to 6:00 PM. These volumes served as the baseline for the traffic analysis.

No seasonal adjustment was made to the baseline counts because colleges were still in session at the time of the data collection and April traffic historically is above average in Boston.

6.4.2 *Roadway Inventory*

Lincoln Street is a local roadway located adjacent to the Site to the north. It runs east-west between Market Street and Empire Street. Parking is provided on the north side of the street opposite the Site.

Cambridge Street is an urban principal arterial south of the Site. It runs east-west from Washington Street in Brighton Center to Memorial Drive, and then continues as River Street in the City of Cambridge. In the site vicinity, it is a two-way roadway with striped bicycle lanes and two travel lanes in each direction. On-Street parking is provided on the north side of the roadway between Harvard Street and Lincoln Street.

Royal Street is a local roadway located west of the Site. It is a one-way northbound roadway that runs between Lincoln Street and Coolidge Road. Parking is provided on the east side of the street.

6.4.3 *Intersections*

Existing motorized traffic volumes collected at the following site intersections can be found in **Figure 6-2**.

Figure 6-2 Existing Conditions - Vehicles

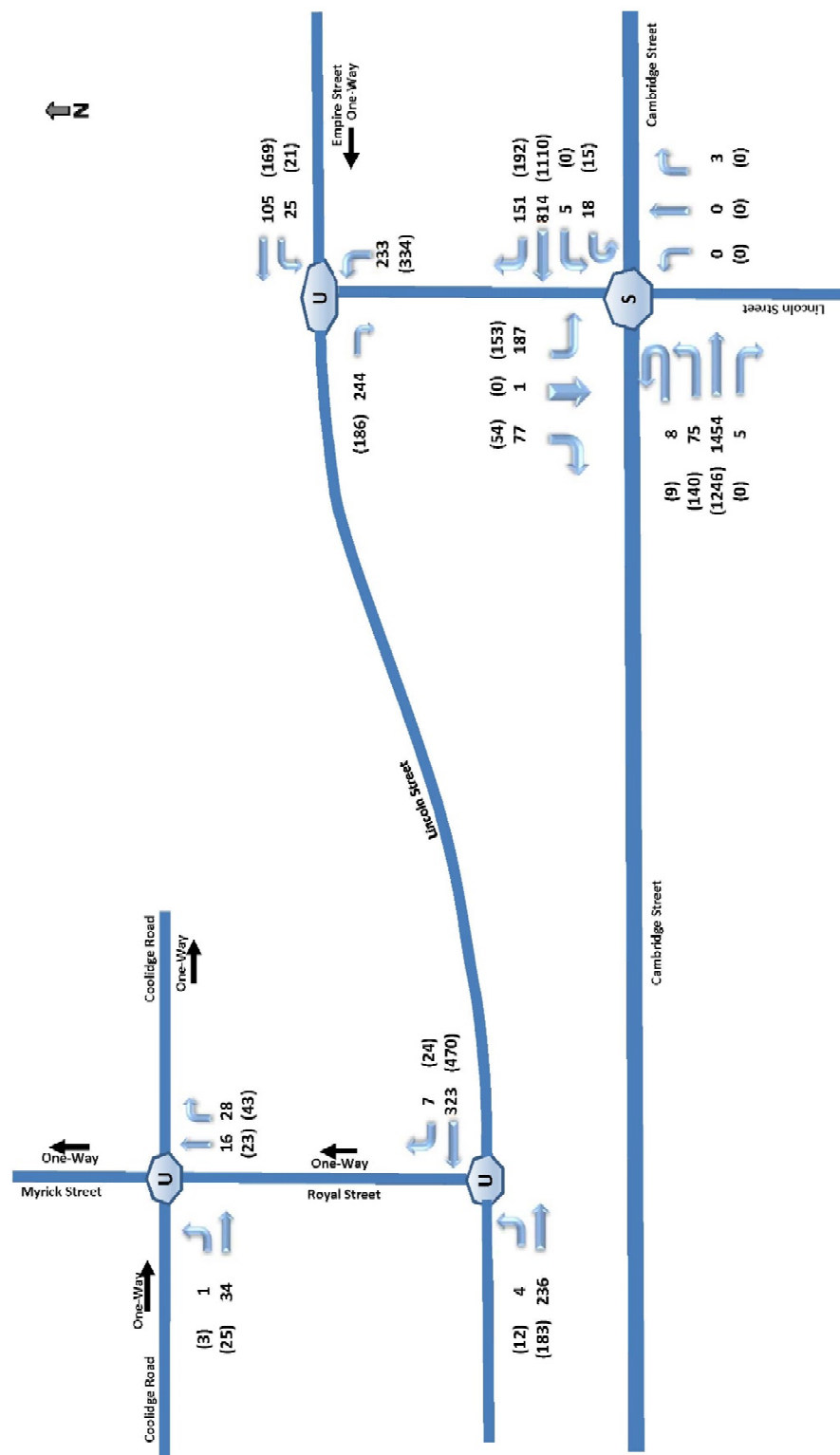


figure 6.2
Existing Conditions -
Vehicles



The following includes a description of the study area intersections:

Lincoln Street / Cambridge Street is a four-legged, signalized intersection. The Cambridge Street eastbound and westbound approaches consist of a single U-turn/left turn lane, an exclusive through lane and a shared through/right turn travel lane with a dedicated bicycle lane along both sides of Cambridge Street. A bus stop/lane is provided on the westbound Cambridge Street approach. The Lincoln Street southbound approach consists of a single lane with no pavement markings provided; however, due to the width of the approach (approximately 24 feet), it operates as a two-lane approach with a shared left/through lane and an exclusive right-turn lane. The northbound driveway approach consists of a single lane with no pavement markings provided. The intersection is striped and signed with DO NOT BLOCK THE BOX regulations.

Handicap-accessible ramps are provided at the intersection. Crosswalks with pedestrian signals are provided across the intersection's north and east legs.

Lincoln Street / Empire Street is a three-legged, unsignalized "T" intersection, with the westbound Empire Street approach stop controlled. The Lincoln Street northbound approach consists of a single travel lane with only left-turns permitted. The Lincoln Street eastbound approach consists of a single travel lane with only right-turns permitted. Empire Street consists of a single one-way only (westbound) travel lane where left and through movements are permitted from this approach. Parking is provided on the north side of Empire Street / Lincoln Street.

Lincoln Street / Royal Street is a three-legged, unsignalized "T"-intersection. The Lincoln Street eastbound and westbound approaches consist of single travel lane, with no pavement markings provided. Royal Street, the north leg of the intersection, is a one-way roadway away from the intersection. Handicap-accessible ramps are provided crossing Royal Street. Parking is provided on the north side of Lincoln Street and the east side of Royal Street.

Royal Street/ Coolidge Road / Myrick Street is a four-legged, unsignalized intersection. Royal Street and Myrick Street are one-way northbound roadways, and Coolidge Road is one-way eastbound. The Royal Street northbound and the Coolidge Road eastbound approaches are both single lane approaches with no pavement markings provided and are stop controlled. Handicap-accessible ramps are provided at the intersection.

6.4.4 ***Pedestrians***

The study area provides sidewalks on all roadways. There are crosswalks on the north and east legs of the Lincoln Street / Cambridge Street intersection with pedestrian signals at this signalized intersection. The sidewalks immediately adjacent to the Project are considered to be in good condition.

Based on the pedestrian counts, Cambridge Street is a moderately travelled pedestrian corridor, as shown in **Figure 6-3**. At the Cambridge Street / Lincoln Street intersection, approximately 40 people cross the north leg during the weekday evening peak hour.

6.4.5 ***Bicycles***

In recent years, the number of bicycles in the neighborhood has increased with the City's initiative to make Boston more bicycle friendly. Bicycle lanes are provided on Cambridge Street adjacent to the Site. According to City's bike route maps, Cambridge Street and Lincoln Street are designated as on-street bicycle facilities adjacent to the Site. Bicycle volumes collected at the study area intersections are shown in **Figure 6-4**. The majority of bicycles were counted using Cambridge Street during the peak hours.

Figure 6-3 Existing Conditions - Pedestrians

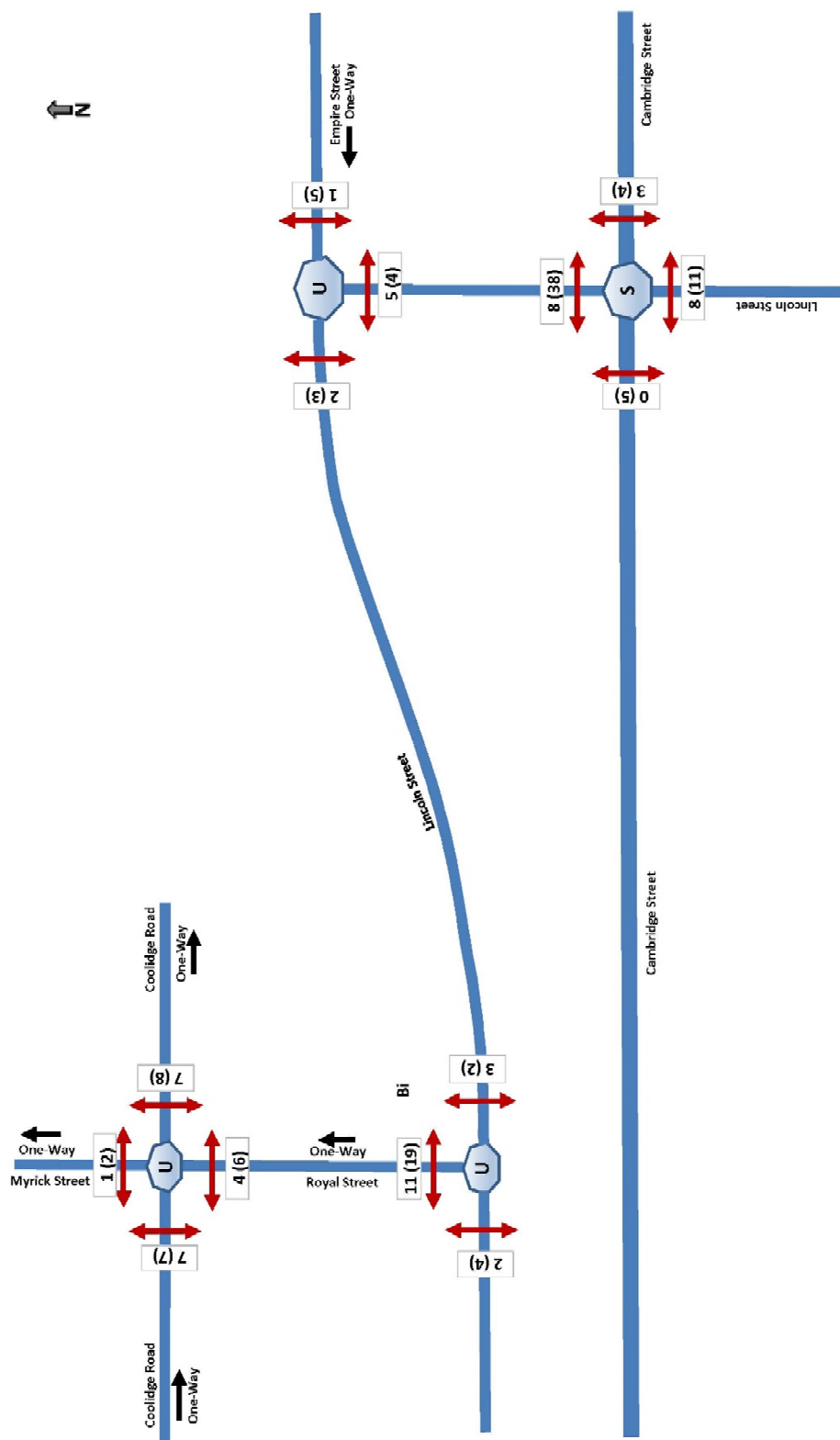


figure 6.3
Existing Conditions -
Pedestrians



LEGEND
AM (PM) Pedestrian Volumes
U= Unsignalized Intersection, S = Signalized Intersection

Figure 6-4 Existing Conditions - Bicycles

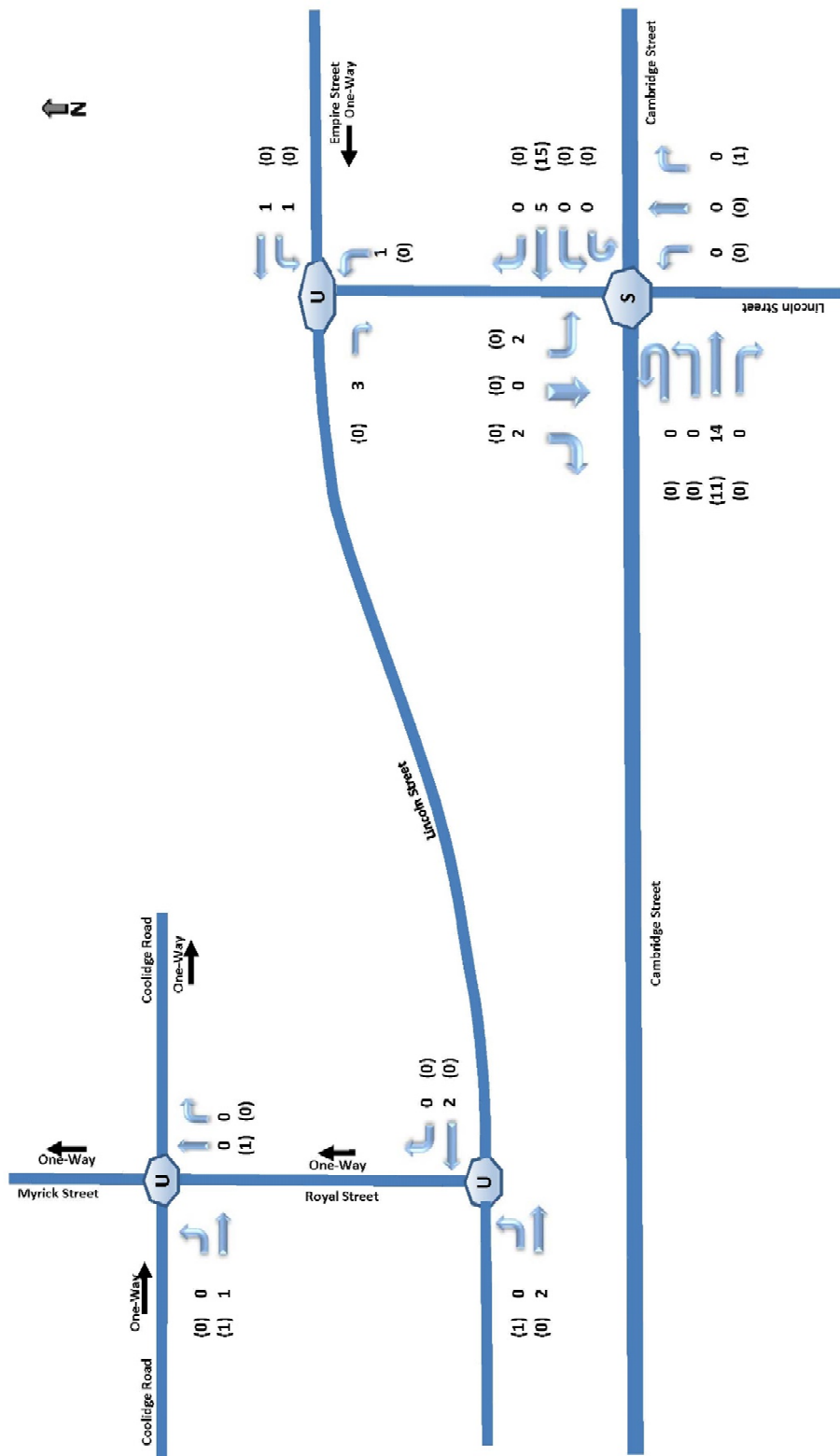


figure 6.4

Existing Conditions -

Bicycles



6.4.6 **Public Transportation**

The MBTA provides local bus and subway service within proximity of the Site as shown in **Figure 6-5**. In addition, the new Boston Landing Commuter Rail station provides service to South Station within a ten-minute walk from the Site. Nearby transit services are summarized in **Table 6-2**.

Table 6-2 MBTA Transit Services

| Service | Origin-Destination |
|---------------------|--|
| Route 57 | Watertown Yard - Haymarket via Kenmore Square |
| Route 64 | Oak Square - University Park or Kendall/MIT |
| Route 66 | Harvard Station - Dudley Station |
| Route 70A | North Waltham – University Park |
| Route 70 | Cedarwood, Market Place Drive or Central Square, Waltham – University Park |
| Route 86 | Sullivan Square Station – Reservoir Station (Cleveland Circle) |
| Route 501 | Downtown Boston – Brighton Center (limited service) |
| Route 502 | Copley – Watertown Yard (limited service) |
| Green Line - B Line | Boston College – Park Street |
| Commuter Rail | Framingham/Worcester – South Station |

Source: MBTA

6.4.7 **Car & Bicycle Share**

There are several car-share (Zipcar) and bicycle share (Blue Bike) locations near the Site. These amenities help to reduce auto-dependency in the neighborhood and are an attractive amenity for residents. Existing bicycle and car share locations are shown in **Figure 6-6**.

6.4.8 **Public Parking**

On-street parking is provided immediately adjacent to the Site on the north side of Lincoln Street. Parking is restricted in this segment during snow emergencies. Parking is generally unregulated in the neighborhood and ample on-street parking was observed. On-street parking regulations were inventoried to the north of the Turnpike during May 2019 and are shown in **Figure 6-7**.

Figure 6-5 Public Transportation

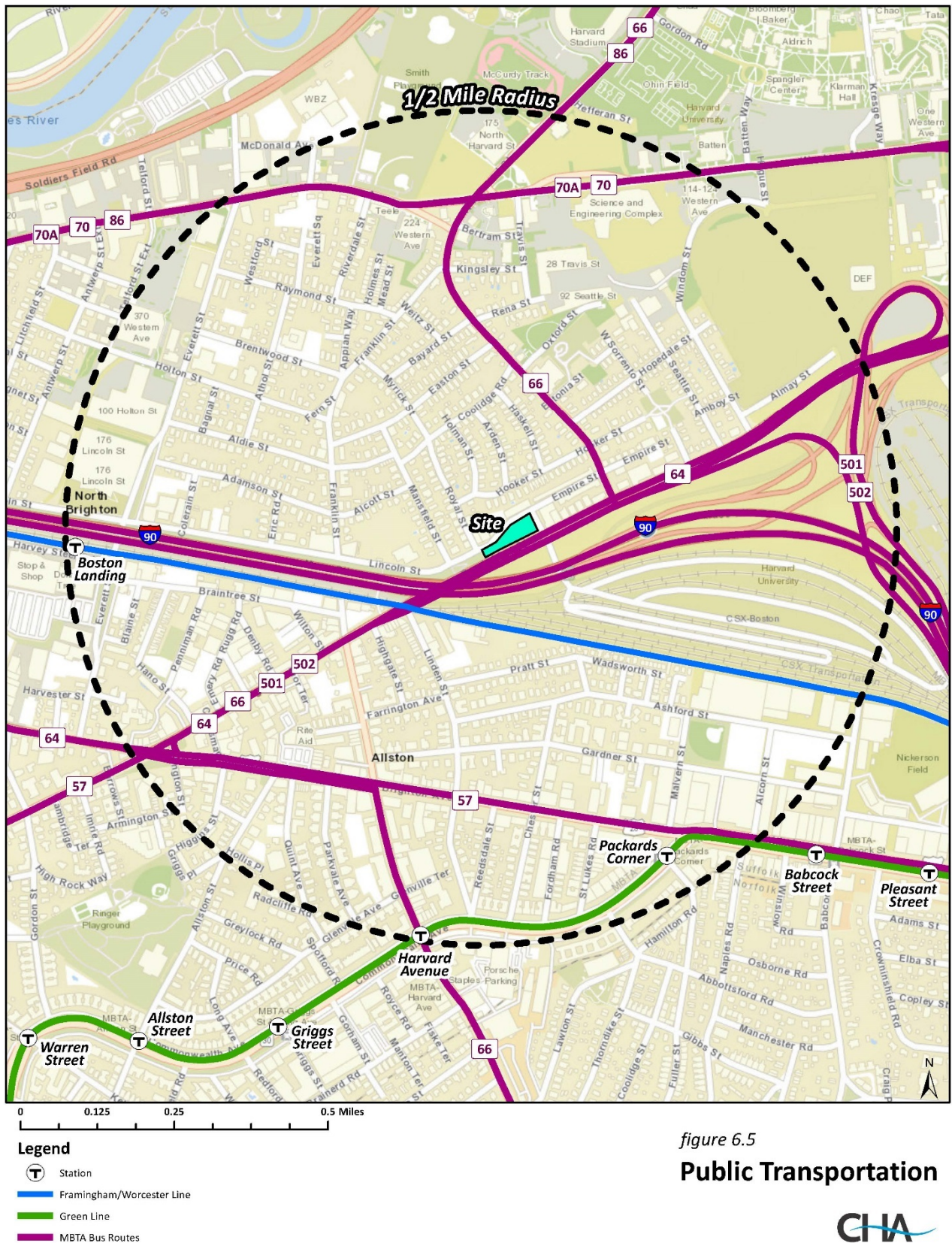
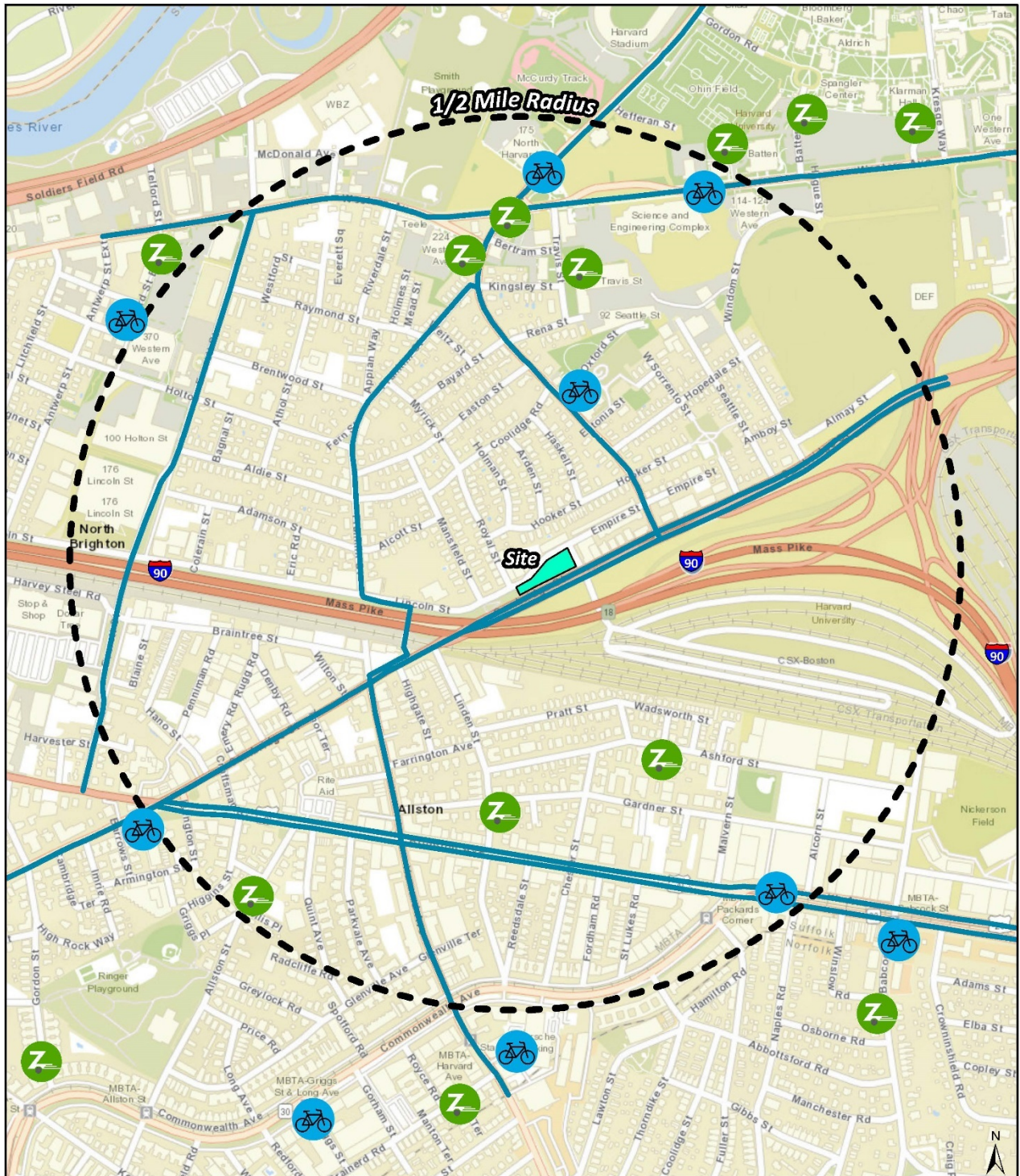


Figure 6-6 Existing Zipcar & Blue Bike Locations

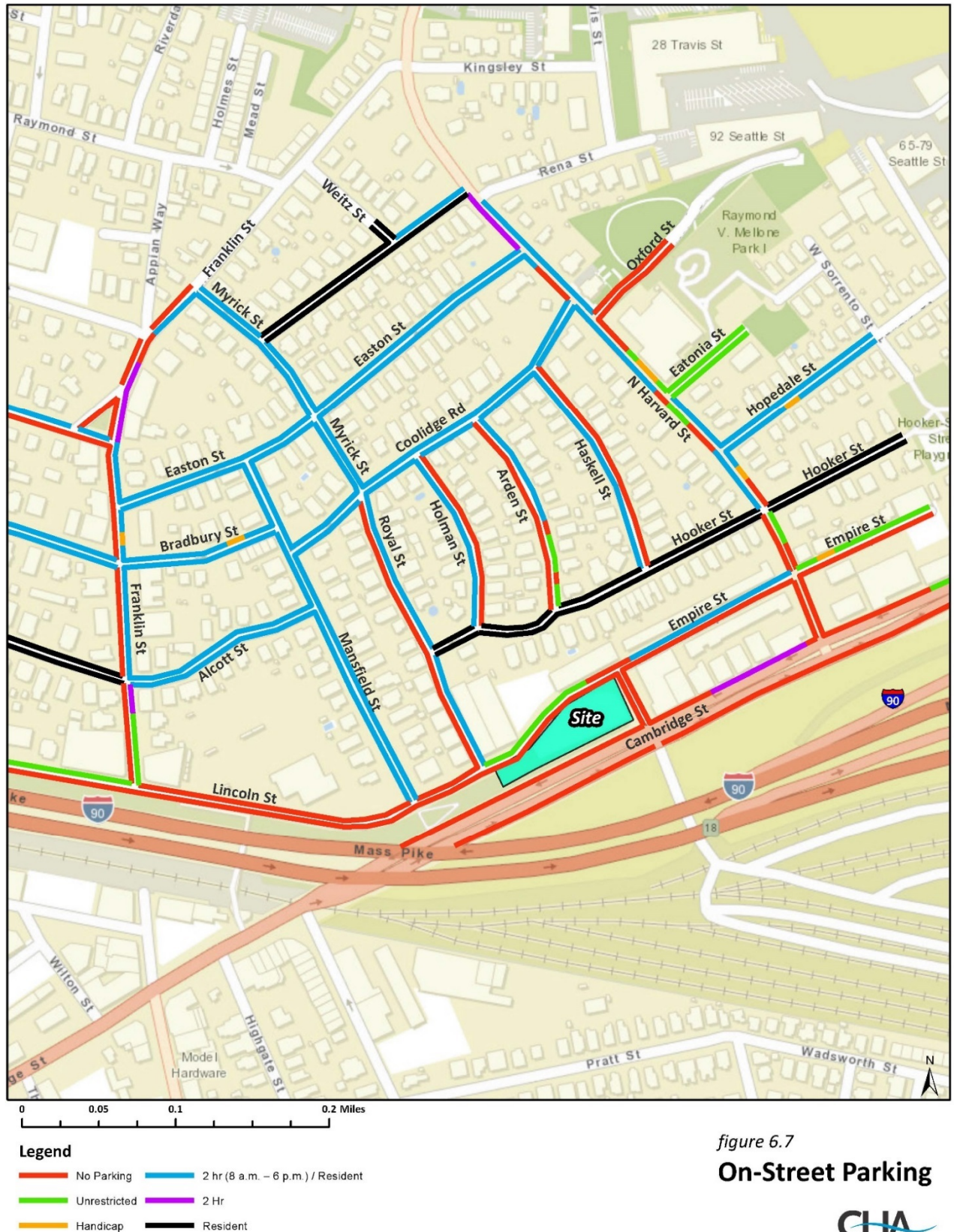


Legend

- Blue Bikes
- Zipcar
- Existing Bicycle Network

figure 6.6
Existing Zipcar & Blue
Bike Locations
CHA

Figure 6-7 On-Street Parking



6.5 2024 No Build Condition

The 2024 No-Build Condition considers area growth and transportation infrastructure change that may affect the study area's transportation operations independent of the Project. This analysis includes Project-specific growth that has been forecast as part of other area development projects as well as general background growth associated with an increasing city population or other development projects that may not have detailed traffic forecasts available.

The following projects are included in the 2024 No-Build Condition:

- 89 Brighton Avenue
- 40 Rugg Road
- Allston Square
- Allston Yards

In addition, a 0.5 percent annual growth rate was applied to existing traffic volumes to account for additional development in the area and general population growth. **Figure 6-8** displays the 2024 No-Build Condition volumes.

6.6 2024 Build Condition

The 2024 Build Condition assumes completion and full occupancy of the Project and includes the addition of ten (10) studios and seventy (70) co-living suites. It was assumed that the community amenities on site would not generate substantially to peak hour trip estimates.

6.6.1 *Site Access and Circulation*

The Project plans to relocate the existing curb-cut on Lincoln Street to provide access to 30 on-site parking spaces for residents. An adjacent surface lot at 510 Lincoln Street can also provide sixteen (16) spaces for guests or overnight parking. In addition, there will be one-hundred sixty (160) bicycle spaces provided for residential tenants. Additional bicycle spaces will be provided at-grade for public use. The Site Plan is provided on **Figure 6-9**.

Figure 6-8 2024 No-Built Conditions - Vehicles

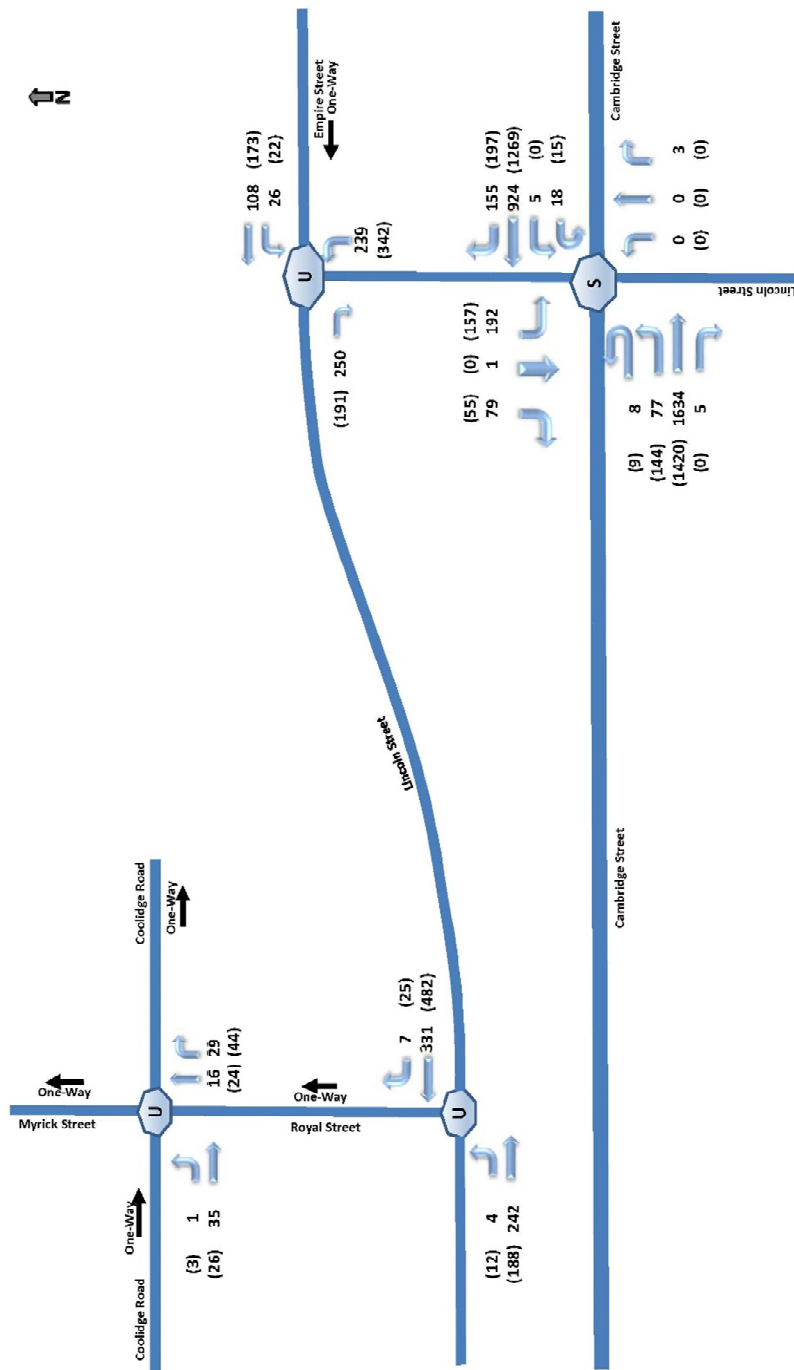
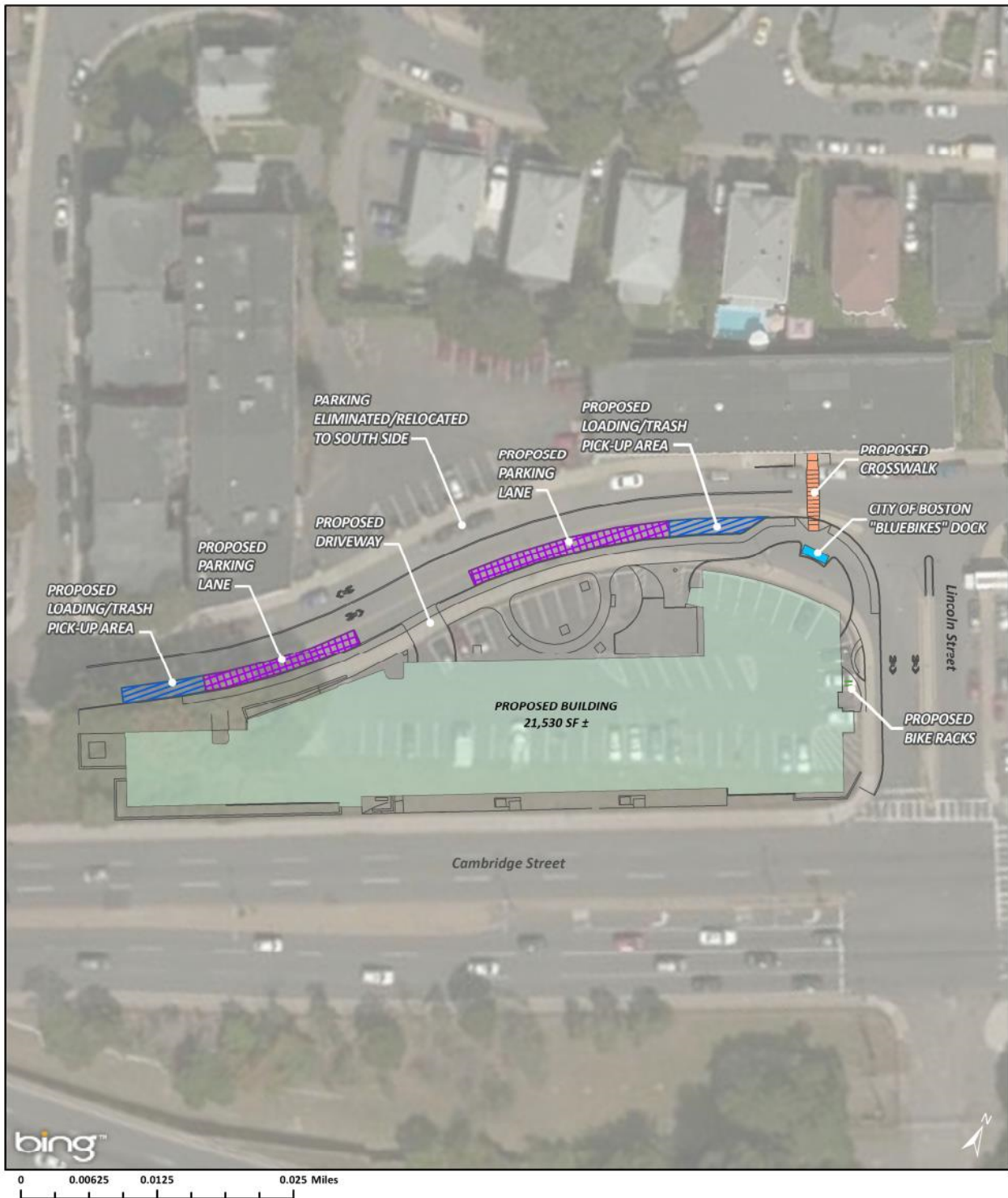


figure 6.8
2024 No-Built Conditions -
Vehicles
CWA

LEGEND
AM (PM) Traffic Volumes
U= Unsignalized intersection, S= Signalized intersection

Figure 6-9 Annotated Site Plan



Design Drawing Elements Courtesy of:
 **BOHLER**
ENGINEERING

figure 6.9
Site Plan


6.6.2 Trip Generation and Trip Distribution

Project trip generation was estimated using trip generation rates from the Institute of Transportation Engineers (“ITE”) Trip Generation Manual, 10th Edition. The following land use code (“LUC”) was used:

- LUC 221: Multifamily Housing (Mid-Rise)

ITE’s trip generation provides unadjusted vehicle trips assuming that all trips are vehicle trips. These unadjusted trips were converted to person trips using national vehicle occupancy rates. To account for local commuting trends such as walking, bicycling and transit use, local mode splits were then applied to the unadjusted trip estimates. **Table 6-3** provides a summary of the local mode splits.

Table 6-3 Residential Mode Share

| Mode Choice | Daily | AM Peak Hour | PM Peak Hour |
|-------------------------|-------|--------------|--------------|
| Single Occupant Vehicle | 33.4% | 17.1% | 24.7% |
| Carpool | 27.8% | 17.1% | 22.8% |
| Walk | 23.2% | 45.5% | 33.3% |
| Bicycle | 3.2% | 2.1% | 3.1% |
| Transit | 12.4% | 18.0% | 16.0% |

Source: Go Boston 2012

The resulting Project-generated by mode are shown in **Table 6-4**.

Table 6-4 Adjusted Trip Generation

| Time of Day | Vehicle Trips* | Walk/Bicycle Trips | Transit Trips |
|---------------------|----------------|--------------------|---------------|
| Daily Total | 266 | 130 | 60 |
| AM Peak Hour | | | |
| In | 3 | 4 | 2 |
| Out | <u>7</u> | <u>12</u> | <u>4</u> |
| Total | 10 | 16 | 6 |
| PM Peak Hour | | | |
| In | 10 | 9 | 4 |
| Out | <u>7</u> | <u>6</u> | <u>3</u> |
| Total | 17 | 15 | 7 |

*Includes SOV, HOV and rideshare vehicles

The Project is estimated to generate approximately 10 vehicle trips (3 entering and 7 exiting) during the morning peak hour and 17 vehicle trips (10 entering and 7 exiting) during the evening peak hour. In addition, the Project will generate approximately 16 walk/bike trips and 6 transit trips during the morning peak hour. During the evening peak hour, the Project will generate approximately 15 walk/bike trips and 7 transit trips. The distributed vehicular Site trips are provided in **Figure 6-10**.

Project trips were distributed to the local street network using proportionately to the existing traffic on adjacent streets. Most Project-generated traffic will travel to and from Cambridge Street. The 2024 Build Condition volumes are displayed in **Figure 6-11**.

6.6.3 *Parking & Bicycle Storage*

It is anticipated that the Project's new co-living residents will have a lower demand for parking compared to residents in traditional residential units. The Project proposes thirty (30) on-site structured parking spaces with the ability to add approximately additional thirty (30) spaces if necessary with a mechanical parking solution. This parking will serve the on-site residents. The parking ratio of 0.38 is consistent with the City's goals to reduce on-site parking as part of developments. An additional sixteen (16) parking spaces can be provided in the nearby 510 Lincoln Street lot for overnight or guest parking.

Secure on-site bicycle storage will be provided for (one-hundred sixty) 160 bicycles on-site. This rate of two (2) bicycle spaces per unit exceeds BTD bicycle parking guidelines. In addition, public bicycle spaces will be provided at-grade for visitors.

Figure 6-10 Project Generated Trips

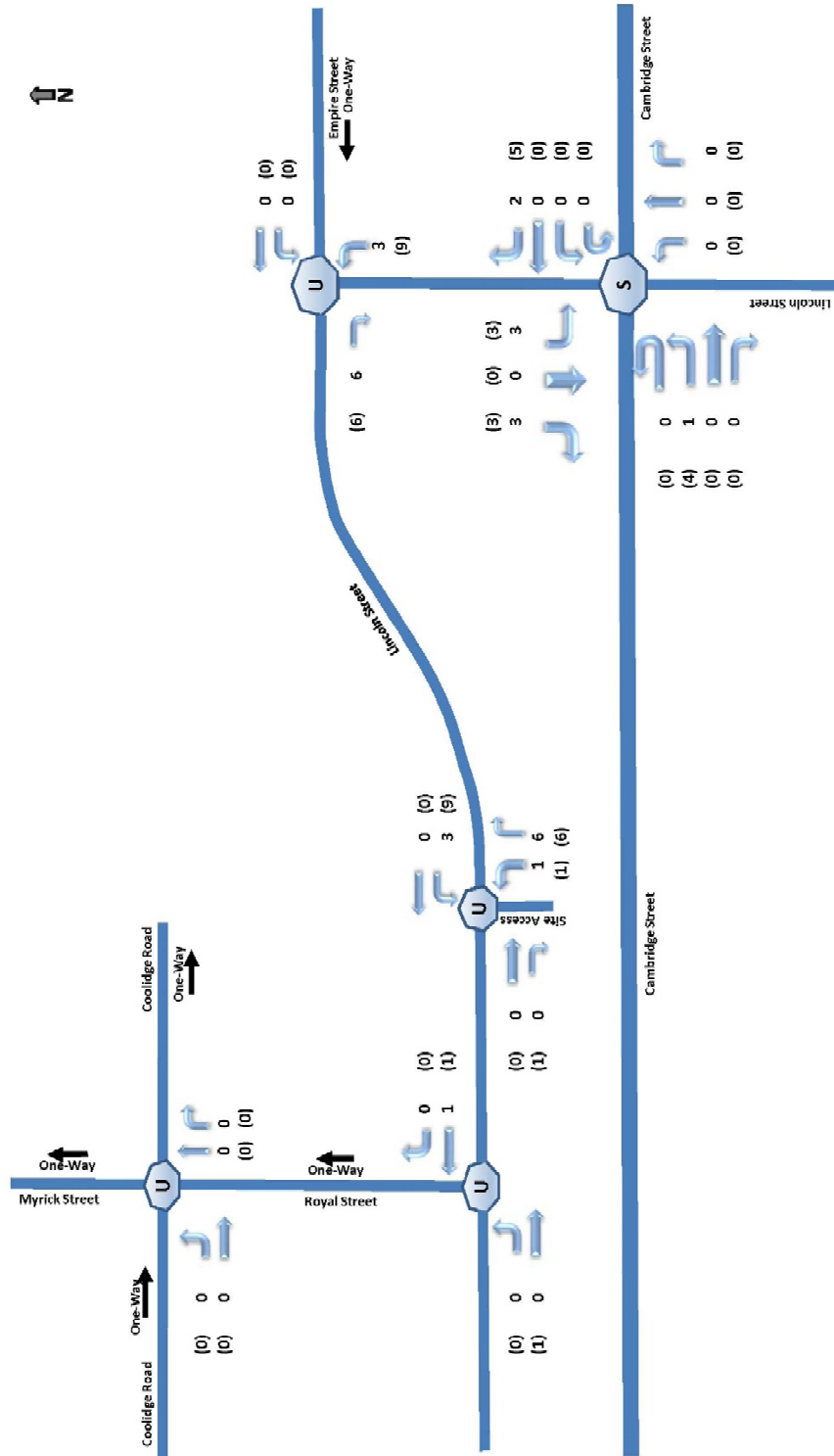


figure 6.10

Project Generated Trips



LEGEND
 AM (PM) Traffic Volumes
 U= Unsignalized intersection, S= Signalized intersection

Figure 6-11 2024 Build Volumes - Vehicles

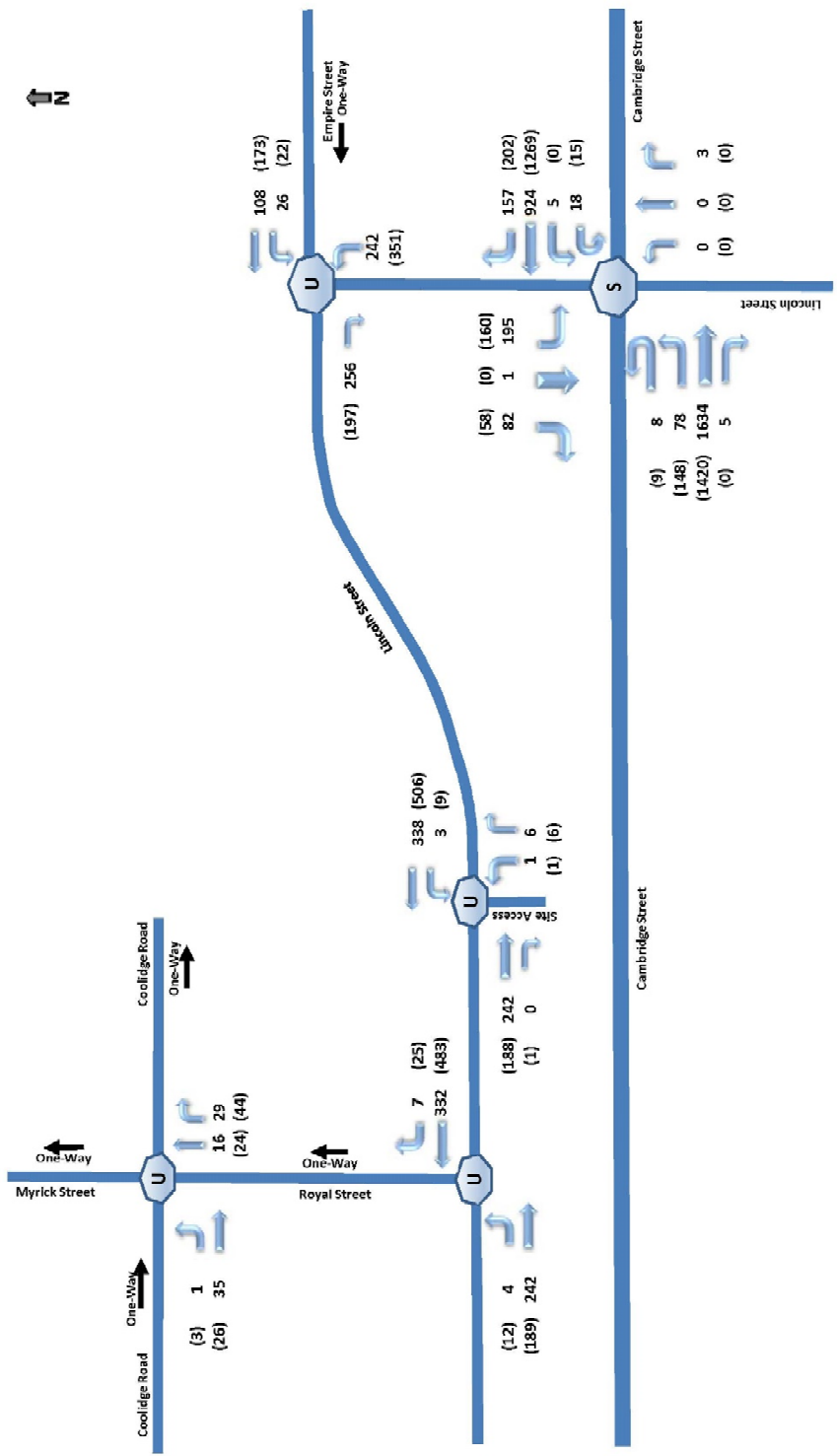


figure 6.11
2024 Build Volumes -
Vehicles



LEGEND
AM (PM) Traffic Volumes
U = Unsignalized intersection, S = Signalized intersection

6.6.4 Curbside Operations & Loading

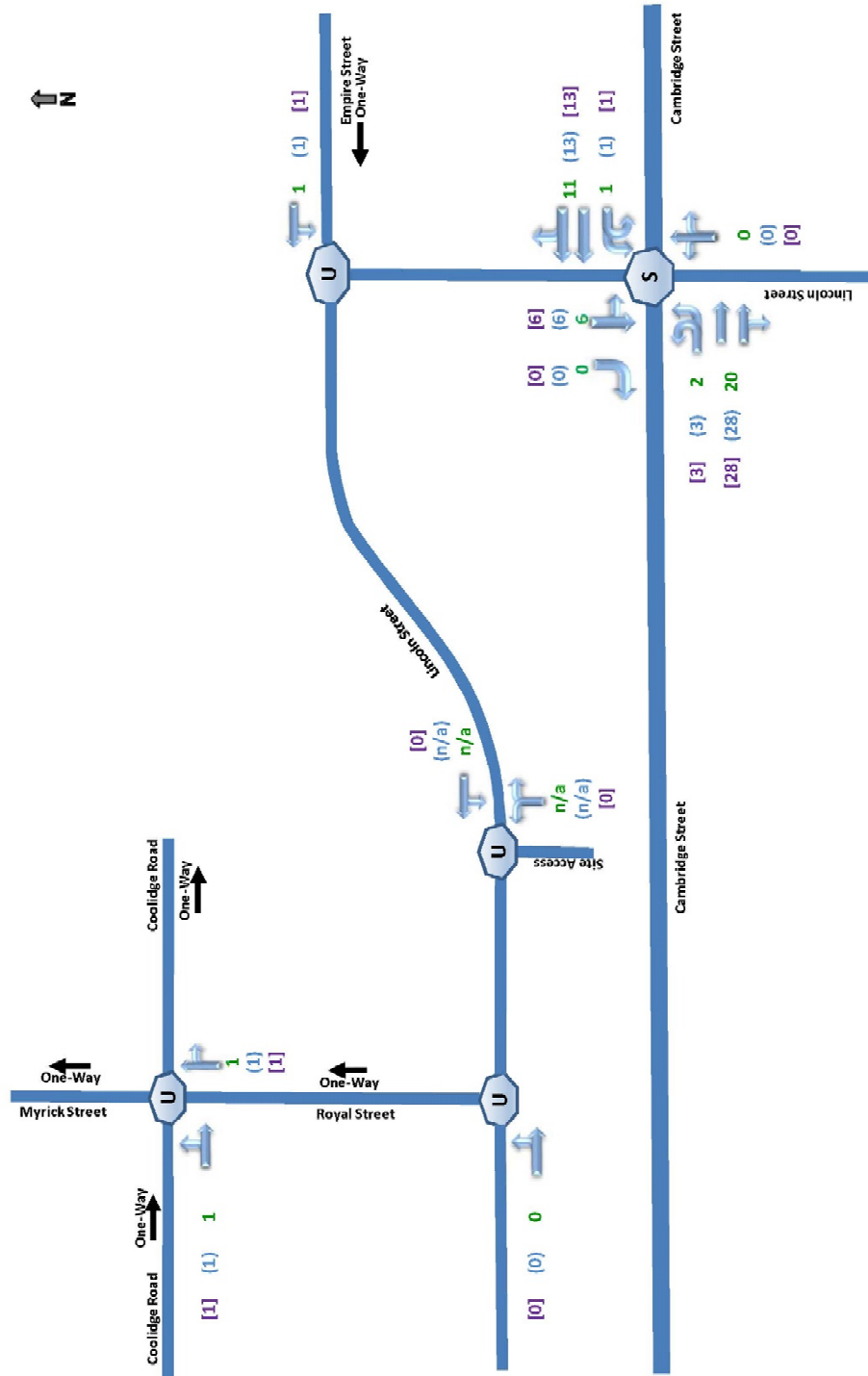
The Project proposes a dedicated 40-foot loading zone on Lincoln Street for trash pick-up. The Project team will work with BTM to identify hours for this to be a delivery zone and propose that during other hours, including overnight, the area allow for residents or others to park.

The Project also includes a dedicated 20-foot drop-off/pick-up area on Lincoln Street next to the main Building lobby. This area will accommodate rideshare vehicles (e.g., Uber and Lyft) so that bicycle and vehicle operations are not impacted. This drop-off/pick-up area will also accommodate typical residential delivery vehicles such as mail and other package deliveries.

6.7 Intersection Operational Analysis

BTM requested queue lengths, rather than levels of service (“LOS”), be reported at the study intersections to evaluate existing and future operations. Existing queues were observed in the field on a typical weekday to ensure that the Synchro model used for the analysis was calibrated to field conditions. A summary of the 2019 Existing, 2024 No-Build, and 2024 Build queues is provided in **Table 6-5** and on **Figure 6-12** through **Figure 6-13**. The detailed LOS analysis is provided in Appendix A for reference.

Figure 6-12 Build Queue Summary AM Peak Hour

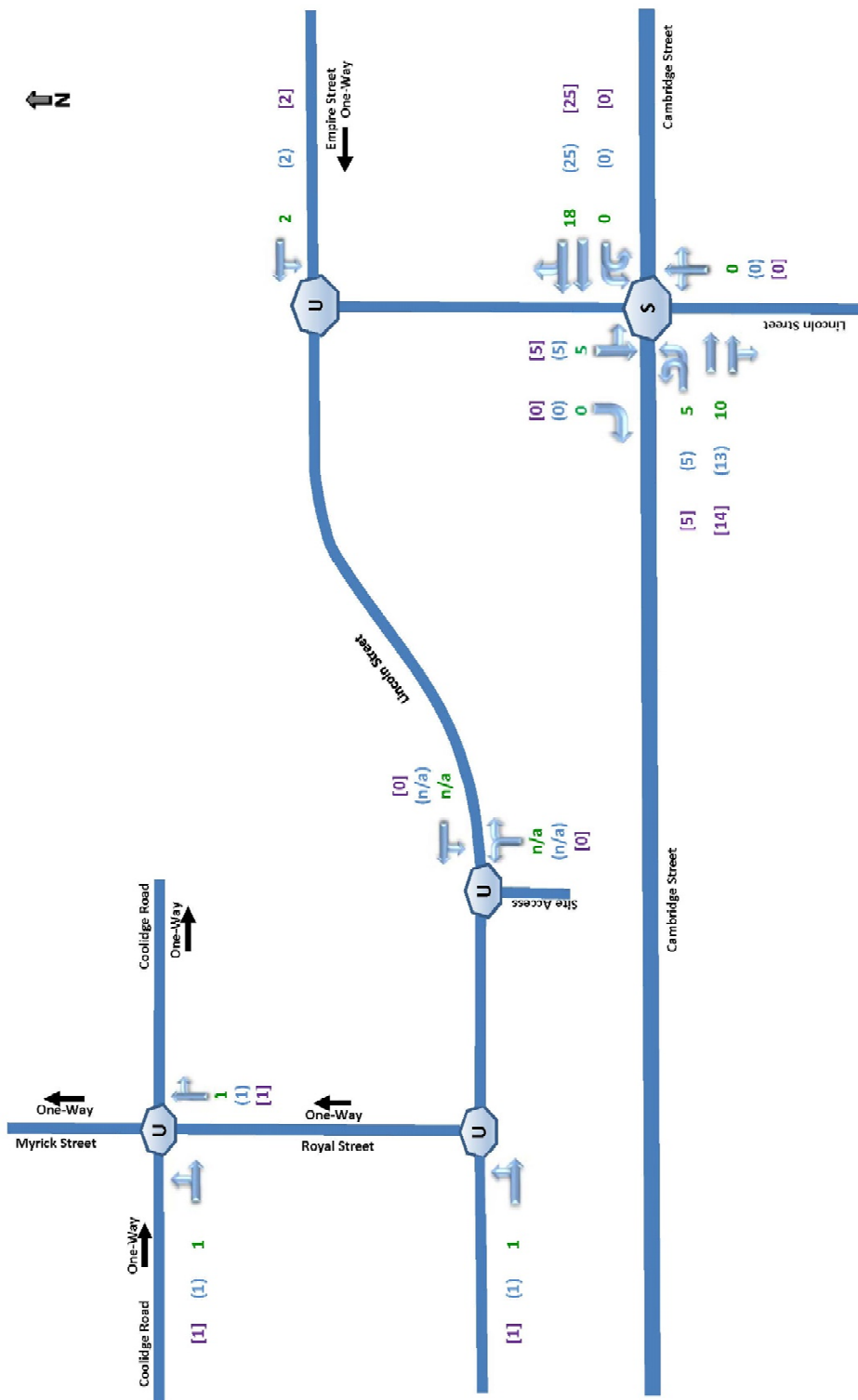


LEGEND
Existing (No-Build) [Build]

Signalized Intersection: 50th%ile queue (n # of vehicles), Unsignalized Intersections: 95th%ile queue (n # of vehicles)
 U= Unsignalized Intersection, S = Signalized Intersection
 n/a = Not Applicable

figure 6.12
Build Queue Summary
AM Peak Hour
 CHA

Figure 6-13 Build Queue Summary PM Peak Hour



LEGEND
Existing (No-Build) [Build]
 Signalized Intersection: 50th %ile queue (in # of vehicles), Unsignalized Intersections: 95th %ile queue (in # of vehicles)
 U= Unsignalized intersection, S = Signalized intersection
 n/a = Not Applicable

figure 6.13
 Build Queue Summary
 PM Peak Hour
 CWA

Table 6-5 Cambridge St at Lincoln St: Average Queue Length Comparison (Vehicles)

| Time Period | Approach | Movement | 2019 Existing | 2024 No-Build | 2024 Build |
|---------------|---------------|--------------|---------------|---------------|------------|
| AM Peak Hour | Cambridge EB | UT/L | 2 | 3 | 3 |
| | | T/R | 20 | 28 | 28 |
| | Cambridge WB | UT/L | 1 | 1 | 1 |
| | | T/R | 11 | 13 | 13 |
| | Driveway NB | L/T/R | 0 | 0 | 0 |
| | Lincoln St SB | L/T | 6 | 6 | 6 |
| | | R | 0 | 0 | 0 |
| | PM Peak Hour | Cambridge EB | UT/L | 5 | 5 |
| T/R | | | 10 | 13 | 14 |
| Cambridge WB | | UT/L | 0 | 0 | 0 |
| | | T/R | 18 | 25 | 25 |
| Driveway NB | | L/T/R | 0 | 0 | 0 |
| Lincoln St SB | | L/T | 5 | 5 | 5 |
| | | R | 0 | 0 | 0 |

EB – Eastbound, WB- Westbound. NB – Northbound, SB – Southbound

UT- U-turn, L – Left, T – Through, R – Right

As shown, with the addition of the Site traffic, operations are estimated to be similar to the No-Build Condition, with only a minor change in queue length (1 vehicle) heading eastbound on Cambridge Street during the evening peak hour.

For unsignalized intersections within the study area, the 95th percentile queues were reviewed as the HCM 6 results do not produce 50th percentile queues. The 95th percentile queue is a statistical measure indicating the theoretical maximum queue occurring within the peak hour of study. The Existing queues are minimal at the unsignalized intersections within the study area, with the maximum 95th percentile queue estimated to be two vehicles on the westbound approach of the Lincoln Street at Empire Street intersection during the PM peak hour. The Build Condition queues at the unsignalized intersections are estimated to be the same as Existing Condition.

As Build operations are estimated to be consistent with No-Build, no mitigation to the study intersections are recommended. However, a travel demand management plan has been developed to encourage alternate modes of transportation. This plan is described in **Section 6.8.1**.

6.8 Mitigation

The Project proposes transportation mitigation to offset any impacts in the neighborhood. This includes both TDM measures to encourage alternative modes of transportation and vehicle sharing to reduce auto trips. It also includes streetscape improvements to improve the pedestrian realm.

6.8.1 *Transportation Demand Management*

The Project will encourage alternative modes of transportation by implementing a comprehensive TDM plan. These measures will be specified in the forthcoming Transportation Access Plan Agreement (TAPA), a legally binding agreement with BTM, to finalize all transportation-related mitigation measures.

The Project is committed to the following TDM measures:

- Charging market rates for parking separate from lease agreements
- Providing electric vehicle charging stations
- Providing Building-dedicated electric vehicles available to be shared by the tenants through a partnership with Envoy
- Providing secure on-site bicycle parking
- Providing publicly accessible visitor bicycle parking at grade
- Providing a new Blue Bike Station or similar at the Site
- Providing real-time transit screen in the Building's lobby
- Providing new residents with an informational package on alternative transportation measures available in the area such as car-sharing, ride-sharing, bike-sharing, and MBTA services
- In addition, the Proponent is investigating additional benefits such as:
 - Prohibiting tenants from receiving Resident Parking Permits from the City for neighborhood street parking
 - Partnering with local shuttle services that are currently being planned in the area
 - Providing shared electric vehicles on-site for Project residents
 - Providing shared scooters (pending approval in the City)
 - Providing a transit wallet that would provide benefits for the use of public transportation
 - Providing an on-site bicycle repair station
 - Providing loaner bicycles for residents and visitors

The Proponent will enter into a TAPA with the BTM to codify all transportation-related measures including TDM.

6.8.2 *Pedestrian Realm Improvements*

The Project proposes widened and improved sidewalks along Lincoln Street adjacent to the Site. A new crosswalk is also proposed at the intersection of Lincoln Street and Empire Road for pedestrians to provide access to the Site and the new bicycle share station.

Additionally, the Project will work with the Friends of the Lincoln Street Green Strip and the ABCDC on the implementation and maintenance of their Master Plan for the adjacent public park.

All improvements within the public realm will be coordinated with BTM and are subject to approval by the Public Improvement Commission ("PIC").

6.8.3 *Construction Management Plan*

A Construction Management Plan ("CMP") will be required as part of the Project. This plan will identify any construction-related impacts in the public-realm and is subject to approval by BTM. The plan will include any necessary sidewalk closures, truck routing, temporary changes to on-street parking, detours, and measures to encourage non-auto trips to the Site by subcontractors during the construction phase. Efforts will be made as part of the CMP to minimize impacts to the adjacent transportation system.

7.0 INFRASTRUCTURE SYSTEMS

7.1 Overview of Utility Services

The Site's current use is an underutilized surface parking lot with no existing service connections. Therefore, no utility cut and caps or disconnects are anticipated. The existing infrastructure surrounding the Site is anticipated to have adequate capacity to service the Project needs. Existing sanitary sewer, storm drainage, water, gas, electric and telecommunications lines are in the Project's vicinity.

Approval of Site plans and a General Service Application are required from the BWSC for construction and activation of sewer, water, and storm drainage service connections. The final sewer and water connections, as well as the Project's stormwater management system, will be designed in conformance with BWSC's design standards, Requirements for Site Plans, Regulations Governing the Use of Sanitary and Combined Sewers and Storm Drains, and Regulations Governing the Use of the Water Distribution Facilities of the Boston Water and Sewer Commission.

A Drainage Discharge Permit Application will be submitted to BWSC for any required construction dewatering. The appropriate approvals from the MassDEP and the EPA will also be sought.

7.2 Water System

7.2.1 *Existing Water Service*

BWSC owns, operates, and maintains the water distribution systems near the Site. Per BWSC GIS Maps, an existing 8-inch cast iron main built in 1875 and rebuilt in 1991 is located west of the Site in Lincoln Street, an existing 8-inch cast iron main built in 1906 and rebuilt in 1996 is located east of the Site in Lincoln Street, and an existing 8-inch cast iron main built in 1907 and rebuilt in 1996 is located north of the Site in Lincoln Street. An existing hydrant is located north of the Site on the opposite side of Lincoln street. The extent of existing water distribution near the Site is shown on **Figure 7-1**.

7.2.2 *Estimated Proposed Water Demand*

The estimated proposed water demand for the Project is based on the estimated sanitary sewer flow (see **Table 7-1**), with a factor of 1.1 applied to account for consumption and other losses. Based on this formula, the Project's estimated peak water demand for domestic uses is 34,122 gallons per day. The domestic water will be supplied by the BWSC water system.

Based on discussions with BWSC, there are no expected water capacity issues near the Site. Prior to full design, this will be confirmed by flow testing by BWSC. The Project's engineer will coordinate water demand and availability with BWSC during Project design to ensure the Project needs are met while maintaining adequate water flows to the surrounding neighborhood.

7.2.3 *Proposed Water Service*

Per the latest architectural design, it is anticipated that the domestic and fire protection services will connect to the 8-inch main in Lincoln Street west of the Site. Final service locations will be coordinated with BWSC. Metering will be conducted in accordance with BWSC requirements including the installation of meter transmission units (MTU's) to comply with BWSC's automatic meter reading system. Appropriate gate valves and backflow prevention devices will also be installed on each water service to allow individual services to be shut off and to prevent potential backflow of non-potable water or other contaminants into the public water supply. See **Figure 7-2** for proposed water service connections.

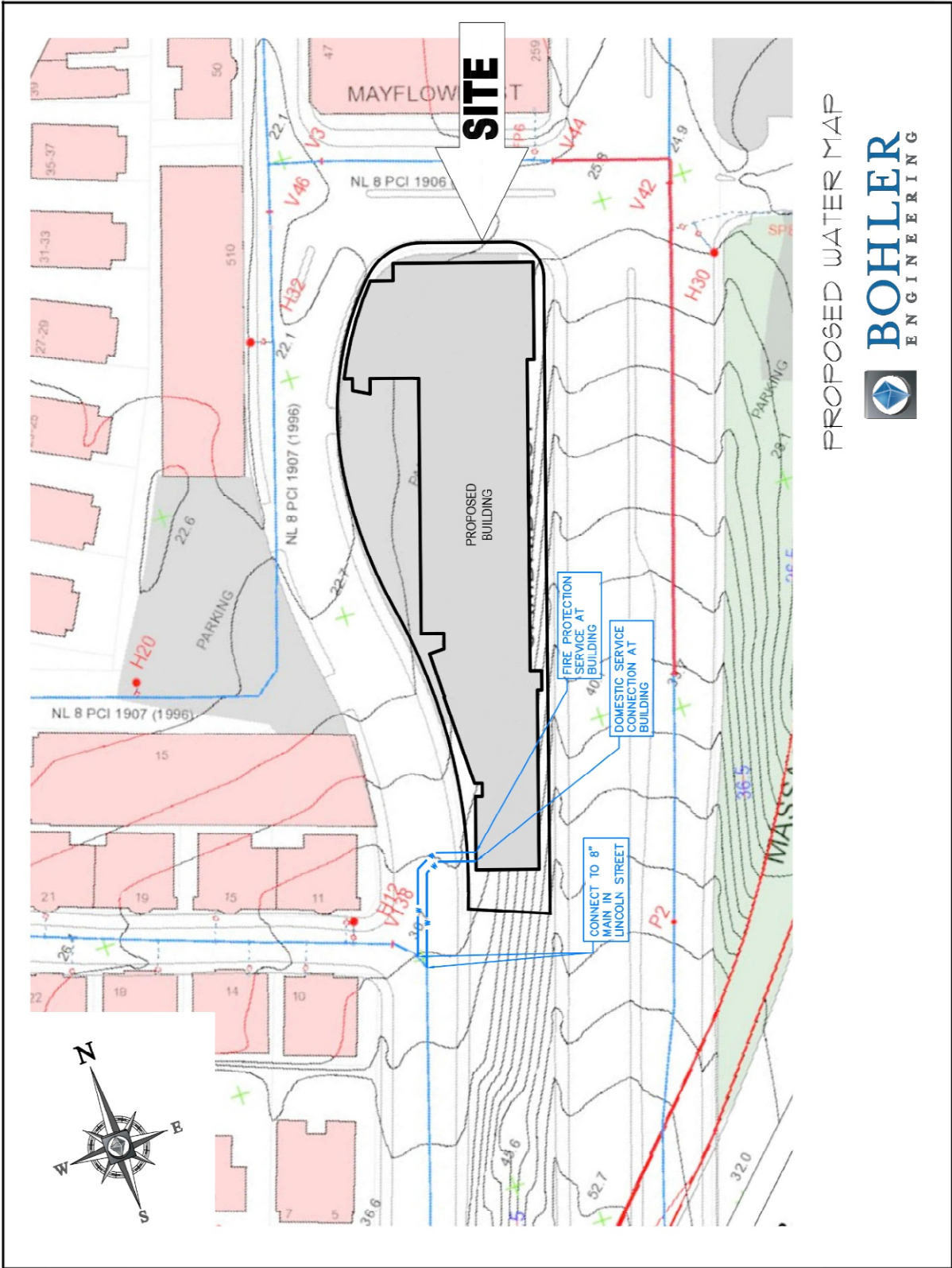
The Project is also expected to include a fire protection service. The size and location of this service connection will be coordinated between the Project's engineer and BWSC. Appropriate gate valves and backflow prevention devices will also be installed to allow individual services to be shut off and to prevent potential backflow of non-potable water or other contaminants into the public water supply.

At this point in the design it anticipated that additional fire hydrants will be proposed as there is only one (1) existing fire hydrant in the surrounding area. Any additional proposed hydrants will be coordinated with the Boston Fire Department ("BFD").

EXISTING WATER MAP

BOHLER
ENGINEERING

Figure 7-2 Proposed Water Map



7.2.4 *Water Supply Conservation and Mitigation*

The Project will be LEED certifiable in accordance with the BRA's Article 37 Green Building program. As such, various water conservation measures such as low-flow toilets and urinals, restricted flow faucets, and sensor operated sinks, toilets, and urinals may be incorporated to meet the LEED water conservation requirements. Specific water conservation measures to be included in the Project will be more fully described as the Building designs develop.

7.3 Sanitary Sewer System

7.3.1 *Existing Sanitary Sewer System*

BWSC owns, operates, and maintains the sanitary sewer mains near the Site.

The extent of existing sanitary sewer distribution near the Site is shown in red on **Figure 7-3**. Per the latest BWSC GIS mapping there is a separated 10-inch sewer main within Cambridge Street and 10-inch sewer main west of the Site within Royal Street that extends to Cambridge Street.

7.3.2 *Estimated Proposed Sanitary Flow*

MassDEP establishes sewer generation rates for various types of establishments in a section of the State Environmental Code Title V ("Title 5"), 310 CMR 15.203. Based on an estimate of the Project's building program, **Table 7-1** gives the estimated proposed sanitary sewer flows expected to be generated by the Project. Based on these Title V sewer generation rates, the project is expected to produce approximately 31,020-gallons/day of sewer flow. The proposed sewer generation calculation will be refined as final sewer generation flows are coordinated with BWSC.

Table 7-1 Sewer Generation

| Unit Type | Program | Sewer Generation Rate | Sewer Flow (gpd) |
|-------------------------------|--------------------|-------------------------|------------------|
| Multifamily (Residential) | 80 units, 282 beds | 110 gallons/day/bedroom | 31,020 |
| Total Sewer Generation | | | 31,020 |

Based on preliminary calculations and discussions with BWSC, there are no known sewer capacity problems near the Site. The Project's engineer will coordinate final, proposed sewer flows and available capacity with BWSC during Project design to ensure the Project needs are met without disruption of service to the surrounding area.

7.3.3 *Proposed Sanitary Sewer Connections*

Service connections are anticipated to occur in Cambridge Street. The size and location of the service connection(s) will be coordinated between the Project's plumbing engineer and the BWSC. Floor drains from the covered levels of the parking garage will be collected and routed through an approved oil/grease separator prior to discharge into the sanitary sewer system.

Sewer connections will be constructed to minimize effects on adjacent streets, sidewalks, and other areas within the public right-of-way, and sewer service connections will be kept separate from storm drain connections in accordance with BWSC requirements. Per current BWSC records, it appears that all storm and sewer drains within Lincoln Street and Cambridge Street are separated. See **Figure 7-4** for proposed sanitary sewer service connections.

Project Notification Form
525 Lincoln Street

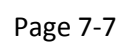
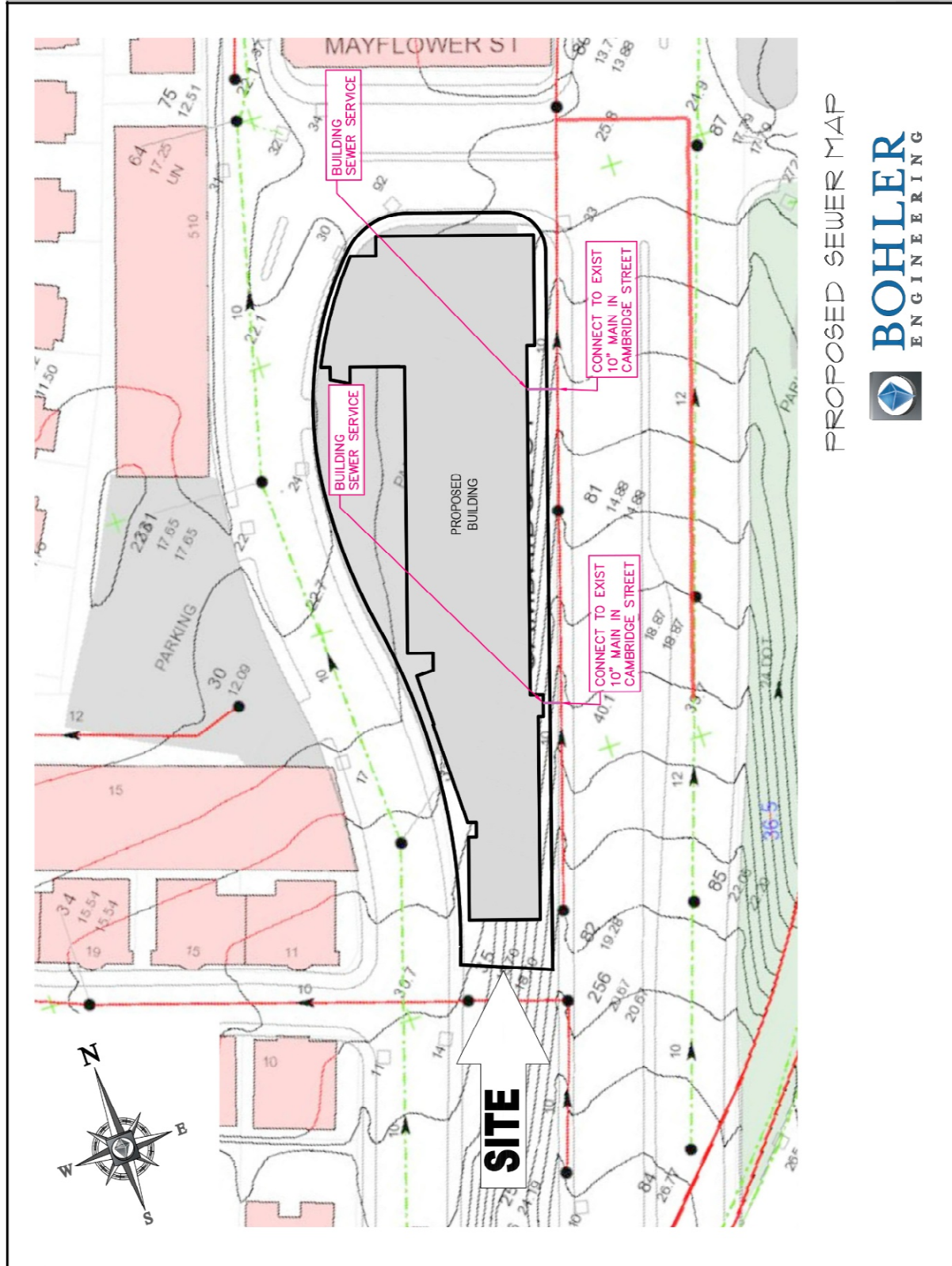


Figure 7-4 Proposed Sewer Map



PROPOSED SEWER MAP



7.3.4 Sewer System Mitigation

The sanitary sewer connections are subject to approval by the municipal sewer system owner, BWSC, as part of the Site plan approval process. As part of the Project mitigation, the Project will need to mitigate inflow and infiltration (I/I) into the BWSC sewer system, and ultimately the MWRA regional wastewater system, at a rate of 4-gallons for every 1-gallon of new sewer flow. Currently, the BWSC calculates the monetary amount required to fulfill the 4:1 Inflow Reduction requirement by multiplying the estimated wastewater flow by 4 and then by \$2.41. The Proponent will continue to work with BWSC as the building program is finalized to identify the I/I payment to be made.

Additionally, as stated in the Water Supply Conservation and Mitigation Section, various measures for water use reduction, which translates directly into wastewater reduction, are being implemented into the design which will also benefit the overall goal of reducing the volume of flows being sent to the MWRA wastewater treatment facility.

7.4 Storm Drainage System

7.4.1 Existing Storm Drainage System

The existing Site is currently occupied by a surface parking lot of approximately 20,400± SF (0.47 acres) and 12,189± SF (0.28 acres) of landscaped area. Runoff from the Site currently runs to the existing drainage infrastructure within Lincoln Street, which drains east within Lincoln Street.

See **Figure 7-3** for existing drainage infrastructure from BWSC.

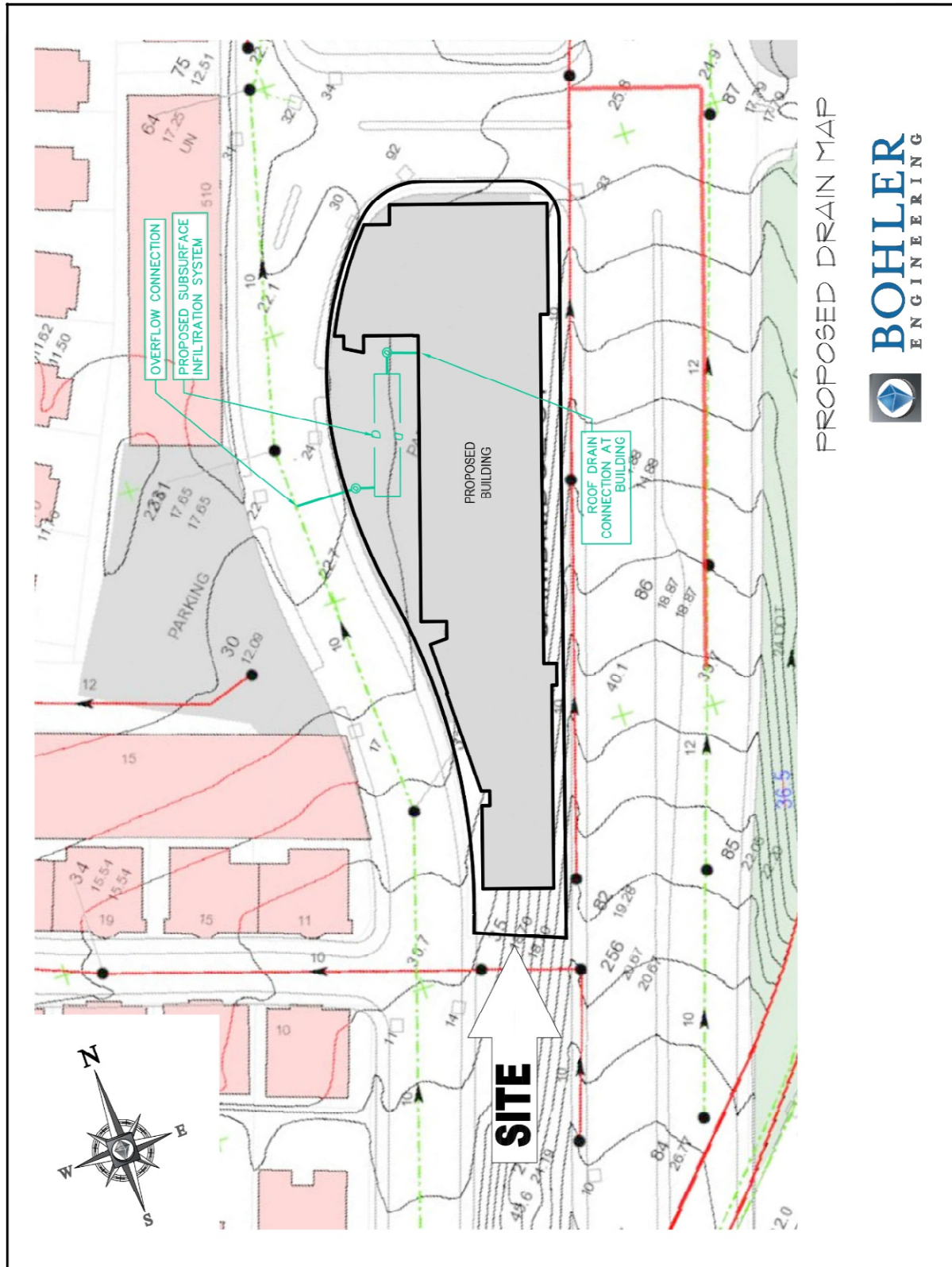
7.4.2 Proposed Storm Drainage System

The proposed stormwater management system will be designed to comply with BWSC requirements. It is anticipated that stormwater runoff will be collected and treated on-site, as necessary, and will be routed to subsurface infiltration systems to reduce the impact on the BWSC drainage system. At a minimum, on-site systems will be designed with a capacity of 1.25-inches over the impervious area of the Site. Appropriate stormwater best management practices ("BMP's") are to be included in the Project to improve the quality of stormwater runoff discharged from the Site, to promote infiltration to groundwater, and to ensure peak flows are at or below existing levels. Overflow connections from the underground infiltration/detention areas are proposed to handle larger, less frequent storm events and will discharge to the BWSC drain system.

See **Figure 7-5** for a schematic design of the proposed storm drainage connection points and underground stormwater infiltration/detention systems. A long-term operations and maintenance plan will be used to assist the Property Manager in maintaining the stormwater BMP's in appropriate operational condition.

The Site is located within the Charles River watershed and will be required to meet the phosphorus TMDL reduction standards. The drainage design will incorporate proprietary structure or infiltration measures to mitigate phosphorous levels in accordance with these standards.

Figure 7-5 Proposed Drain Map



7.5 Electrical Services

Eversource owns and maintains the electrical infrastructure within the Project's general vicinity. Existing underground electric lines are located within Lincoln Street and Cambridge Street.

7.6 Telecommunication Services

All energy and telecommunications connections will be coordinated with the appropriate utility companies and the City. Existing Comcast overhead telecommunication lines are located north and northeast of the Site on Lincoln Street and at the northwest corner of the Site at the intersection of Lincoln Street and Royal Street and within Royal Street running parallel to the western side of the Site through Cambridge Street. Final service and appropriate connection points will be coordinated with private utility providers as the Project design progresses.

7.7 Natural Gas System

National Grid provides natural gas service in the Project area. One (1) 4-inch low pressure gas line exists within Empire Street and Lincoln Street; one (1) 24-inch low pressure gas main exists in Cambridge Street; and one (1) 16-inch low pressure gas line runs along the western side of the Site and separates into two (2) lines: one (1) 16-inch low pressure line running west in Lincoln Street and one (1) 10-inch low pressure line running north on Royal Street. Final service and appropriate connection points will be coordinated with National Grid as the Project design progresses.

7.8 Utility Protection During Construction

The Contractor will notify utility companies and call "Dig-Safe" prior to excavation. During construction, infrastructure will be protected using sheeting and shoring, temporary relocations and 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. Also, in the event a utility cannot be maintained in service during switch over to a temporary or permanent system, the Contractor will be required to coordinate the shutdown with the utility owners and Project abutters to minimize impacts and inconveniences. The Proponent will continue to work with BWSC and utility companies to ensure safe and coordinated utility operations in connection with the Project.

APPENDIX 1

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

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

Accessibility Analysis Information Sources:

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

Glossary of Terms:

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

Article 80 | ACCESSIBILITY CHECKLIST

| | | | |
|--|---|---|-------------------------------|
| 1. Project Information: <i>If this is a multi-phased or multi-building project, fill out a separate Checklist for each phase/building.</i> | | | |
| Project Name: | Common Allbright | | |
| Primary Project Address: | 525 Lincoln Street Boston (Allston), MA 02134 | | |
| Total Number of Phases/Buildings: | 1 Building | | |
| Primary Contact (Name / Title / Company / Email / Phone): | Andrew Copelotti/Principal/Boylston Properties/andrew@boylprop.com/617-807-8203 | | |
| Owner / Developer: | AUBP LLC c/o Boylston Properties & Arx Urban | | |
| Architect: | HDS Architecture | | |
| Civil Engineer: | Bohler Engineering | | |
| Landscape Architect: | Bohler Engineering | | |
| Permitting: | Bohler Engineering | | |
| 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)? <i>If yes</i> , identify and explain. | No | | |
| 2. Building Classification and Description: <i>This section identifies preliminary construction information about the project including size and uses.</i> | | | |
| What are the dimensions of the project? | | | |
| Site Area: | 32,589 SF | Building Area: | 129,175 GSF |
| Building Height: | 69' 10" | Number of Stories: | 6 Stories |
| First Floor Elevation: | EL. 22 | Is there below grade space: | Yes / (No) |
| What is the Construction Type? (Select most appropriate type) | | | |
| | (Wood Frame) | Masonry | (Steel Frame) Concrete |

| | | | | |
|---|--|---|---------------|-------------|
| What are the principal building uses? (IBC definitions are below – select all appropriate that apply) | | | | |
| | Residential – One - Three Unit | Residential - Multi-unit, Four + | Institutional | Educational |
| | Business | Mercantile | Factory | Hospitality |
| | Laboratory / Medical | Storage, Utility and Other | | |
| List street-level uses of the building: | Parking garage, fitness center, bike storage, community space | | | |
| 3. Assessment of Existing Infrastructure for Accessibility: <i>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.</i> | | | | |
| Provide a description of the neighborhood where this development is located and its identifying topographical characteristics: | The Project will be located on a parcel in the Allston neighborhood of Boston that is bound by Cambridge Street to the south and Lincoln Street to the north. The site has no official address but is across from 500-510 Lincoln Street. The site lies within the NS-1 (Neighborhood Shopping) zoning sub-district. There currently is an approximately 13'± topographic drop over the site from the southern to northern boundaries of the property. | | | |
| List the surrounding accessible MBTA transit lines and their proximity to development site: commuter rail / subway stations, bus stops: | The Project is within ¼ mile of 6 bus stops and within ½ mile of Cambridge Street and Brighton Ave MBTA stops, the Harvard Avenue stop on the Green Line subway, and the Boston Landing commuter rail station. | | | |
| List the surrounding institutions: hospitals, public housing, elderly and disabled housing developments, educational facilities, others: | <u>Hospitals:</u> Medical Center Orthotics and Prosthetics Boston, St. Elizabeth's Medical Center, Franciscan Children's, Steward Medical Group, SMG Brookline Primary Care, Dana Farber at St. Elizabeth's. <u>Public Housing:</u> Cambridge Housing Authority, Boston Housing Authority, Brookline Housing Authority, Brighton Allstone Apartments, Allston Brighton CDC. <u>Elderly Housing:</u> Brighton Allston Elderly, Commonwealth Ave HSG, Union Square Nursing Center, Governor Apts. <u>Educational Facilities:</u> Gardner Pilot Academy, Boston International Academy, Saint Joseph Preparatory High School, Jackson/Mann K-8 School, Kennedy Day School Program, German International School Boston, Harvard Business School. | | | |
| List the surrounding government buildings: libraries, community centers, recreational facilities, and other related facilities: | Honan-Allston Branch of the Boston Public Library, Brighton Resource Center, John Fitzgerald Kennedy National Historic Site, Faneuil Gardens. | | | |

| | |
|---|---|
| <p>4. Surrounding Site Conditions – Existing:</p> <p><i>This section identifies current condition of the sidewalks and pedestrian ramps at the development site.</i></p> | |
| <p>Is the development site within a historic district? If yes, identify which district:</p> | <p>Development site is not in a Historic District.</p> |
| <p>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:</p> | <p>Yes, there are existing cement concrete sidewalks and pedestrian ramps around the development site. There is an existing 4' curb ramp at the corner of Cambridge and Lincoln Streets and an associated pedestrian ramp on Lincoln Street. The sidewalk varies in width and is in fair to good condition.</p> |
| <p>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:</p> | <p>The existing sidewalk along Cambridge Street will remain as is as well the existing pedestrian ramp on the corner of Lincoln and Cambridge Street. The existing sidewalk adjacent to the project along Lincoln Street will be reconstructed as a part of the construction process. All proposed sidewalks and pedestrian ramps will be built in compliance to City of Boston, ADA and MAAB standards</p> |
| <p>5. Surrounding Site Conditions – Proposed</p> <p><i>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.</i></p> | |
| <p>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.</p> | <p>Yes, the proposed sidewalks will be constructed to be consistent with the Boston Complete Street Standards. New sidewalks are proposed on the Lincoln Street frontage.</p> <p>Lincoln Street - Industrial street type</p> |

Article 80 | ACCESSIBILITY CHECKLIST

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| | |
| What are the total dimensions and slopes of the proposed sidewalks? List the widths of the proposed zones: Frontage, Pedestrian and Furnishing Zone: | Proposed walks will provide a minimum of 6.5' clear width for pedestrian travel. <u>Industrial (Lincoln St):</u> Pedestrian Zone (6.5' – 8.1'), Furnishing Zone (4' min.) |
| 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? | Sidewalks and pedestrian ramps will be within the City right of way and constructed with cement concrete in the pedestrian zone and concrete pavers in the furnishing zone. |
| Will sidewalk cafes or other furnishings be programmed for the pedestrian right-of-way? <i>If yes</i> , what are the proposed dimensions of the sidewalk café or furnishings and what will the remaining right-of-way clearance be? | No sidewalk cafes or furnishings are programmed for the pedestrian right-of-way at this time. |
| If the pedestrian right-of-way is on private property, will the proponent seek a pedestrian easement with the Public Improvement Commission (PIC)? | Sidewalks and pedestrian ramps will be within the City right of way and will not require pedestrian easements. |
| Will any portion of the Project be going through the PIC? <i>If yes</i> , identify PIC actions and provide details. | The Project will go before PIC for approval for sidewalk/curb reconstruction. The Proponent will apply for a curb cut permit through DPW. |
| 6. Accessible Parking: <i>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.</i> | |
| What is the total number of parking spaces provided at the development site? Will these be in a parking lot or garage? | 30 spaces in garage |

Article 80 | ACCESSIBILITY CHECKLIST

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| 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? | 2 (includes one van accessible) |
| Will any on-street accessible parking spaces be required? If yes , has the proponent contacted the Commission for Persons with Disabilities regarding this need? | On-street accessible spaces are not anticipated at this time. |
| Where is the accessible visitor parking located? | Accessible visitor parking is located within the proposed parking garage. |
| Has a drop-off area been identified? If yes , will it be accessible? | A striped drop off area is anticipated to be located off of Lincoln Street. |
| 7. Circulation and Accessible Routes: <i>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.</i> | |
| Describe accessibility at each entryway: Example: Flush Condition, Stairs, Ramp, Lift or Elevator: | All entryways and thresholds will be accessible – flush or within acceptable change restrictions. |
| Are the accessible entrances and standard entrance integrated? If yes , describe. If no , what is the reason? | Yes, accessible entrances and standard entrances will be integrated. |
| If project is subject to Large Project Review/Institutional Master Plan , describe the accessible routes way-finding / signage package. | An accessible routes way-finding and sign package will be developed and provided as the design progresses. |
| 8. Accessible Units (Group 2) and Guestrooms: (If applicable) <i>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.</i> | |
| What is the total number of proposed housing units or hotel rooms for the development? | 80 units |

Article 80 | ACCESSIBILITY CHECKLIST

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|---|---|
| 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? | Zero (0) units are for sale; eighty (80) units are for rent; sixty-nine (69) will be market value units and eleven (11) will be IDP units. |
| If a residential development , how many accessible Group 2 units are being proposed? | 4. |
| If a residential development , how many accessible Group 2 units will also be IDP units? If none , describe reason. | Four (4) of the accessible Group 2 units will also be IDP units. |
| 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, interior elevators and ramps will provide access to separate floors. All ramps and elevators will be designed to meet ADA and MAAB standards. |
| 9. Community Impact: <i>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.</i> | |
| 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? | <p>The Proponent is committed to constructing new pedestrian sidewalks within the City right of way in compliance with BCS Standards. The streetscape will be furnished with new street trees, wide pedestrian friendly sidewalks, and flexible public seating areas along the perimeter of the site.</p> <p>Another key aspect of the urban design planning is connecting the site to the current neighborhood by introducing flexible exterior public spaces along the edges of the site, the introduction of a dedicated public space within the building, and the rehabilitation and expansion of the existing Lincoln Street</p> |

Article 80 | ACCESSIBILITY CHECKLIST

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| | Green Strip. The Proposed Project will work with the Friends of the Lincoln Street Green Strip and the Allston-Brighton CDC on the implementation and maintenance of their Master Plan for the adjacent public park. |
| 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? | All indoor and outdoor amenity space and common areas will be accessible. |
| 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. | There will be two common area ADA compliant restrooms on the first floor. Given the primary occupancy of single, young professionals, no family/ companion restroom facilities are being provided. |
| Has the proponent reviewed the proposed plan with the City of Boston Disability Commissioner or with their Architectural Access staff? If yes , did they approve? If no , what were their comments? | The proponent will work with the Disabilities Commission as the design progresses in addition to further coordination through the PIC review process. |
| Has the proponent presented the proposed plan to the Disability Advisory Board at one of their monthly meetings? Did the Advisory Board vote to support this project? If no , what recommendations did the Advisory Board give to make this project more accessible? | The Proponent has not presented to the Disability Advisory Board. |
| 10. Attachments <i>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.</i> | |
| 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. | |

Article 80 | ACCESSIBILITY CHECKLIST

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|--|
| 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. |

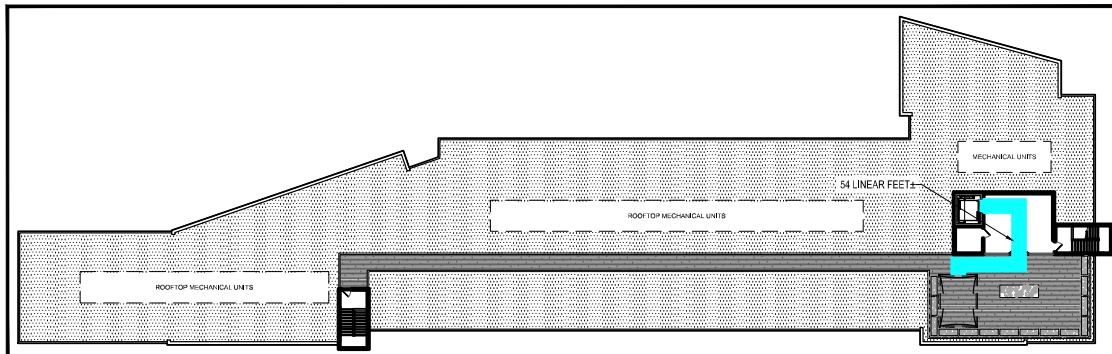
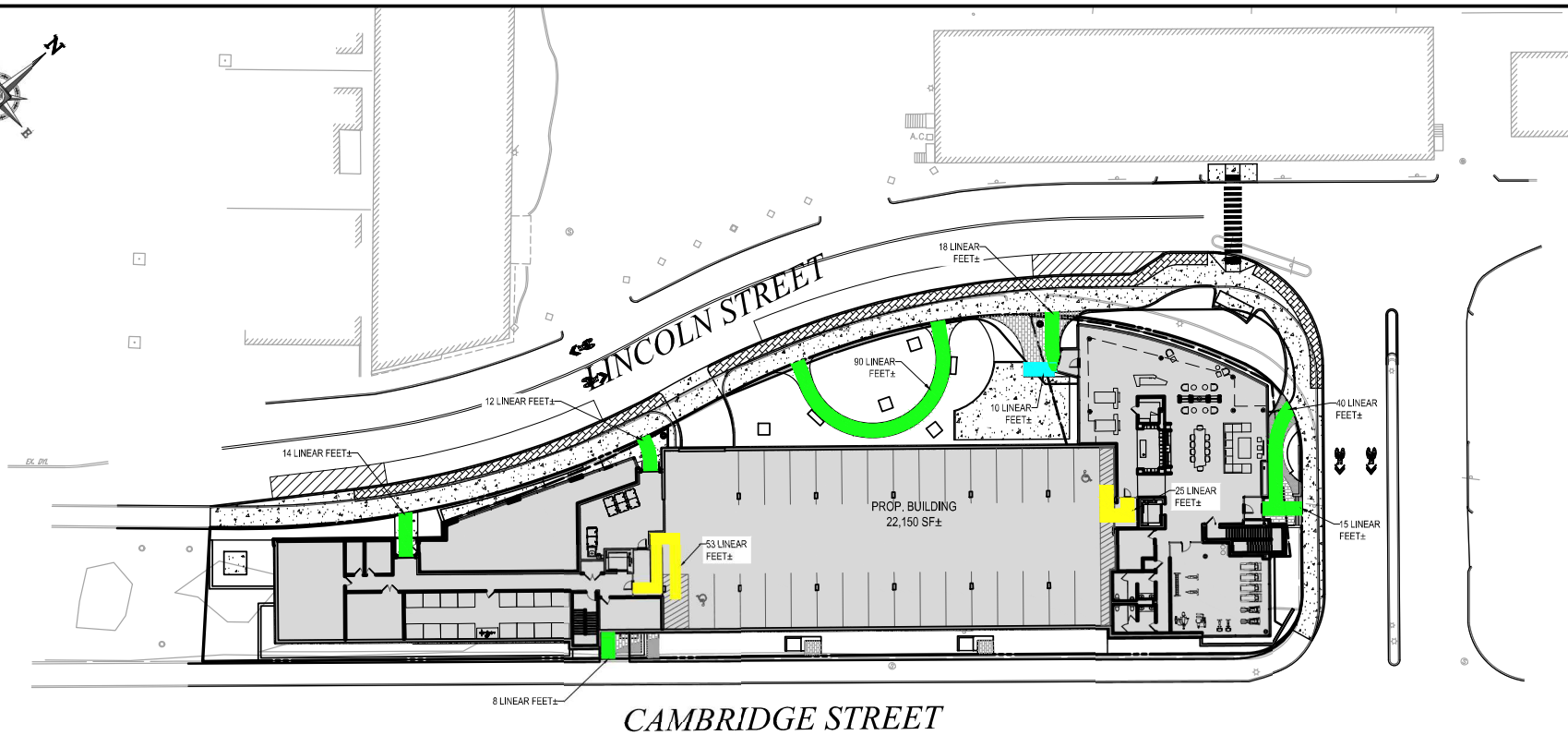
This completes the Article 80 Accessibility Checklist required for your project. Prior to and during the review process, Commission staff are able to provide technical assistance and design review, in order to help achieve ideal accessibility and to ensure that all buildings, sidewalks, parks, and open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



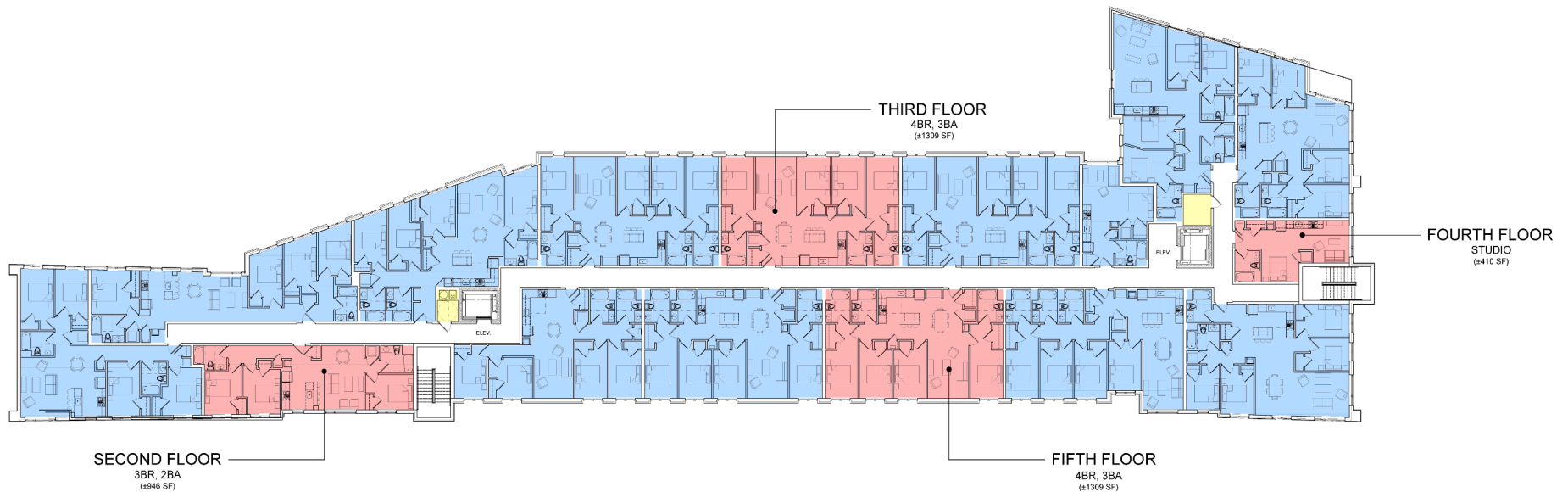
ROOF DECK ENLARGEMENT

LEGEND:

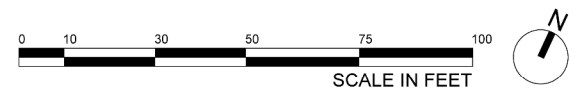
- ACCESSIBLE ROUTE TO PARKING
- ACCESSIBLE ROUTES THROUGH SITE
- ACCESSIBLE ROUTE TO ROOF-DECK AND OUTDOOR AMENITY SPACE

ADA ACCESSIBILITY
SITE PLAN





GROUP 2A ACCESSIBLE UNITS



APPENDIX 2

CLIMATE CHANGE RESILIENCY CHECKLIST

NOTE: Project filings should be prepared and submitted using the online [Climate Resiliency Checklist](#).

A.1 - Project Information

| | | | |
|-----------------------------|---|---------------------|----------------------------------|
| Project Name: | Common Allbright | | |
| Project Address: | 525 Lincoln Street | | |
| Project Address Additional: | Boston (Allston), MA 02134 | | |
| 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 | Andrew Copelotti | Boylston Properties | andrew@boylprop.com 617-807-8203 |
| Is MEPA approval required | Yes/ No | MEPA Date | N/A |

A.3 - Project Team

| | |
|--------------------------|--|
| Owner / Developer: | AUBP LLC c/o Boylston Properties & Arx Urban |
| Architect: | HDS Architecture |
| Engineer: | Bohler Engineering (Civil) & BLW Engineers (MEP) |
| Sustainability / LEED: | Resilient Buildings Group |
| Permitting: | Bohler Engineering |
| Construction Management: | TBD |

A.3 - Project Description and Design Conditions

| | |
|---|---|
| List the principal Building Uses: | Residential |
| List the First Floor Uses: | Parking garage, fitness center, bike storage, community space |
| List any Critical Site Infrastructure and or Building Uses: | N/A |

Site and Building:

| | | | |
|---------------------------------|--------------|---------------------------------|------------|
| Site Area: | 32, 589 SF | Building Area: | 129,175 SF |
| Building Height: | 69' 10" | Building Height: | 6 Stories |
| Existing Site Elevation – Low: | 21.8 Ft± BCB | Existing Site Elevation – High: | 45 Ft± BCB |
| Proposed Site Elevation – Low: | 21.8 Ft± BCB | Proposed Site Elevation – High: | 45 Ft± BCB |
| Proposed First Floor Elevation: | 22 Ft BCB | Below grade levels: | 0 Stories |

Article 37 Green Building:

| | | | |
|-------------------------------|-------------|---------------------|-----------------|
| LEED Version - Rating System: | Mid Rise v4 | LEED Certification: | Yes / No |
|-------------------------------|-------------|---------------------|-----------------|

Proposed LEED rating: **Certified/Silver/
Gold/Platinum**

Proposed LEED point score: **53 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: | R42ci and R11 | Exposed Floor: | R30ci abv garage |
| Foundation Wall: | R10 ci | Slab Edge (at or below grade): | R10 ci |

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: | N/A |
| Area of Framed & Insulated / Standard Wall: | 28% | Wall Value | R19 |
| Area of Vision Window: | 70% | Window Glazing Assembly Value: | U = 0.29 |
| | | Window Glazing SHGC: | SHGC = 0.4 |
| Area of Doors: | 2% | Door Assembly Value: | U = 0.5 |

Energy Loads and Performance

For this filing – describe how energy loads & performance were determined

Schematic Design energy modeling was performed using DOE Energy-10 software.

| | | | |
|--|-------------------------------|---|--|
| Annual Electric: | 887496 (kWh) | Peak Electric: | 175.4 (kW) |
| Annual Heating: | 0.795 (MMbtu/hr) | Peak Heating: | 180.5 MMbtu/year |
| Annual Cooling: | 89 Tons/hr | Peak Cooling: | 27283 Tons |
| Energy Use - Below ASHRAE 90.1 - 2013: | 12% | Have the local utilities reviewed the building energy performance?: | Not yet though they have been contacted |
| Energy Use - Below Mass. Code: | 2 % below stretch code | Energy Use Intensity: | 28.1 kBtu/SF |

Back-up / Emergency Power System

| | | | |
|-------------------------------|------------|------------------------|------------|
| Electrical Generation Output: | N/A | Number of Power Units: | N/A |
| System Type: | N/A | Fuel Source: | N/A |

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

| | | | |
|-----------|------------|----------|------------|
| Electric: | N/A | Heating: | N/A |
| | | Cooling: | N/A |

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: **596.4 Tons**

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

Early energy modeling was done at conceptual design phase to answer “what if” scenarios.

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

Long façade faces south / south east to maximize solar gain. Beyond code insulation and windows reduce heat loss. Air infiltration reduction beyond code.

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

Heating and Cooling is via all electric Variable Refrigerant Flow heat pump system. Ventilation will be via heat recovery ventilation.

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

Design will be “solar ready” with area set aside on roof for a solar electric system.

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

PV on roof.

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

Eversource, Mass DOER and Mass CEC have been contacted and a future meeting to discuss incentives is being planned.

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):

When siding and windows need to be replaced within next 25 years' exterior insulation will be added and triple glazed windows will be used. Water heaters will be replaced with solar hot water or heat pump type. A solar electric system will be installed on the roof.

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: | 12.4 Deg. | Temperature Range - High: | 87.6 Deg. |
| Annual Heating Degree Days: | 5621 | Annual Cooling Degree Days | 750 |

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

| | | | |
|-----------------------------|----|--------------------------------------|---|
| Days - Above 90°: | 11 | Days - Above 100°: | 5 |
| Number of Heatwaves / Year: | 2 | Average Duration of Heatwave (Days): | 3 |

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

Enhanced envelope insulation, window performance and energy recovery for ventilation.

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:

Efficient VRF system will be powered by rooftop PV.

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:

Even distribution of glazing to provide daylighting. Beyond code insulation and windows and infiltration to reduce heat loss. Future solar electric.

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: | 5.15 In. |
|--------------------------------|----------|

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

The project will reduce existing peak rates and volumes of stormwater runoff from the site and will infiltrate the first 1.25 inches of rainfall from the impervious areas. The project will utilize a subsurface infiltration system.

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 project will encourage groundwater recharge by infiltrating stormwater via a subsurface infiltration system.

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:

n/a

Current FEMA SFHA Zone Base Flood Elevation:

n/a

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!

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 3

BROADBAND QUESTIONNAIRE

ARTICLE 80 DESIGN REVIEW BROADBAND READY BUILDINGS QUESTIONNAIRE

The City of Boston is working to cultivate a broadband ecosystem that serves the current and future connectivity needs of residents, businesses, and institutions. The real estate development process offers a unique opportunity to create a building stock in Boston that enables this vision. In partnership with the development community, the Boston Planning and Development Authority and the City of Boston will begin to leverage this opportunity by adding a broadband readiness component to the Article 80 Design Review. This component will take the form of a set of questions to be completed as part of the Project Notification Form. Thoughtful integration of future-looking broadband practices into this process will contribute to progress towards the following goals:

1. Enable an environment of competition and choice that results in all residents and businesses having a choice of 2 or more wireline or fixed wireless high-speed Internet providers
2. Create a built environment that is responsive to new and emerging connectivity technologies
3. Minimize disruption to the public right of way during and after construction of the building

The information that is shared through the Project Notification Form will help BPDA and the City understand how developers currently integrate telecommunications planning in their work and how this integration can be most responsive to a changing technological landscape.

Upon submission of this online form, a PDF of the responses provided will be sent to the email address of the individual entered as Project Contact. Please include this PDF in the Project Notification Form packet submitted to BPDA.

SECTION 1: GENERAL QUESTIONS

Project Information

- Project Name: Common Allbright
- Project Address Primary: 525 Lincoln Street, Allston, MA 02134
- Project Address Additional:
- Project Contact (name / Title / Company / email / phone): Benjie Moll / Manager / AUBP LLC / bmoll@arxurban.com / 617-967-8683
- Expected completion date Spring 2022

Team Description

- Owner / Developer AUBP LLC
- Architect HDS Architecture
- Engineer (building systems): BLW Engineers
- Permitting: Bohler Engineering
- Construction Management TBD

SECTION 2: RIGHT OF WAY TO BUILDING

Point of Entry Planning

Point of entry planning has important implications for the ease with which your building's telecommunications services can be installed, maintained, and expanded over time.

#1: Please provide the following information for your building's point of entry planning (conduits from building to street for telecommunications). Please enter 'unknown' if these decisions have not yet been made or you are presently unsure.

- Number of Points of Entry unknown
- Locations of Points of Entry unknown
- Quantity and size of conduits unknown
- Location where conduits connect (e.g. building-owned manhole, carrier-specific manhole or stubbed at property line) unknown
- Other information/comments n/a

#2: Do you plan to conduct a utility site assessment to identify where cabling is located within the street? This information can be helpful in determining the locations of POEs and telco rooms. Please enter 'unknown' if these decisions have not yet been made or you are presently unsure.

- ☒ Yes
- No
 - Unknown

SECTION 3: INSIDE OF THE BUILDING

Riser Planning

Riser capacity can enable multiple telecom providers to serve tenants in your building.

#3: Please provide the following information about the riser plans throughout the building. Please enter 'unknown' if these decisions have not yet been made or you are presently unsure.

- Number of risers unknown
- Distance between risers (if more than one) unknown
- Dimensions of riser closets unknown
- Riser or conduit will reach to top floor unknown
- Number and size of conduits or sleeves within each riser unknown
- Proximity to other utilities (e.g. electrical, heating) unknown
- Other information/comments n/a

Telecom Room

A well designed telecom room with appropriate security and resiliency measures can be an enabler of tenant choice and reduce the risk of service disruption and costly damage to telecom equipment.

#4: Please provide the following information about the telecom room plans. Please enter 'unknown' if these decisions have not yet been made or you are presently unsure.

- What is the size of the telecom room? unknown
- Describe the electrical capacity of the telecom room (i.e. # and size of electrical circuits) unknown
- Will the telecom room be located in an area of the building containing one or more load bearing walls?
- Will the telecom room be climate controlled?
 - Yes
 - No
 - Unknown

- If the building is within a flood-prone geographic area, will the telecom equipment will be located above the floodplain?
 - Yes
 - No
 - Unknown
- Will the telecom room be located on a floor where water or other liquid storage is present?
 - Yes
 - No
 - Unknown
- Will the telecom room contain a flood drain?
 - Yes
 - No
 - Unknown
- Will the telecom room be single use (telecom only) or shared with other utilities?
 - Telecom only
 - Shared with other utilities
 - Unknown
- Other information/comments n/a

Delivery of Service Within Building (Residential Only)

Please enter 'unknown' if these decisions have not yet been made or you are presently unsure. Questions 5 through 8 are for residential development only.

#5: Will building/developer supply common inside wiring to all floors of the building?

☒ Yes

- No
- Unknown

#6: If so, what transmission medium (e.g. coax, fiber)? Please enter 'unknown' if these decisions have not yet been made or you are presently unsure.

unknown

#7: Is the building/developer providing wiring within each unit?

- ☒ Yes
- No
- Unknown

#8: If so, what transmission medium (e.g. coax, fiber)? Please enter 'unknown' if these decisions have not yet been made or you are presently unsure. unknown

SECTION 4: ACCOMMODATION OF NEW AND EMERGING TECHNOLOGIES

Cellular Reception

The quality of cellular reception in your building can have major impacts on quality of life and business operations.

Please provide the following information on your plans to facilitate high quality cellular coverage in your building. Please enter 'unknown' if these decisions have not yet been made or you are presently unsure.

#9: Will the building conduct any RF benchmark testing to assess cellular coverage?

- Yes
- No
- ☒ Unknown

#10: Will the building allocate any floor space for future in-building wireless solutions (DAS/small cell/booster equipment)?

- Yes
- No
- ☒ Unknown

#11: Will the building be providing an in-building solution (DAS/ Small cell/ booster)?

- Yes
- ☒ No
- Unknown

#12: If so, are you partnering with a carrier, neutral host provider, or self-installing?

- Carrier
- Neutral host provider
- Self-installing

Rooftop Access

Building rooftops are frequently used by telecommunications providers to install equipment critical to the provision of service to tenants.

Please provide the following information regarding your plans for roof access and usage. Please enter 'unknown' if these decisions have not yet been made or you are presently unsure.

#13: Will you allow cellular providers to place equipment on the roof?

- Yes
- No
- ☒ Unknown

#14: Will you allow broadband providers (fixed wireless) to install equipment on the roof?

- Yes
- No
- ☒ Unknown

SECTION 5: TELECOM PROVIDER OUTREACH

Supporting Competition and Choice

Having a choice of broadband providers is a value add for property owners looking to attract tenants and for tenants in Boston seeking fast, affordable, and reliable broadband service. In addition to enabling tenant choice in your building, early outreach to telecom providers can also reduce cost and disruption to the public right of way. The following questions focus on steps that property owners can take to ensure that multiple wireline or fixed wireless broadband providers can access your building and provide service to your tenants.

#15: (Residential Only) Please provide the date upon which each of the below providers were successfully contacted, whether or not they will serve the building, what transmission medium they will use (e.g. coax, fiber) and the reason they provided if the answer was 'no'.

- Comcast To be contacted
- RCN To be contacted
- Verizon To be contacted
- NetBlazr To be contacted
- Starry To be contacted

#16: Do you plan to abstain from exclusivity agreements with broadband and cable providers?

- ☒ Yes
- No
 - Unknown

#17: Do you plan to make public to tenants and prospective tenants the list of broadband/cable providers who serve the building?

- ☒ Yes
- No
 - Unknown

SECTION 6: FEEDBACK

The Boston Planning and Development Agency looks forward to supporting the developer community in enabling broadband choice for resident and businesses. Please provide feedback on your experience completing these questions.

APPENDIX 4

LEED DATA



LEED v4 for Building Design and Construction: Multifamily Midrise

Project Checklist

Project Name:

525 Lincoln Street Team Reviewed

Date:

6/21/2019

Y ? N

2 Credit Integrative Process

2

15 0 0 Location and Transportation 15

Y Prereq Floodplain Avoidance Required

PERFORMANCE PATH

Credit LEED for Neighborhood Development Location 15

PRESCRIPTIVE PATH

8 Credit Site Selection 8

3 Credit Compact Development 3

2 Credit Community Resources 2

2 Credit Access to Transit 2

7 0 0 Sustainable Sites 7

Y Prereq Construction Activity Pollution Prevention Required

Y Prereq No Invasive Plants Required

2 Credit Heat Island Reduction 2

3 Credit Rainwater Management 3

2 Credit Non-Toxic Pest Control 2

6 6 0 Water Efficiency 12

Y Prereq Water Metering Required

PERFORMANCE PATH

6 6 Credit Total Water Use 12

PRESCRIPTIVE PATH

Credit Indoor Water Use 6

Credit Outdoor Water Use 4

7 15 15 Energy and Atmosphere 37

Y Prereq Minimum Energy Performance Required

Y Prereq Energy Metering Required

Y Prereq Education of the Homeowner, Tenant or Building Manager Required

5 10 15 Credit Annual Energy Use 30

2 3 Credit Efficient Hot Water Distribution 5

2 Credit Advanced Utility Tracking 2

4 5 0 Materials and Resources 9

Y Prereq Certified Tropical Wood Required

Y Prereq Durability Management Required

1 Credit Durability Management Verification 1

2 3 Credit Environmentally Preferable Products 5

1 2 Credit Construction Waste Management 3

12 6 2 Indoor Environmental Quality 18

Y Prereq Ventilation Required

Y Prereq Combustion Venting Required

Y Prereq Garage Pollutant Protection Required

Y Prereq Radon-Resistant Construction Required

Y Prereq Air Filtering Required

Y Prereq Environmental Tobacco Smoke Required

Y Prereq Compartmentalization Required

2 1 Credit Enhanced Ventilation 3

0.5 0.5 2 Credit Contaminant Control 2

2 1 Credit Balancing of Heating and Cooling Distribution Systems 3

3 Credit Enhanced Compartmentalization 3

2 Credit Enhanced Combustion Venting 2

1 Credit Enhanced Garage Pollutant Protection 1

3 Credit Low Emitting Products 3

1 Credit No Environmental Tobacco Smoke 1

1 5 0 Innovation 6

Y Prereq Preliminary Rating Required

1 4 Credit Innovation 5

1 Credit LEED AP Homes 1

2 2 0 Regional Priority 4

1 Credit Regional Priority: Annual Energy Use (15 pt threshold) 1

1 Credit Regional Priority: Access to Transit (1 pt threshold) 1

1 Credit Regional Priority: Non-Toxic Pest Control (2 pt threshold) 1

1 Credit Balance of Heat / Heat Island / Rainwater 1

56 39 17 TOTALS Possible Points: 110

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

525 Lincoln Street

Community Resource Map
1/4 and 1/2 mile radius



APPENDIX 5

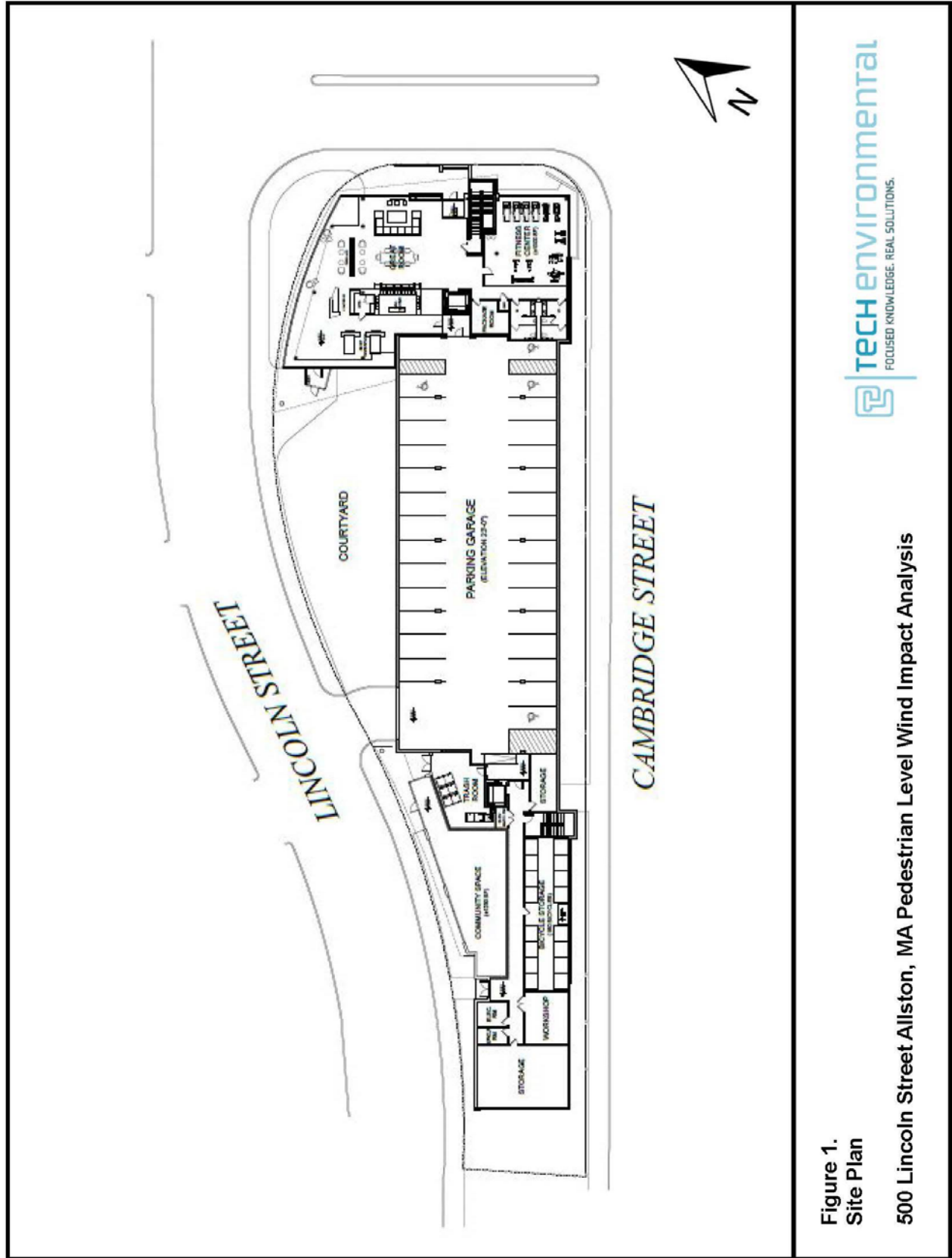
ENVIRONMENTAL STUDIES DATA

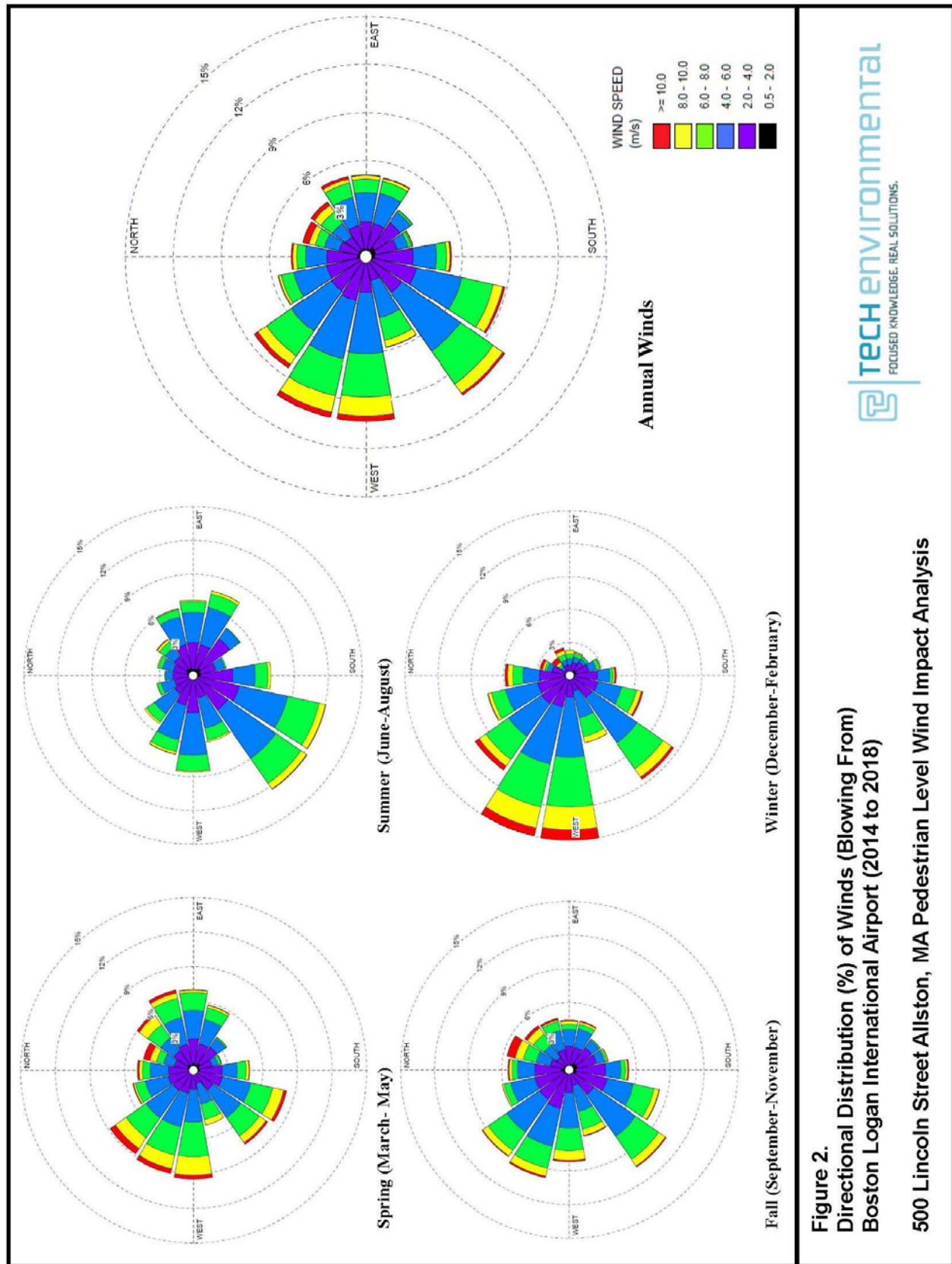
APPENDIX 5-A WIND

525 LINCOLN STREET PROJECT NOTIFICATION FORM

| <u>Page</u> | <u>Contents</u> |
|--------------------|------------------------|
|--------------------|------------------------|

- | | |
|---|---|
| 2 | Figure 1: Site Plan |
| 3 | Figure 2: Direction Distribution of Winds |
| 4 | Figure 3: General Wind Flow Patterns |

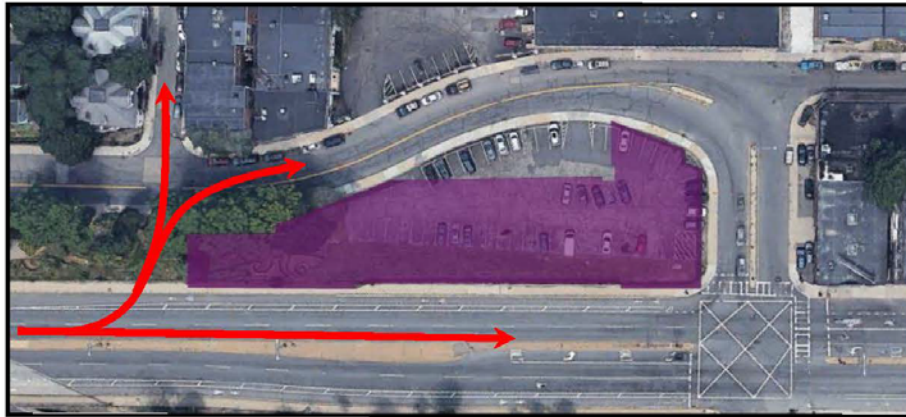




Northeasterly Winds



Southwesterly Winds



West/Northwesterly Winds



Figure 3.
General Wind Flow Patterns

500 Lincoln Street Allston, MA
Pedestrian Level Wind Impact Analysis



APPENDIX 5-B AIR QUALITY

525 LINCOLN STREET PROJECT NOTIFICATION FORM

| <u>Pages</u> | <u>Contents</u> |
|---------------------|---|
| 2-3 | AERMOD Model Output |
| 4 | MOVES2014b Output for Garage Analysis (vehicles exiting garage) |
| 5 | Garage Emissions Analysis Calculations - AM and PM Peak Hour |

Appendix 5-B Air Quality

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

*** AERMOD - VERSION 18081 *** *** 525 Lincoln Street BPDA *** AERMET - VERSION 18081 *** *** 05/15/19
19:01:23
PAGE 3

*** MODELOPTs: NonDEFAULT CONC FLAT FLGPOL NOCHKD SCREEN NODRYDPLT NOWETDPLT URBAN

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

Surface file: Urban.sfc Met Version: 18081
Profile file: Urban.PFL
Surface format: FREE
Profile format: FREE
Surface station no.: 11111 Upper air station no.: 22222
Name: UNKNOWN Name: UNKNOWN
Year: 2010 Year: 2010

| First 24 hours of scalar data | | | | H0 | U* | W* | DT/DZ | ZICNV | ZIMCH | M-O LEN | Z0 | BOWEN | ALBEDO | REF WS | WD | HT | REF TA | HT |
|-------------------------------|----|----|--------|------|-------|--------|-------|-------|-------|---------|------|-------|--------|--------|------|------|--------|-----|
| YR | MO | DY | JDY HR | | | | | | | | | | | | | | | |
| 10 | 01 | 01 | 1 01 | -1.2 | 0.043 | -9.000 | 0.020 | -999. | 21. | 5.5 | 1.00 | 1.62 | 0.21 | 0.50 | 10. | 10.0 | 255.2 | 2.0 |
| 10 | 01 | 02 | 2 01 | -1.2 | 0.043 | -9.000 | 0.020 | -999. | 21. | 5.5 | 1.00 | 1.62 | 0.21 | 0.50 | 20. | 10.0 | 255.2 | 2.0 |
| 10 | 01 | 03 | 3 01 | -1.2 | 0.043 | -9.000 | 0.020 | -999. | 21. | 5.5 | 1.00 | 1.62 | 0.21 | 0.50 | 30. | 10.0 | 255.2 | 2.0 |
| 10 | 01 | 04 | 4 01 | -1.2 | 0.043 | -9.000 | 0.020 | -999. | 21. | 5.5 | 1.00 | 1.62 | 0.21 | 0.50 | 40. | 10.0 | 255.2 | 2.0 |
| 10 | 01 | 05 | 5 01 | -1.2 | 0.043 | -9.000 | 0.020 | -999. | 21. | 5.5 | 1.00 | 1.62 | 0.21 | 0.50 | 50. | 10.0 | 255.2 | 2.0 |
| 10 | 01 | 06 | 6 01 | -1.2 | 0.043 | -9.000 | 0.020 | -999. | 21. | 5.5 | 1.00 | 1.62 | 0.21 | 0.50 | 60. | 10.0 | 255.2 | 2.0 |
| 10 | 01 | 07 | 7 01 | -1.2 | 0.043 | -9.000 | 0.020 | -999. | 21. | 5.5 | 1.00 | 1.62 | 0.21 | 0.50 | 70. | 10.0 | 255.2 | 2.0 |
| 10 | 01 | 08 | 8 01 | -1.2 | 0.043 | -9.000 | 0.020 | -999. | 21. | 5.5 | 1.00 | 1.62 | 0.21 | 0.50 | 80. | 10.0 | 255.2 | 2.0 |
| 10 | 01 | 09 | 9 01 | -1.2 | 0.043 | -9.000 | 0.020 | -999. | 21. | 5.5 | 1.00 | 1.62 | 0.21 | 0.50 | 90. | 10.0 | 255.2 | 2.0 |
| 10 | 01 | 10 | 10 01 | -1.2 | 0.043 | -9.000 | 0.020 | -999. | 21. | 5.5 | 1.00 | 1.62 | 0.21 | 0.50 | 100. | 10.0 | 255.2 | 2.0 |
| 10 | 01 | 11 | 11 01 | -1.2 | 0.043 | -9.000 | 0.020 | -999. | 21. | 5.5 | 1.00 | 1.62 | 0.21 | 0.50 | 110. | 10.0 | 255.2 | 2.0 |
| 10 | 01 | 12 | 12 01 | -1.2 | 0.043 | -9.000 | 0.020 | -999. | 21. | 5.5 | 1.00 | 1.62 | 0.21 | 0.50 | 120. | 10.0 | 255.2 | 2.0 |
| 10 | 01 | 13 | 13 01 | -1.2 | 0.043 | -9.000 | 0.020 | -999. | 21. | 5.5 | 1.00 | 1.62 | 0.21 | 0.50 | 130. | 10.0 | 255.2 | 2.0 |
| 10 | 01 | 14 | 14 01 | -1.2 | 0.043 | -9.000 | 0.020 | -999. | 21. | 5.5 | 1.00 | 1.62 | 0.21 | 0.50 | 140. | 10.0 | 255.2 | 2.0 |
| 10 | 01 | 15 | 15 01 | -1.2 | 0.043 | -9.000 | 0.020 | -999. | 21. | 5.5 | 1.00 | 1.62 | 0.21 | 0.50 | 150. | 10.0 | 255.2 | 2.0 |
| 10 | 01 | 16 | 16 01 | -1.2 | 0.043 | -9.000 | 0.020 | -999. | 21. | 5.5 | 1.00 | 1.62 | 0.21 | 0.50 | 160. | 10.0 | 255.2 | 2.0 |
| 10 | 01 | 17 | 17 01 | -1.2 | 0.043 | -9.000 | 0.020 | -999. | 21. | 5.5 | 1.00 | 1.62 | 0.21 | 0.50 | 170. | 10.0 | 255.2 | 2.0 |
| 10 | 01 | 18 | 18 01 | -1.2 | 0.043 | -9.000 | 0.020 | -999. | 21. | 5.5 | 1.00 | 1.62 | 0.21 | 0.50 | 180. | 10.0 | 255.2 | 2.0 |
| 10 | 01 | 19 | 19 01 | -1.2 | 0.043 | -9.000 | 0.020 | -999. | 21. | 5.5 | 1.00 | 1.62 | 0.21 | 0.50 | 190. | 10.0 | 255.2 | 2.0 |
| 10 | 01 | 20 | 20 01 | -1.2 | 0.043 | -9.000 | 0.020 | -999. | 21. | 5.5 | 1.00 | 1.62 | 0.21 | 0.50 | 200. | 10.0 | 255.2 | 2.0 |
| 10 | 01 | 21 | 21 01 | -1.2 | 0.043 | -9.000 | 0.020 | -999. | 21. | 5.5 | 1.00 | 1.62 | 0.21 | 0.50 | 210. | 10.0 | 255.2 | 2.0 |
| 10 | 01 | 22 | 22 01 | -1.2 | 0.043 | -9.000 | 0.020 | -999. | 21. | 5.5 | 1.00 | 1.62 | 0.21 | 0.50 | 220. | 10.0 | 255.2 | 2.0 |
| 10 | 01 | 23 | 23 01 | -1.2 | 0.043 | -9.000 | 0.020 | -999. | 21. | 5.5 | 1.00 | 1.62 | 0.21 | 0.50 | 230. | 10.0 | 255.2 | 2.0 |
| 10 | 01 | 24 | 24 01 | -1.2 | 0.043 | -9.000 | 0.020 | -999. | 21. | 5.5 | 1.00 | 1.62 | 0.21 | 0.50 | 240. | 10.0 | 255.2 | 2.0 |

First hour of profile data
YR MO DY HR HEIGHT F WDIR WSPD AMB_TMP sigmaA sigmaW sigmaV
10 01 01 01 10.0 1 10. 0.50 255.3 99.0 -99.00 -99.00

F indicates top of profile (=1) or below (=0)

*** AERMOD - VERSION 18081 *** *** 525 Lincoln Street BPDA *** 05/15/19
*** AERMET - VERSION 18081 *** *** 19:01:23
PAGE 4

*** MODELOPTs: NonDEFAULT CONC FLAT FLGPOL NOCHKD SCREEN NODRYDPLT NOWETDPLT URBAN

*** THE SUMMARY OF HIGHEST 1-HR RESULTS ***

** CONC OF CO IN MICROGRAMS/M**3 **

| GROUP ID | AVERAGE CONC | DATE (YYMMDDHH) | RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG) | OF TYPE | NETWORK GRID-ID |
|----------------------------|--------------|-------------------|--|---------|-----------------|
| ALL HIGH 1ST HIGH VALUE IS | 54.08180 | ON 10042215: AT (| 324685.45, 4691634.88, 6.10, 6.10, 1.52) | DC | |

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

*** AERMOD - VERSION 18081 *** *** 525 Lincoln Street BPDA *** AERMET - VERSION 18081 *** *** 05/15/19
19:01:23
PAGE 5

*** MODELOPTs: NonDEFAULT CONC FLAT FLGPOL NOCHKD SCREEN NODRYDPLT NOWETDPLT URBAN

*** Message Summary : AERMOD Model Execution ***

----- Summary of Total Messages -----

A Total of 0 Fatal Error Message(s)
A Total of 1 Warning Message(s)
A Total of 0 Informational Message(s)
A Total of 18504 Hours Were Processed
A Total of 0 Calm Hours Identified
A Total of 0 Missing Hours Identified (0.00 Percent)

***** FATAL ERROR MESSAGES *****

*** NONE ***

INDOOR GARAGE ANALYSIS PROGRAM

PROJECT: 525 LINCOLN STREET GARAGE PEAK PM HOUR - YEAR: 2024

DISTANCE IN: 55 METERS
DISTANCE OUT: 55 METERS

NUMBER OF EXIT LANES: 1 LANE(S)
PEAK VOLUME: 17 VEH/HOUR

CO RATE: 2.976 GRAMS CO/MILE

SPEED IN GARAGE: 5.0 M.P.H.

VENT CFM: 11,500 CFM

TOTAL CO EMISSIONS = 0.029 GRAMS/MIN = 0.00048 GRAMS/SEC
TOTAL VENTILATION = 325 CU. M/MIN

PEAK 1-HOUR CO CONCENTRATION FROM VEHICLES: 0.08 PPM

MOVES2014 OUTPUT

| Zone ID | Road Type ID | Link Length (miles) | Link Volume (Vehicles/Hr) | Link Avg Speed (Miles/Hr) | Pollutant | Emission Factor (Grams/veh-mi) |
|---------|--------------|---------------------|---------------------------|---------------------------|-----------|--------------------------------|
| 250250 | 5 | 0.034 | 10 | 5 | CO | 2.976 |
| 250250 | 5 | 0.034 | 17 | 5 | CO | 2.976 |

APPENDIX 5-C NOISE

525 LINCOLN STREET PROJECT NOTIFICATION FORM

| <u>Pages</u> | <u>Contents</u> |
|---------------------|-----------------------------------|
| 2 | Sound Monitoring Locations |
| 3 | Sound Modeling Receptor Locations |
| 4 | Summary of Modeling Results |



Figure 1
Sound Monitoring Locations
500 Lincoln Street Allston, MA



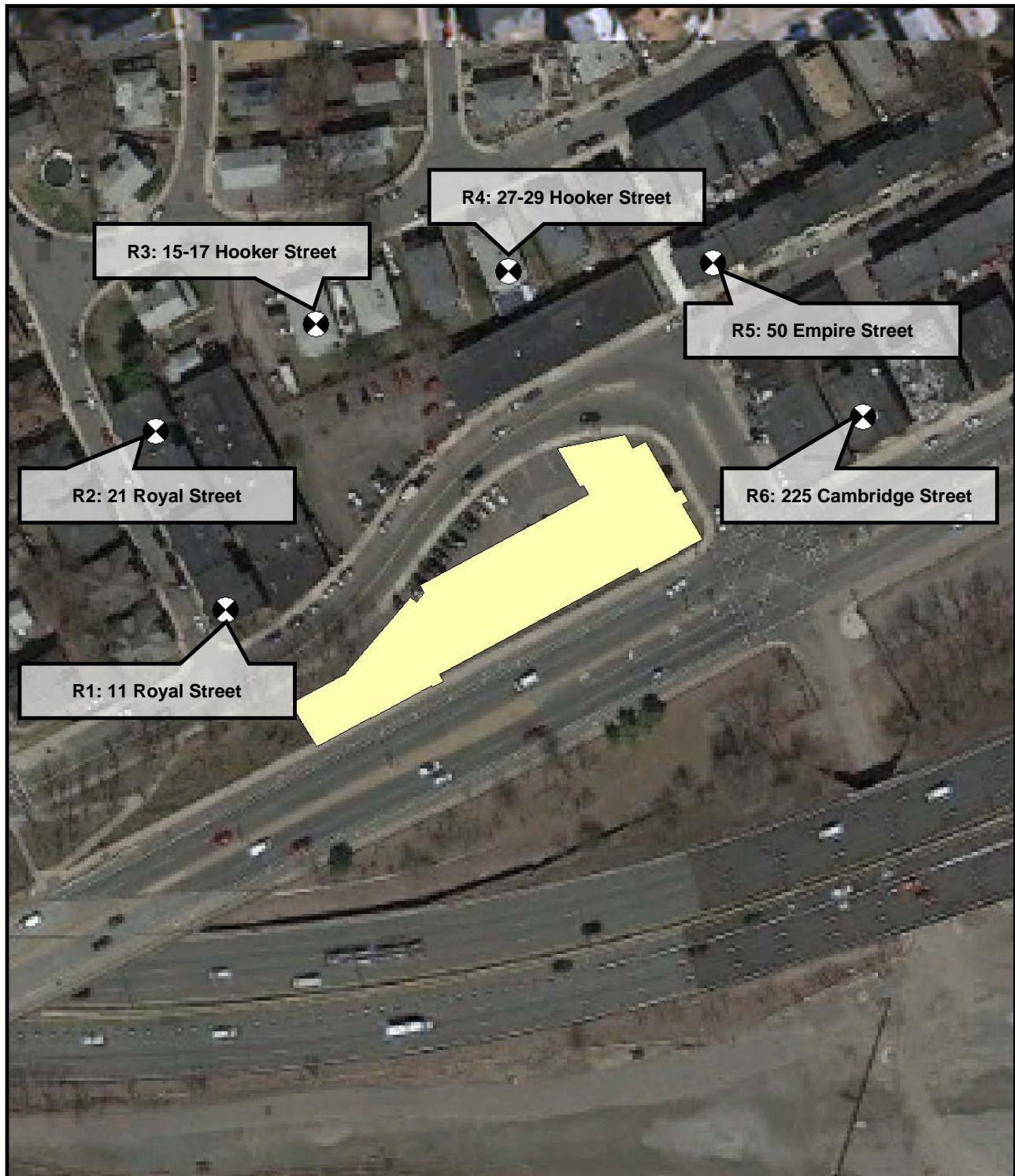


Figure 2
Sound Modeling Receptor Locations
525 Lincoln Street, Allston, MA



| | | | | | | | | | | | |
|--|-------------|-----------|------------|------------|------------|-------------|-------------|-------------|-------------|--------------|----------------------------|
| Summary of Modeling Results | | | | | | | | | | | |
| 525 Lincoln Street | | | | | | | | | | | |
| | 31.5 | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 | A-Wtd | |
| Local Nighttime Limit | 68 | 67 | 61 | 52 | 46 | 40 | 33 | 28 | 26 | 50 | |
| NIGHTTIME RESULTS & CITY OF BOSTON ANALYSIS | 31.5 | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 | A-Wtd | Complies Night? |
| 11 Royal Street | 51 | 44 | 40 | 40 | 39 | 37 | 33 | 25 | 12 | 41 | YES |
| 21 Royal Street | 45 | 39 | 35 | 36 | 35 | 34 | 30 | 23 | 7 | 38 | YES |
| 15-17 Hooker Street | 46 | 40 | 36 | 36 | 35 | 34 | 29 | 20 | 4 | 37 | YES |
| 27-29 Hooker Street | 47 | 41 | 37 | 37 | 36 | 34 | 29 | 20 | 4 | 38 | YES |
| 50 Empire Street | 47 | 40 | 35 | 35 | 33 | 31 | 25 | 16 | 1 | 35 | YES |
| 225 Cambridge Street | 46 | 39 | 35 | 35 | 33 | 31 | 25 | 17 | 3 | 35 | YES |

| NIGHTTIME RESULTS & MASSDEP ANALYSIS (< +10 dBA) | Impact Level (dBA) | Background Level (dBA) | Total Level (dBA) | Increase (dBA) | Complies Night? |
|--|-----------------------------------|-----------------------------------|----------------------------------|---------------------------|----------------------------|
| 11 Royal Street | 41.4 | 53.7 | 53.9 | +0.2 | YES |
| 21 Royal Street | 37.7 | 39.1 | 41.5 | +2.4 | YES |
| 15-17 Hooker Street | 37.5 | 39.1 | 41.4 | +2.3 | YES |
| 27-29 Hooker Street | 37.8 | 50.8 | 51.0 | +0.2 | YES |
| 50 Empire Street | 35.1 | 50.8 | 50.9 | +0.1 | YES |
| 225 Cambridge Street | 35.3 | 50.8 | 50.9 | +0.1 | YES |

APPENDIX 6

TRAFFIC DATA

Turning Movement Counts

Accurate Counts

978-664-2565

N/S Street : Lincoln Street / Driveway
E/W Street: Cambridge Street
City/State : Allston, MA
Weather : Cloudy

File Name : 35860001
Site Code : 35860001
Start Date : 4/9/2019
Page No : 1

Groups Printed- Cars - Trucks

| | Lincoln St From North | | | Cambridge St From East | | | | Drwy From South | | | Cambridge St From West | | | | |
|-------------|--------------------------|------|-------|---------------------------|------|-------|------|--------------------|------|-------|---------------------------|------|-------|------|------------|
| Start Time | Left | Thru | Right | Left | Thru | Right | U-TR | Left | Thru | Right | Left | Thru | Right | U-TR | Int. Total |
| 07:00 AM | 33 | 0 | 9 | 3 | 216 | 23 | 6 | 0 | 0 | 1 | 10 | 303 | 0 | 0 | 604 |
| 07:15 AM | 44 | 1 | 18 | 0 | 227 | 36 | 3 | 0 | 0 | 0 | 10 | 339 | 0 | 0 | 678 |
| 07:30 AM | 46 | 0 | 21 | 0 | 192 | 42 | 3 | 0 | 0 | 0 | 21 | 363 | 0 | 1 | 689 |
| 07:45 AM | 39 | 1 | 18 | 3 | 189 | 33 | 8 | 0 | 0 | 1 | 18 | 392 | 5 | 0 | 707 |
| Total | 162 | 2 | 66 | 6 | 824 | 134 | 20 | 0 | 0 | 2 | 59 | 1397 | 5 | 1 | 2678 |
| 08:00 AM | 56 | 0 | 17 | 1 | 209 | 42 | 3 | 0 | 0 | 1 | 13 | 367 | 0 | 6 | 715 |
| 08:15 AM | 46 | 0 | 21 | 1 | 224 | 34 | 4 | 0 | 0 | 1 | 23 | 332 | 0 | 1 | 687 |
| 08:30 AM | 47 | 0 | 16 | 1 | 229 | 46 | 4 | 0 | 0 | 1 | 25 | 316 | 0 | 2 | 687 |
| 08:45 AM | 33 | 0 | 21 | 1 | 231 | 46 | 3 | 0 | 0 | 2 | 15 | 305 | 0 | 0 | 657 |
| Total | 182 | 0 | 75 | 4 | 893 | 168 | 14 | 0 | 0 | 5 | 76 | 1320 | 0 | 9 | 2746 |
| Grand Total | 344 | 2 | 141 | 10 | 1717 | 302 | 34 | 0 | 0 | 7 | 135 | 2717 | 5 | 10 | 5424 |
| Apprch % | 70.6 | 0.4 | 29 | 0.5 | 83.2 | 14.6 | 1.6 | 0 | 0 | 100 | 4.7 | 94.8 | 0.2 | 0.3 | |
| Total % | 6.3 | 0 | 2.6 | 0.2 | 31.7 | 5.6 | 0.6 | 0 | 0 | 0.1 | 2.5 | 50.1 | 0.1 | 0.2 | |
| Cars | 342 | 2 | 140 | 7 | 1643 | 298 | 34 | 0 | 0 | 5 | 131 | 2644 | 5 | 10 | 5261 |
| % Cars | 99.4 | 100 | 99.3 | 70 | 95.7 | 98.7 | 100 | 0 | 0 | 71.4 | 97 | 97.3 | 100 | 100 | 97 |
| Trucks | 2 | 0 | 1 | 3 | 74 | 4 | 0 | 0 | 0 | 2 | 4 | 73 | 0 | 0 | 163 |
| % Trucks | 0.6 | 0 | 0.7 | 30 | 4.3 | 1.3 | 0 | 0 | 0 | 28.6 | 3 | 2.7 | 0 | 0 | 3 |

Accurate Counts

978-664-2565

File Name : 35860001

Site Code : 35860001

Start Date : 4/9/2019

Page No : 2

N/S Street : Lincoln Street / Driveway

E/W Street: Cambridge Street

City/State : Allston, MA

Weather : Cloudy

| | Lincoln St From North | | | | Cambridge St From East | | | | | Drwy From South | | | | Cambridge St From West | | | | | |
|--|--------------------------|----------|-----------|------------|---------------------------|------------|-----------|----------|------------|--------------------|------|----------|------------|---------------------------|------------|----------|----------|------------|------------|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | U-TR | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | U-TR | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | | | | | | | | | | |
| 07:30 AM | 46 | 0 | 21 | 67 | 0 | 192 | 42 | 3 | 237 | 0 | 0 | 0 | 0 | 21 | 363 | 0 | 1 | 385 | 689 |
| 07:45 AM | 39 | 1 | 18 | 58 | 3 | 189 | 33 | 8 | 233 | 0 | 0 | 1 | 1 | 18 | 392 | 5 | 0 | 415 | 707 |
| 08:00 AM | 56 | 0 | 17 | 73 | 1 | 209 | 42 | 3 | 255 | 0 | 0 | 1 | 1 | 13 | 367 | 0 | 6 | 386 | 715 |
| 08:15 AM | 46 | 0 | 21 | 67 | 1 | 224 | 34 | 4 | 263 | 0 | 0 | 1 | 1 | 23 | 332 | 0 | 1 | 356 | 687 |
| Total Volume | 187 | 1 | 77 | 265 | 5 | 814 | 151 | 18 | 988 | 0 | 0 | 3 | 3 | 75 | 1454 | 5 | 8 | 1542 | 2798 |
| % App. Total | 70.6 | 0.4 | 29.1 | | 0.5 | 82.4 | 15.3 | 1.8 | | 0 | 0 | 100 | | 4.9 | 94.3 | 0.3 | 0.5 | | |
| PHF | .835 | .250 | .917 | .908 | .417 | .908 | .899 | .563 | .939 | .000 | .000 | .750 | .750 | .815 | .927 | .250 | .333 | .929 | .978 |
| Cars | 186 | 1 | 76 | 263 | 4 | 776 | 149 | 18 | 947 | 0 | 0 | 3 | 3 | 72 | 1426 | 5 | 8 | 1511 | 2724 |
| % Cars | 99.5 | 100 | 98.7 | 99.2 | 80.0 | 95.3 | 98.7 | 100 | 95.9 | 0 | 0 | 100 | 100 | 96.0 | 98.1 | 100 | 100 | 98.0 | 97.4 |
| Trucks | 1 | 0 | 1 | 2 | 1 | 38 | 2 | 0 | 41 | 0 | 0 | 0 | 0 | 3 | 28 | 0 | 0 | 31 | 74 |
| % Trucks | 0.5 | 0 | 1.3 | 0.8 | 20.0 | 4.7 | 1.3 | 0 | 4.1 | 0 | 0 | 0 | 0 | 4.0 | 1.9 | 0 | 0 | 2.0 | 2.6 |

Accurate Counts

978-664-2565

File Name : 35860001

Site Code : 35860001

Start Date : 4/9/2019

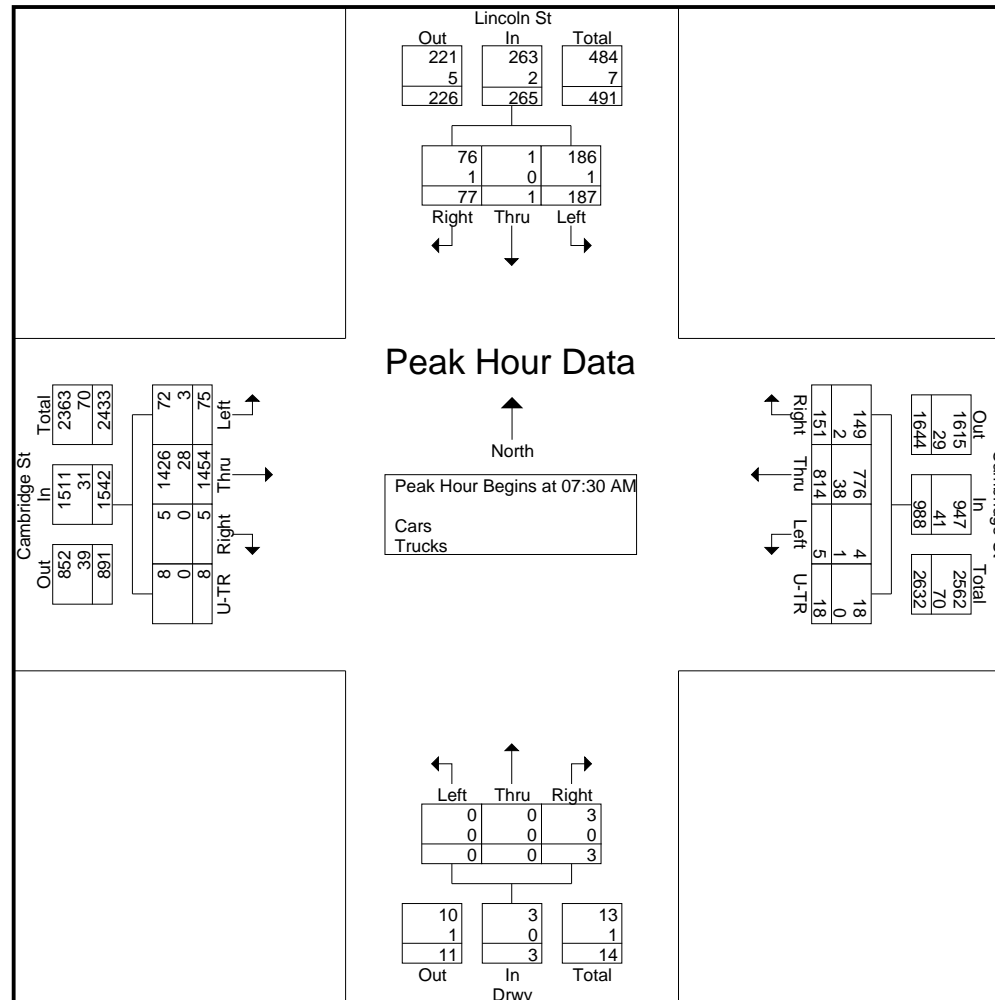
Page No : 3

N/S Street : Lincoln Street / Driveway

E/W Street: Cambridge Street

City/State : Allston, MA

Weather : Cloudy



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

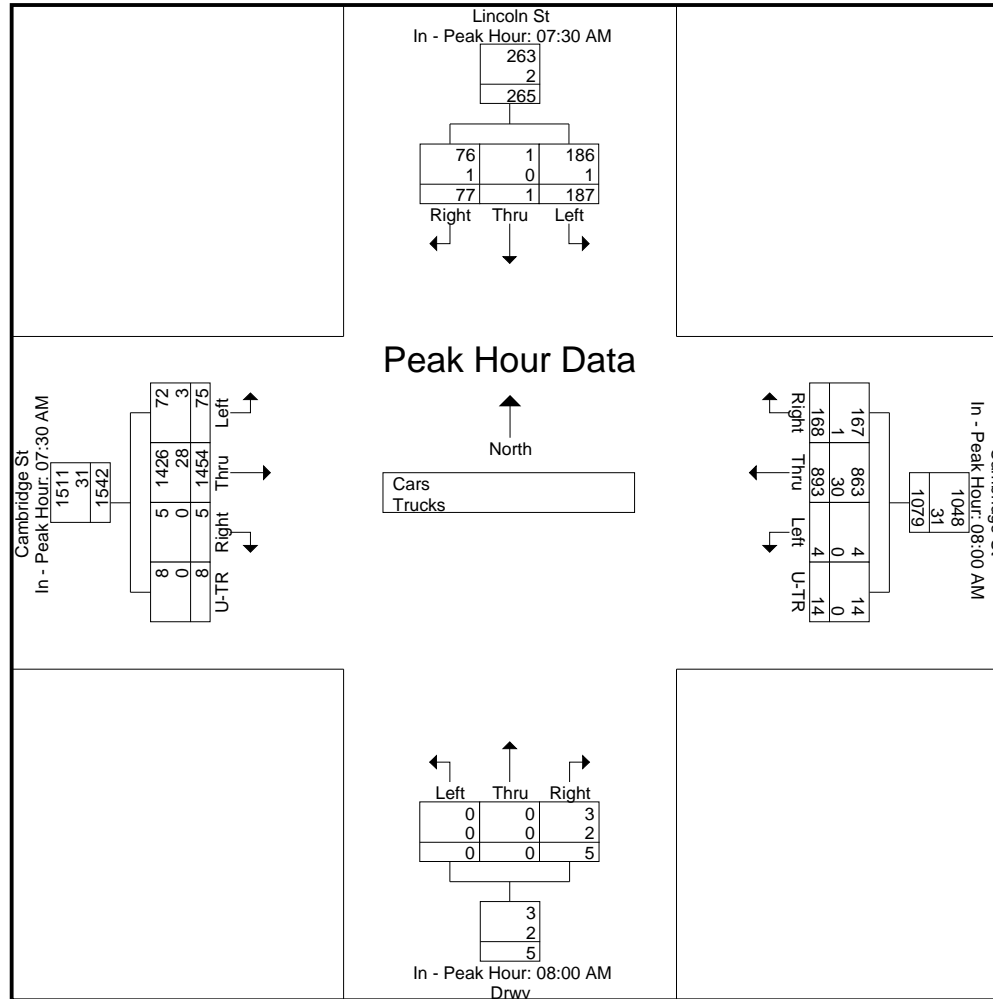
Peak Hour for Each Approach Begins at:

| | 07:30 AM | | | | 08:00 AM | | | | | 08:00 AM | | | | 07:30 AM | | | | |
|--------------|----------|-----|------|-----|----------|------|------|-----|------|----------|---|-----|---|----------|------|-----|-----|------|
| +0 mins. | 46 | 0 | 21 | 67 | 1 | 209 | 42 | 3 | 255 | 0 | 0 | 1 | 1 | 21 | 363 | 0 | 1 | 385 |
| +15 mins. | 39 | 1 | 18 | 58 | 1 | 224 | 34 | 4 | 263 | 0 | 0 | 1 | 1 | 18 | 392 | 5 | 0 | 415 |
| +30 mins. | 56 | 0 | 17 | 73 | 1 | 229 | 46 | 4 | 280 | 0 | 0 | 1 | 1 | 13 | 367 | 0 | 6 | 386 |
| +45 mins. | 46 | 0 | 21 | 67 | 1 | 231 | 46 | 3 | 281 | 0 | 0 | 2 | 2 | 23 | 332 | 0 | 1 | 356 |
| Total Volume | 187 | 1 | 77 | 265 | 4 | 893 | 168 | 14 | 1079 | 0 | 0 | 5 | 5 | 75 | 1454 | 5 | 8 | 1542 |
| % App. Total | 70.6 | 0.4 | 29.1 | | 0.4 | 82.8 | 15.6 | 1.3 | | 0 | 0 | 100 | | 4.9 | 94.3 | 0.3 | 0.5 | |

Accurate Counts

978-664-2565

| PHF | .835 | .250 | .917 | .908 | 1.000 | .966 | .913 | .875 | .960 | .000 | .000 | .625 | .625 | .815 | .927 | .250 | .333 | .929 |
|----------|------|------|------|------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Cars | 186 | 1 | 76 | 263 | 4 | 863 | 167 | 14 | 1048 | 0 | 0 | 3 | 3 | 72 | 1426 | 5 | 8 | 1511 |
| % Cars | 99.5 | 100 | 98.7 | 99.2 | 100 | 96.6 | 99.4 | 100 | 97.1 | 0 | 0 | 60 | 60 | 96 | 98.1 | 100 | 100 | 98 |
| Trucks | 1 | 0 | 1 | 2 | 0 | 30 | 1 | 0 | 31 | 0 | 0 | 2 | 2 | 3 | 28 | 0 | 0 | 31 |
| % Trucks | 0.5 | 0 | 1.3 | 0.8 | 0 | 3.4 | 0.6 | 0 | 2.9 | 0 | 0 | 40 | 40 | 4 | 1.9 | 0 | 0 | 2 |



Accurate Counts

978-664-2565

File Name : 35860001

Site Code : 35860001

Start Date : 4/9/2019

Page No : 1

N/S Street : Lincoln Street / Driveway

E/W Street: Cambridge Street

City/State : Allston, MA

Weather : Cloudy

Groups Printed- Cars

| | Lincoln St From North | | | Cambridge St From East | | | | Drwy From South | | | Cambridge St From West | | | | |
|-------------|--------------------------|------|-------|---------------------------|------|-------|------|--------------------|------|-------|---------------------------|------|-------|------|------------|
| Start Time | Left | Thru | Right | Left | Thru | Right | U-TR | Left | Thru | Right | Left | Thru | Right | U-TR | Int. Total |
| 07:00 AM | 33 | 0 | 9 | 1 | 205 | 23 | 6 | 0 | 0 | 1 | 10 | 295 | 0 | 0 | 583 |
| 07:15 AM | 43 | 1 | 18 | 0 | 215 | 34 | 3 | 0 | 0 | 0 | 10 | 329 | 0 | 0 | 653 |
| 07:30 AM | 45 | 0 | 21 | 0 | 184 | 42 | 3 | 0 | 0 | 0 | 21 | 355 | 0 | 1 | 672 |
| 07:45 AM | 39 | 1 | 18 | 2 | 176 | 32 | 8 | 0 | 0 | 1 | 17 | 384 | 5 | 0 | 683 |
| Total | 160 | 2 | 66 | 3 | 780 | 131 | 20 | 0 | 0 | 2 | 58 | 1363 | 5 | 1 | 2591 |
| 08:00 AM | 56 | 0 | 16 | 1 | 200 | 41 | 3 | 0 | 0 | 1 | 12 | 361 | 0 | 6 | 697 |
| 08:15 AM | 46 | 0 | 21 | 1 | 216 | 34 | 4 | 0 | 0 | 1 | 22 | 326 | 0 | 1 | 672 |
| 08:30 AM | 47 | 0 | 16 | 1 | 222 | 46 | 4 | 0 | 0 | 0 | 24 | 304 | 0 | 2 | 666 |
| 08:45 AM | 33 | 0 | 21 | 1 | 225 | 46 | 3 | 0 | 0 | 1 | 15 | 290 | 0 | 0 | 635 |
| Total | 182 | 0 | 74 | 4 | 863 | 167 | 14 | 0 | 0 | 3 | 73 | 1281 | 0 | 9 | 2670 |
| Grand Total | 342 | 2 | 140 | 7 | 1643 | 298 | 34 | 0 | 0 | 5 | 131 | 2644 | 5 | 10 | 5261 |
| Apprch % | 70.7 | 0.4 | 28.9 | 0.4 | 82.9 | 15 | 1.7 | 0 | 0 | 100 | 4.7 | 94.8 | 0.2 | 0.4 | |
| Total % | 6.5 | 0 | 2.7 | 0.1 | 31.2 | 5.7 | 0.6 | 0 | 0 | 0.1 | 2.5 | 50.3 | 0.1 | 0.2 | |

Accurate Counts

978-664-2565

File Name : 35860001

Site Code : 35860001

Start Date : 4/9/2019

Page No : 2

N/S Street : Lincoln Street / Driveway

E/W Street: Cambridge Street

City/State : Allston, MA

Weather : Cloudy

| | Lincoln St From North | | | | Cambridge St From East | | | | | Drwy From South | | | | Cambridge St From West | | | | | |
|--|--------------------------|------|-------|------------|---------------------------|------|-------|------|------------|--------------------|------|-------|------------|---------------------------|------|-------|------|------------|------------|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | U-TR | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | U-TR | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | | | | | | | | | | |
| 07:30 AM | 45 | 0 | 21 | 66 | 0 | 184 | 42 | 3 | 229 | 0 | 0 | 0 | 0 | 21 | 355 | 0 | 1 | 377 | 672 |
| 07:45 AM | 39 | 1 | 18 | 58 | 2 | 176 | 32 | 8 | 218 | 0 | 0 | 1 | 1 | 17 | 384 | 5 | 0 | 406 | 683 |
| 08:00 AM | 56 | 0 | 16 | 72 | 1 | 200 | 41 | 3 | 245 | 0 | 0 | 1 | 1 | 12 | 361 | 0 | 6 | 379 | 697 |
| 08:15 AM | 46 | 0 | 21 | 67 | 1 | 216 | 34 | 4 | 255 | 0 | 0 | 1 | 1 | 22 | 326 | 0 | 1 | 349 | 672 |
| Total Volume | 186 | 1 | 76 | 263 | 4 | 776 | 149 | 18 | 947 | 0 | 0 | 3 | 3 | 72 | 1426 | 5 | 8 | 1511 | 2724 |
| % App. Total | 70.7 | 0.4 | 28.9 | | 0.4 | 81.9 | 15.7 | 1.9 | | 0 | 0 | 100 | | 4.8 | 94.4 | 0.3 | 0.5 | | |
| PHF | .830 | .250 | .905 | .913 | .500 | .898 | .887 | .563 | .928 | .000 | .000 | .750 | .750 | .818 | .928 | .250 | .333 | .930 | .977 |

Accurate Counts

978-664-2565

File Name : 35860001

Site Code : 35860001

Start Date : 4/9/2019

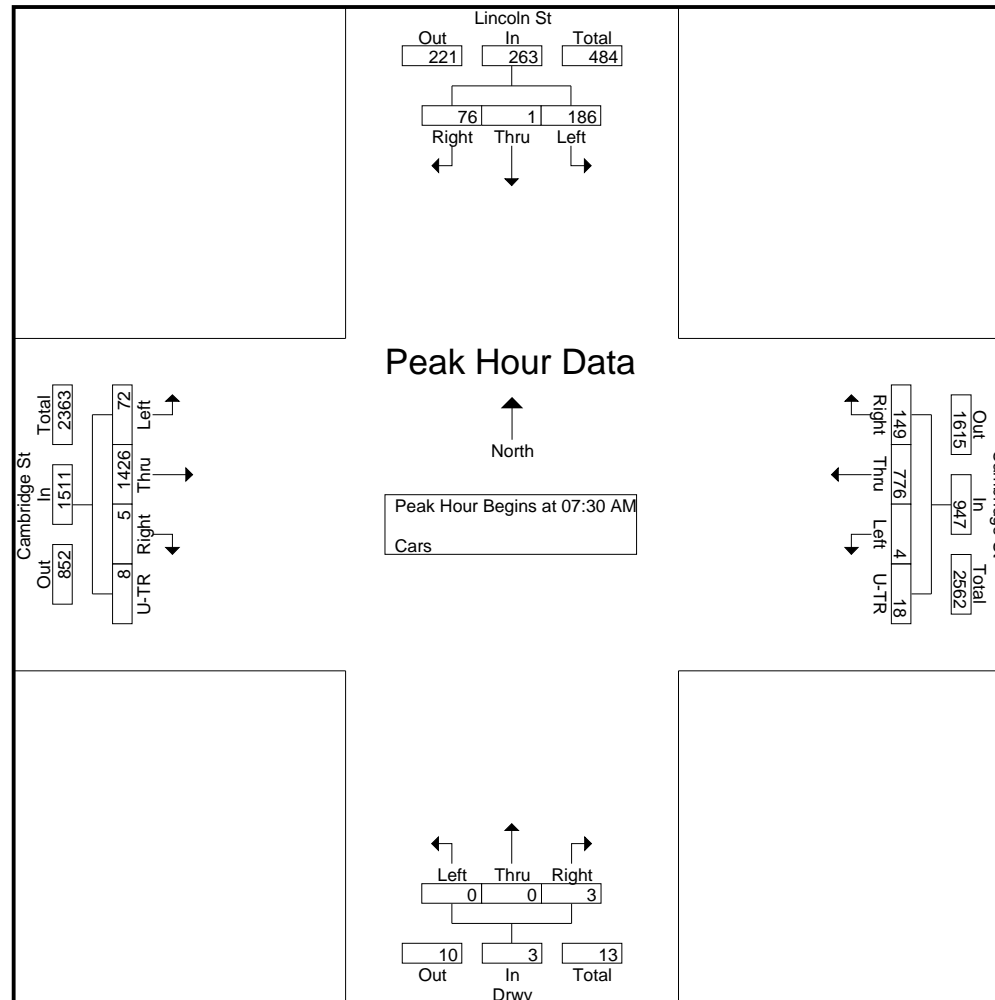
Page No : 3

N/S Street : Lincoln Street / Driveway

E/W Street: Cambridge Street

City/State : Allston, MA

Weather : Cloudy



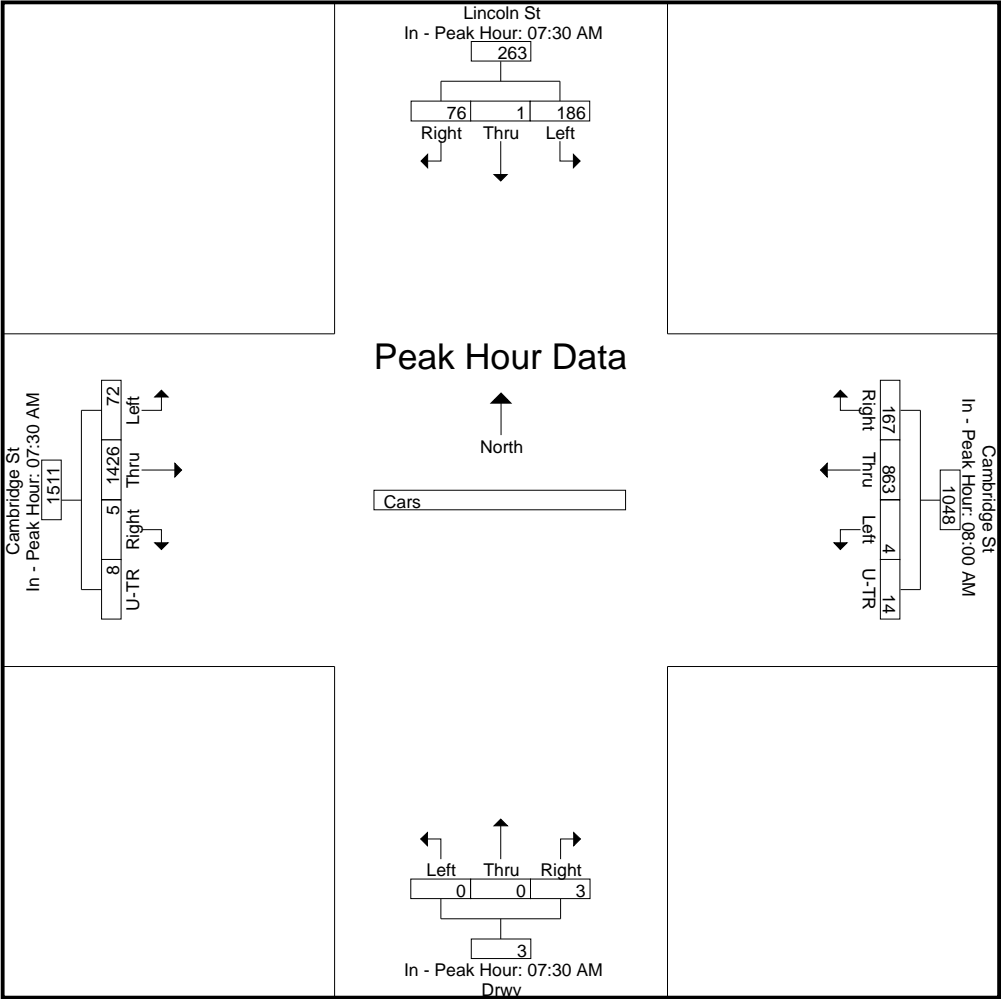
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

| | 07:30 AM | | | | 08:00 AM | | | | | 07:30 AM | | | | 07:30 AM | | | | |
|--------------|----------|-----|------|-----|----------|------|------|-----|------|----------|---|-----|---|----------|------|-----|-----|------|
| +0 mins. | 45 | 0 | 21 | 66 | 1 | 200 | 41 | 3 | 245 | 0 | 0 | 0 | 0 | 21 | 355 | 0 | 1 | 377 |
| +15 mins. | 39 | 1 | 18 | 58 | 1 | 216 | 34 | 4 | 255 | 0 | 0 | 1 | 1 | 17 | 384 | 5 | 0 | 406 |
| +30 mins. | 56 | 0 | 16 | 72 | 1 | 222 | 46 | 4 | 273 | 0 | 0 | 1 | 1 | 12 | 361 | 0 | 6 | 379 |
| +45 mins. | 46 | 0 | 21 | 67 | 1 | 225 | 46 | 3 | 275 | 0 | 0 | 1 | 1 | 22 | 326 | 0 | 1 | 349 |
| Total Volume | 186 | 1 | 76 | 263 | 4 | 863 | 167 | 14 | 1048 | 0 | 0 | 3 | 3 | 72 | 1426 | 5 | 8 | 1511 |
| % App. Total | 70.7 | 0.4 | 28.9 | | 0.4 | 82.3 | 15.9 | 1.3 | | 0 | 0 | 100 | | 4.8 | 94.4 | 0.3 | 0.5 | |

Accurate Counts
978-664-2565

| | | | | | | | | | | | | | | | | | | |
|-----|------|------|------|------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| PHF | .830 | .250 | .905 | .913 | 1.000 | .959 | .908 | .875 | .953 | .000 | .000 | .750 | .750 | .818 | .928 | .250 | .333 | .930 |
|-----|------|------|------|------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|



Accurate Counts

978-664-2565

File Name : 35860001

Site Code : 35860001

Start Date : 4/9/2019

Page No : 1

N/S Street : Lincoln Street / Driveway

E/W Street: Cambridge Street

City/State : Allston, MA

Weather : Cloudy

Groups Printed- Trucks

| | Lincoln St From North | | | Cambridge St From East | | | | Drwy From South | | | Cambridge St From West | | | | |
|-------------|--------------------------|------|-------|---------------------------|------|-------|------|--------------------|------|-------|---------------------------|------|-------|------|------------|
| Start Time | Left | Thru | Right | Left | Thru | Right | U-TR | Left | Thru | Right | Left | Thru | Right | U-TR | Int. Total |
| 07:00 AM | 0 | 0 | 0 | 2 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 21 |
| 07:15 AM | 1 | 0 | 0 | 0 | 12 | 2 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 25 |
| 07:30 AM | 1 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 17 |
| 07:45 AM | 0 | 0 | 0 | 1 | 13 | 1 | 0 | 0 | 0 | 0 | 1 | 8 | 0 | 0 | 24 |
| Total | 2 | 0 | 0 | 3 | 44 | 3 | 0 | 0 | 0 | 0 | 1 | 34 | 0 | 0 | 87 |
| 08:00 AM | 0 | 0 | 1 | 0 | 9 | 1 | 0 | 0 | 0 | 0 | 1 | 6 | 0 | 0 | 18 |
| 08:15 AM | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 0 | 0 | 15 |
| 08:30 AM | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 1 | 1 | 12 | 0 | 0 | 21 |
| 08:45 AM | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 1 | 0 | 15 | 0 | 0 | 22 |
| Total | 0 | 0 | 1 | 0 | 30 | 1 | 0 | 0 | 0 | 2 | 3 | 39 | 0 | 0 | 76 |
| Grand Total | 2 | 0 | 1 | 3 | 74 | 4 | 0 | 0 | 0 | 2 | 4 | 73 | 0 | 0 | 163 |
| Apprch % | 66.7 | 0 | 33.3 | 3.7 | 91.4 | 4.9 | 0 | 0 | 0 | 100 | 5.2 | 94.8 | 0 | 0 | |
| Total % | 1.2 | 0 | 0.6 | 1.8 | 45.4 | 2.5 | 0 | 0 | 0 | 1.2 | 2.5 | 44.8 | 0 | 0 | |

Accurate Counts

978-664-2565

File Name : 35860001

Site Code : 35860001

Start Date : 4/9/2019

Page No : 2

N/S Street : Lincoln Street / Driveway

E/W Street: Cambridge Street

City/State : Allston, MA

Weather : Cloudy

| | Lincoln St From North | | | | Cambridge St From East | | | | | Drwy From South | | | | Cambridge St From West | | | | | |
|--|--------------------------|------|-------|------------|---------------------------|------|-------|------|------------|--------------------|------|-------|------------|---------------------------|------|-------|------|------------|------------|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | U-TR | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | U-TR | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:00 AM | | | | | | | | | | | | | | | | | | | |
| 07:00 AM | 0 | 0 | 0 | 0 | 2 | 11 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 8 | 21 |
| 07:15 AM | 1 | 0 | 0 | 1 | 0 | 12 | 2 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 10 | 25 |
| 07:30 AM | 1 | 0 | 0 | 1 | 0 | 8 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 8 | 17 |
| 07:45 AM | 0 | 0 | 0 | 0 | 1 | 13 | 1 | 0 | 15 | 0 | 0 | 0 | 0 | 1 | 8 | 0 | 0 | 9 | 24 |
| Total Volume | 2 | 0 | 0 | 2 | 3 | 44 | 3 | 0 | 50 | 0 | 0 | 0 | 0 | 1 | 34 | 0 | 0 | 35 | 87 |
| % App. Total | 100 | 0 | 0 | | 6 | 88 | 6 | 0 | | 0 | 0 | 0 | | 2.9 | 97.1 | 0 | 0 | | |
| PHF | .500 | .000 | .000 | .500 | .375 | .846 | .375 | .000 | .833 | .000 | .000 | .000 | .000 | .250 | .850 | .000 | .000 | .875 | .870 |

Accurate Counts

978-664-2565

File Name : 35860001

Site Code : 35860001

Start Date : 4/9/2019

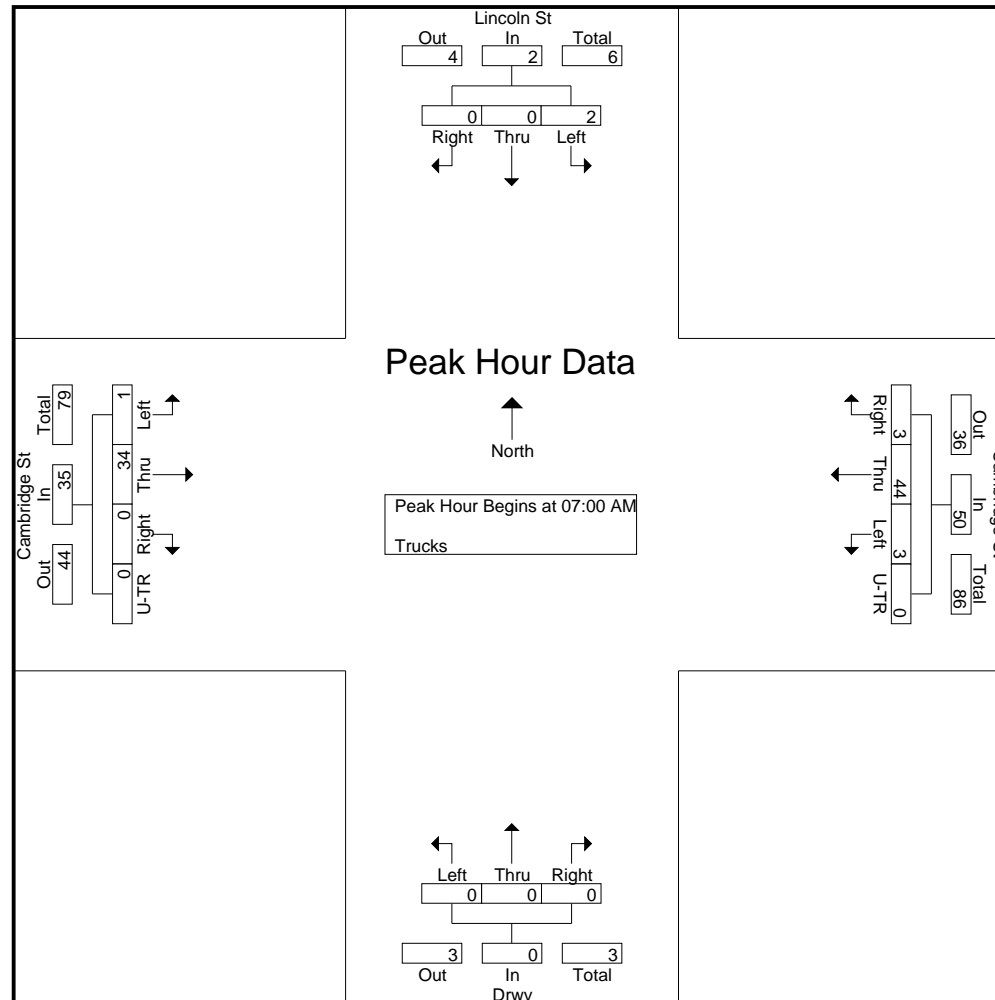
Page No : 3

N/S Street : Lincoln Street / Driveway

E/W Street: Cambridge Street

City/State : Allston, MA

Weather : Cloudy



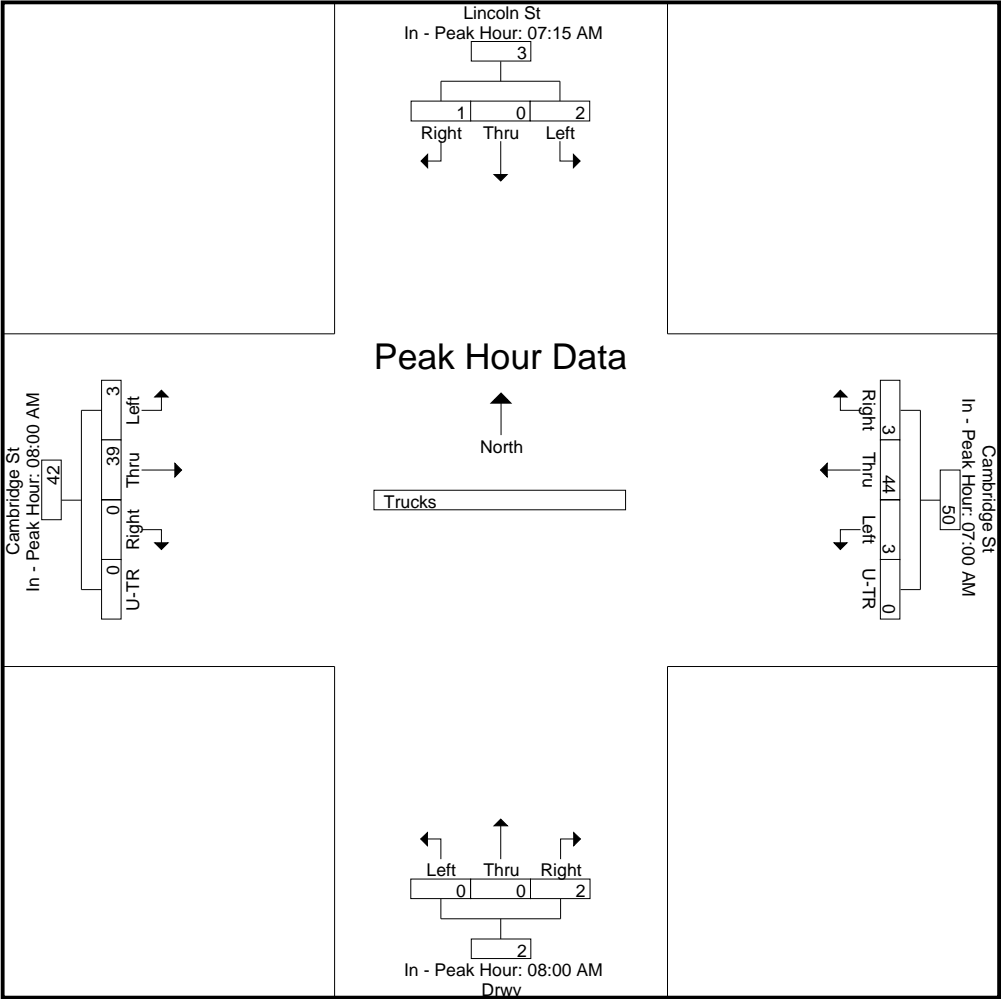
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

| | 07:15 AM | | | | 07:00 AM | | | | | 08:00 AM | | | | 08:00 AM | | | | |
|--------------|----------|---|------|---|----------|----|---|---|----|----------|---|-----|---|----------|------|---|---|----|
| +0 mins. | 1 | 0 | 0 | 1 | 2 | 11 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 1 | 6 | 0 | 0 | 7 |
| +15 mins. | 1 | 0 | 0 | 1 | 0 | 12 | 2 | 0 | 14 | 0 | 0 | 0 | 0 | 1 | 6 | 0 | 0 | 7 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 8 | 0 | 0 | 1 | 1 | 1 | 12 | 0 | 0 | 13 |
| +45 mins. | 0 | 0 | 1 | 1 | 1 | 13 | 1 | 0 | 15 | 0 | 0 | 1 | 1 | 0 | 15 | 0 | 0 | 15 |
| Total Volume | 2 | 0 | 1 | 3 | 3 | 44 | 3 | 0 | 50 | 0 | 0 | 2 | 2 | 3 | 39 | 0 | 0 | 42 |
| % App. Total | 66.7 | 0 | 33.3 | | 6 | 88 | 6 | 0 | | 0 | 0 | 100 | | 7.1 | 92.9 | 0 | 0 | |

Accurate Counts
978-664-2565

| | | | | | | | | | | | | | | | | | | |
|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| PHF | .500 | .000 | .250 | .750 | .375 | .846 | .375 | .000 | .833 | .000 | .000 | .500 | .500 | .750 | .650 | .000 | .000 | .700 |
|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|



Accurate Counts

978-664-2565

File Name : 35860001

Site Code : 35860001

Start Date : 4/9/2019

Page No : 1

N/S Street : Lincoln Street / Driveway

E/W Street: Cambridge Street

City/State : Allston, MA

Weather : Cloudy

Groups Printed- Bikes Peds

| | Lincoln St From North | | | | Cambridge St From East | | | | Drwy From South | | | | Cambridge St From West | | | | Exclu. Total | Inclu. Total | Int. Total |
|-------------|--------------------------|------|-------|------|---------------------------|------|-------|------|--------------------|------|-------|------|---------------------------|------|-------|------|--------------|--------------|------------|
| Start Time | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | | | |
| 07:00 AM | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 07:15 AM | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 3 | 2 | 5 |
| 07:30 AM | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 2 | 0 | 0 | 6 | 2 | 8 |
| 07:45 AM | 0 | 0 | 2 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 7 | 0 | 0 | 5 | 12 | 17 |
| Total | 0 | 0 | 2 | 9 | 0 | 4 | 0 | 1 | 0 | 0 | 0 | 5 | 0 | 10 | 0 | 0 | 15 | 16 | 31 |
| 08:00 AM | 2 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 3 | 4 | 7 |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 3 | 0 | 4 | 0 | 0 | 5 | 5 | 10 |
| 08:30 AM | 0 | 0 | 0 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 7 | 7 | 14 |
| 08:45 AM | 0 | 0 | 1 | 3 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 5 | 0 | 7 | 0 | 0 | 10 | 9 | 19 |
| Total | 2 | 0 | 1 | 13 | 0 | 3 | 1 | 4 | 0 | 0 | 0 | 8 | 0 | 18 | 0 | 0 | 25 | 25 | 50 |
| Grand Total | 2 | 0 | 3 | 22 | 0 | 7 | 1 | 5 | 0 | 0 | 0 | 13 | 0 | 28 | 0 | 0 | 40 | 41 | 81 |
| Apprch % | 40 | 0 | 60 | | 0 | 87.5 | 12.5 | | 0 | 0 | 0 | | 0 | 100 | 0 | | | | |
| Total % | 4.9 | 0 | 7.3 | | 0 | 17.1 | 2.4 | | 0 | 0 | 0 | | 0 | 68.3 | 0 | | 49.4 | 50.6 | |

Accurate Counts

978-664-2565

File Name : 35860001

Site Code : 35860001

Start Date : 4/9/2019

Page No : 2

N/S Street : Lincoln Street / Driveway

E/W Street: Cambridge Street

City/State : Allston, MA

Weather : Cloudy

| | Lincoln St From North | | | | Cambridge St From East | | | | Drwy From South | | | | Cambridge St From West | | | | |
|--|--------------------------|------|-------|------------|---------------------------|------|-------|------------|--------------------|------|-------|------------|---------------------------|------|-------|------------|------------|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:45 AM | | | | | | | | | | | | | | | | | |
| 07:45 AM | 0 | 0 | 2 | 2 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 7 | 12 |
| 08:00 AM | 2 | 0 | 0 | 2 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 4 |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 4 | 5 |
| 08:30 AM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 6 | 7 |
| Total Volume | 2 | 0 | 2 | 4 | 0 | 6 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 18 | 28 |
| % App. Total | 50 | 0 | 50 | | 0 | 100 | 0 | | 0 | 0 | 0 | | 0 | 100 | 0 | | |
| PHF | .250 | .000 | .250 | .500 | .000 | .500 | .000 | .500 | .000 | .000 | .000 | .000 | .000 | .643 | .000 | .643 | .583 |

Accurate Counts

978-664-2565

File Name : 35860001

Site Code : 35860001

Start Date : 4/9/2019

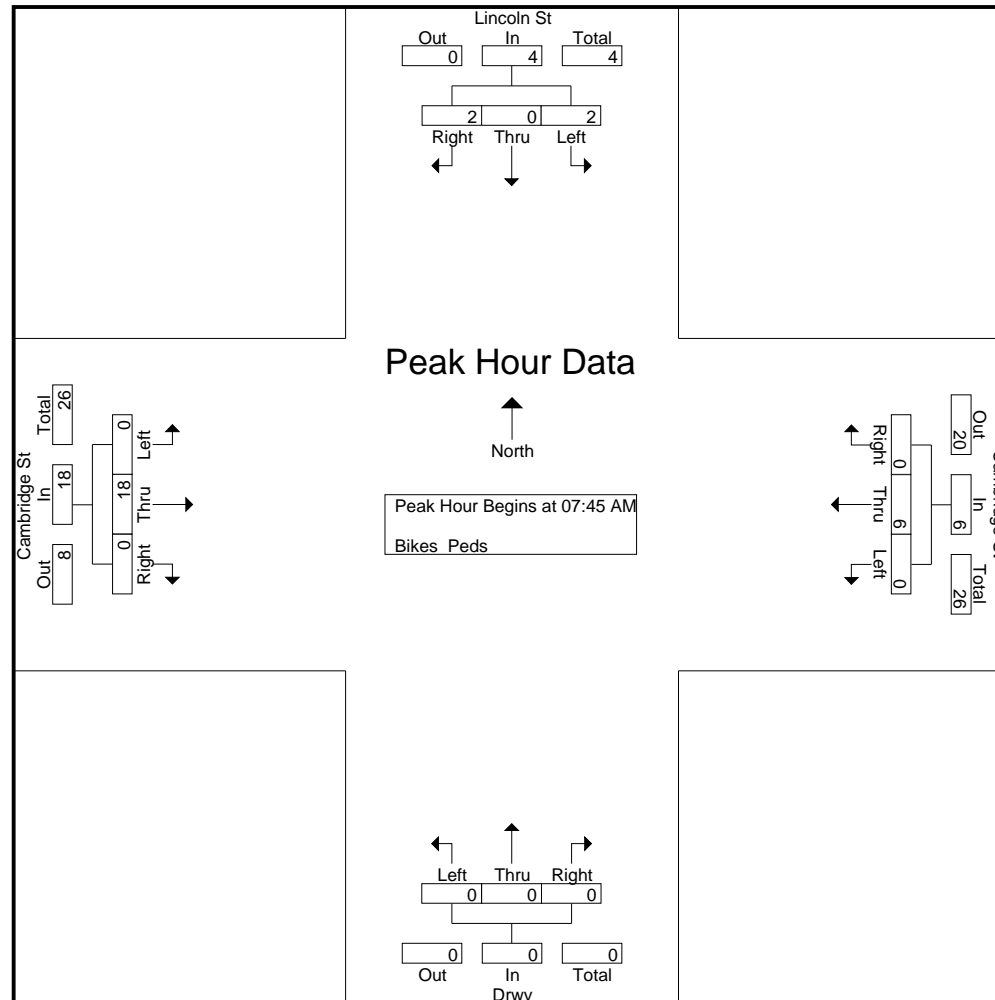
Page No : 3

N/S Street : Lincoln Street / Driveway

E/W Street: Cambridge Street

City/State : Allston, MA

Weather : Cloudy



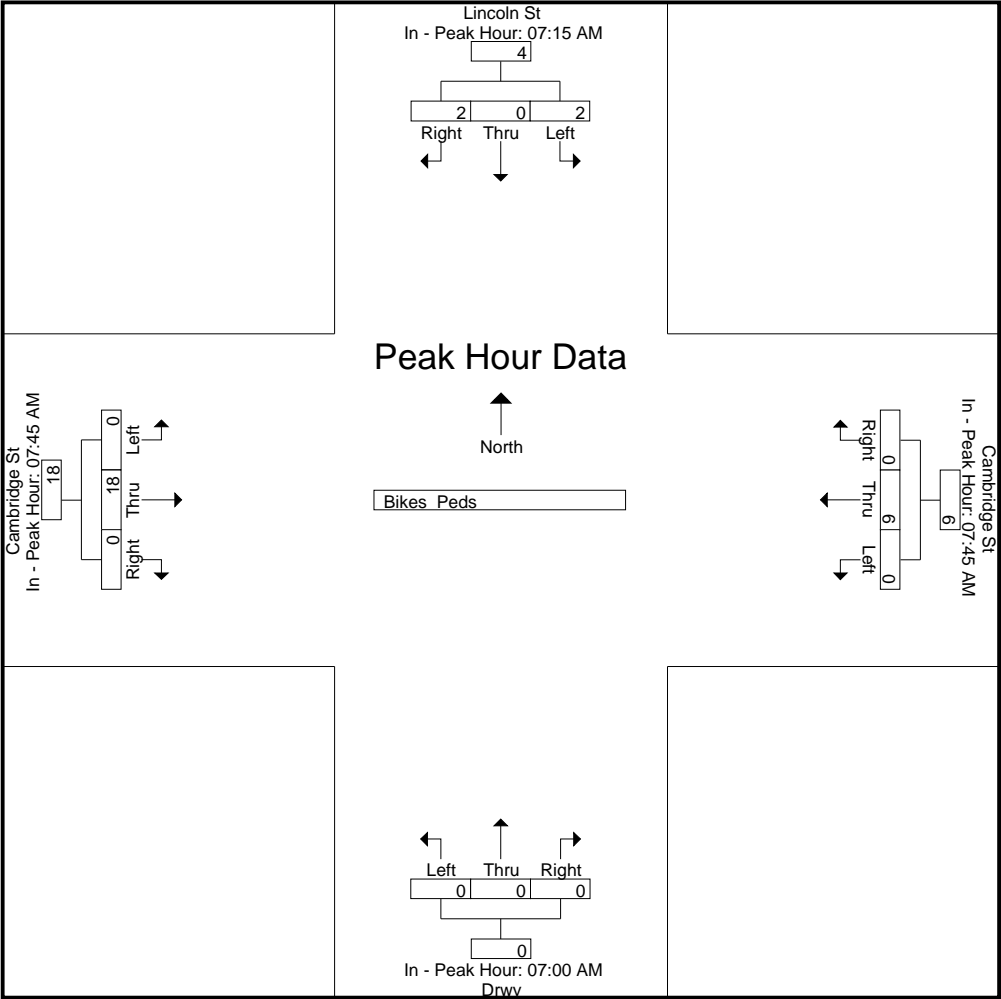
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

| | 07:15 AM | | | | 07:45 AM | | | | 07:00 AM | | | | 07:45 AM | | | |
|--------------|----------|---|----|---|----------|-----|---|---|----------|---|---|---|----------|-----|---|----|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 7 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| +30 mins. | 0 | 0 | 2 | 2 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 4 |
| +45 mins. | 2 | 0 | 0 | 2 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 6 |
| Total Volume | 2 | 0 | 2 | 4 | 0 | 6 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 18 |
| % App. Total | 50 | 0 | 50 | | 0 | 100 | 0 | | 0 | 0 | 0 | | 0 | 100 | 0 | |

Accurate Counts
978-664-2565

| | | | | | | | | | | | | | | | | | |
|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| PHF | .250 | .000 | .250 | .500 | .000 | .500 | .000 | .500 | .000 | .000 | .000 | .000 | .000 | .000 | .643 | .000 | .643 |
|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|



Accurate Counts

978-664-2565

File Name : 35860001

Site Code : 35860001

Start Date : 4/9/2019

Page No : 1

N/S Street : Lincoln Street / Driveway

E/W Street: Cambridge Street

City/State : Allston, MA

Weather : Cloudy

Groups Printed- Cars - Trucks

| | Lincoln St From North | | | Cambridge St From East | | | | Drwy From South | | | Cambridge St From West | | | | |
|-------------|--------------------------|------|-------|---------------------------|------|-------|------|--------------------|------|-------|---------------------------|------|-------|------|------------|
| Start Time | Left | Thru | Right | Left | Thru | Right | U-TR | Left | Thru | Right | Left | Thru | Right | U-TR | Int. Total |
| 04:00 PM | 41 | 0 | 17 | 0 | 231 | 24 | 6 | 0 | 1 | 1 | 33 | 295 | 0 | 1 | 650 |
| 04:15 PM | 33 | 0 | 15 | 0 | 260 | 49 | 6 | 0 | 0 | 0 | 30 | 290 | 0 | 1 | 684 |
| 04:30 PM | 33 | 0 | 17 | 0 | 262 | 51 | 1 | 0 | 0 | 0 | 29 | 255 | 0 | 2 | 650 |
| 04:45 PM | 29 | 0 | 19 | 1 | 276 | 37 | 3 | 0 | 1 | 0 | 28 | 278 | 0 | 2 | 674 |
| Total | 136 | 0 | 68 | 1 | 1029 | 161 | 16 | 0 | 2 | 1 | 120 | 1118 | 0 | 6 | 2658 |
| 05:00 PM | 45 | 0 | 15 | 0 | 311 | 29 | 6 | 0 | 0 | 0 | 27 | 266 | 0 | 1 | 700 |
| 05:15 PM | 40 | 0 | 18 | 0 | 280 | 48 | 4 | 0 | 0 | 0 | 42 | 313 | 0 | 2 | 747 |
| 05:30 PM | 37 | 0 | 10 | 0 | 271 | 56 | 3 | 0 | 0 | 0 | 35 | 358 | 0 | 2 | 772 |
| 05:45 PM | 31 | 0 | 11 | 0 | 248 | 59 | 2 | 0 | 0 | 0 | 36 | 309 | 0 | 4 | 700 |
| Total | 153 | 0 | 54 | 0 | 1110 | 192 | 15 | 0 | 0 | 0 | 140 | 1246 | 0 | 9 | 2919 |
| Grand Total | 289 | 0 | 122 | 1 | 2139 | 353 | 31 | 0 | 2 | 1 | 260 | 2364 | 0 | 15 | 5577 |
| Apprch % | 70.3 | 0 | 29.7 | 0 | 84.7 | 14 | 1.2 | 0 | 66.7 | 33.3 | 9.9 | 89.6 | 0 | 0.6 | |
| Total % | 5.2 | 0 | 2.2 | 0 | 38.4 | 6.3 | 0.6 | 0 | 0 | 0 | 4.7 | 42.4 | 0 | 0.3 | |
| Cars | 286 | 0 | 120 | 1 | 2104 | 351 | 31 | 0 | 2 | 1 | 259 | 2315 | 0 | 15 | 5485 |
| % Cars | 99 | 0 | 98.4 | 100 | 98.4 | 99.4 | 100 | 0 | 100 | 100 | 99.6 | 97.9 | 0 | 100 | 98.4 |
| Trucks | 3 | 0 | 2 | 0 | 35 | 2 | 0 | 0 | 0 | 0 | 1 | 49 | 0 | 0 | 92 |
| % Trucks | 1 | 0 | 1.6 | 0 | 1.6 | 0.6 | 0 | 0 | 0 | 0 | 0.4 | 2.1 | 0 | 0 | 1.6 |

Accurate Counts

978-664-2565

File Name : 35860001

Site Code : 35860001

Start Date : 4/9/2019

Page No : 2

N/S Street : Lincoln Street / Driveway

E/W Street: Cambridge Street

City/State : Allston, MA

Weather : Cloudy

| | Lincoln St From North | | | | Cambridge St From East | | | | | Drwy From South | | | | Cambridge St From West | | | | | |
|--|--------------------------|------|-------|------------|---------------------------|------|-------|------|------------|--------------------|------|-------|------------|---------------------------|------|-------|------|------------|------------|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | U-TR | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | U-TR | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 05:00 PM | | | | | | | | | | | | | | | | | | | |
| 05:00 PM | 45 | 0 | 15 | 60 | 0 | 311 | 29 | 6 | 346 | 0 | 0 | 0 | 0 | 27 | 266 | 0 | 1 | 294 | 700 |
| 05:15 PM | 40 | 0 | 18 | 58 | 0 | 280 | 48 | 4 | 332 | 0 | 0 | 0 | 0 | 42 | 313 | 0 | 2 | 357 | 747 |
| 05:30 PM | 37 | 0 | 10 | 47 | 0 | 271 | 56 | 3 | 330 | 0 | 0 | 0 | 0 | 35 | 358 | 0 | 2 | 395 | 772 |
| 05:45 PM | 31 | 0 | 11 | 42 | 0 | 248 | 59 | 2 | 309 | 0 | 0 | 0 | 0 | 36 | 309 | 0 | 4 | 349 | 700 |
| Total Volume | 153 | 0 | 54 | 207 | 0 | 1110 | 192 | 15 | 1317 | 0 | 0 | 0 | 0 | 140 | 1246 | 0 | 9 | 1395 | 2919 |
| % App. Total | 73.9 | 0 | 26.1 | | 0 | 84.3 | 14.6 | 1.1 | | 0 | 0 | 0 | | 10 | 89.3 | 0 | 0.6 | | |
| PHF | .850 | .000 | .750 | .863 | .000 | .892 | .814 | .625 | .952 | .000 | .000 | .000 | .000 | .833 | .870 | .000 | .563 | .883 | .945 |
| Cars | 152 | 0 | 53 | 205 | 0 | 1095 | 192 | 15 | 1302 | 0 | 0 | 0 | 0 | 139 | 1220 | 0 | 9 | 1368 | 2875 |
| % Cars | 99.3 | 0 | 98.1 | 99.0 | 0 | 98.6 | 100 | 100 | 98.9 | 0 | 0 | 0 | 0 | 99.3 | 97.9 | 0 | 100 | 98.1 | 98.5 |
| Trucks | 1 | 0 | 1 | 2 | 0 | 15 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 1 | 26 | 0 | 0 | 27 | 44 |
| % Trucks | 0.7 | 0 | 1.9 | 1.0 | 0 | 1.4 | 0 | 0 | 1.1 | 0 | 0 | 0 | 0 | 0.7 | 2.1 | 0 | 0 | 1.9 | 1.5 |

Accurate Counts

978-664-2565

File Name : 35860001

Site Code : 35860001

Start Date : 4/9/2019

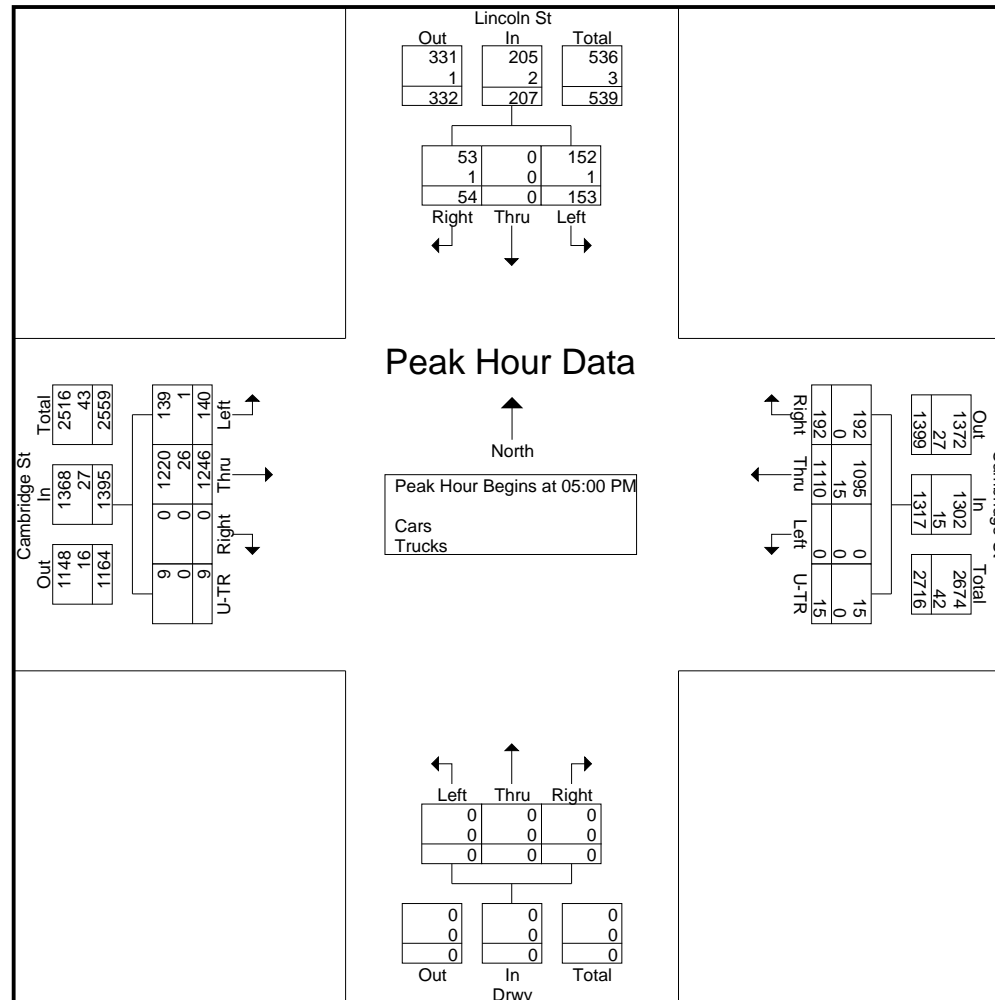
Page No : 3

N/S Street : Lincoln Street / Driveway

E/W Street: Cambridge Street

City/State : Allston, MA

Weather : Cloudy



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

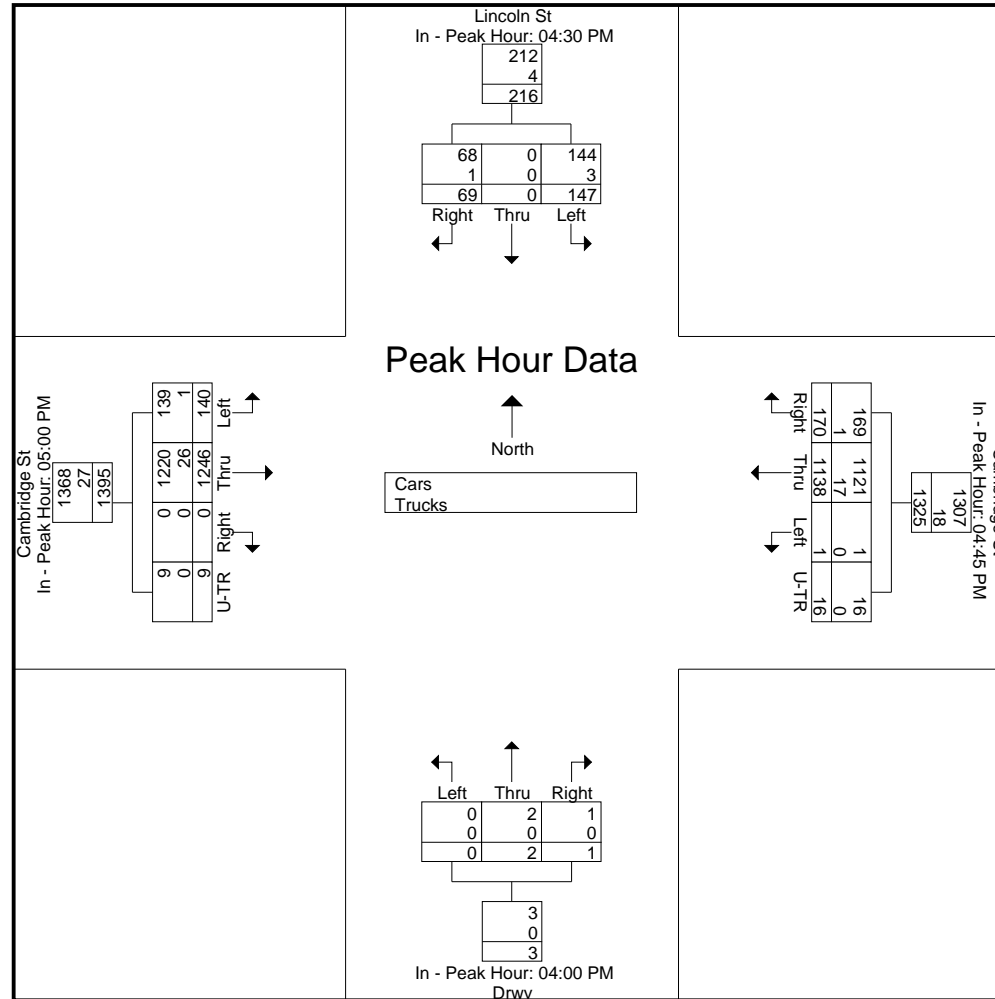
Peak Hour for Each Approach Begins at:

| | 04:30 PM | | | | 04:45 PM | | | | | 04:00 PM | | | | 05:00 PM | | | | |
|--------------|----------|---|------|-----|----------|------|------|-----|------|----------|------|------|---|----------|------|---|-----|------|
| +0 mins. | 33 | 0 | 17 | 50 | 1 | 276 | 37 | 3 | 317 | 0 | 1 | 1 | 2 | 27 | 266 | 0 | 1 | 294 |
| +15 mins. | 29 | 0 | 19 | 48 | 0 | 311 | 29 | 6 | 346 | 0 | 0 | 0 | 0 | 42 | 313 | 0 | 2 | 357 |
| +30 mins. | 45 | 0 | 15 | 60 | 0 | 280 | 48 | 4 | 332 | 0 | 0 | 0 | 0 | 35 | 358 | 0 | 2 | 395 |
| +45 mins. | 40 | 0 | 18 | 58 | 0 | 271 | 56 | 3 | 330 | 0 | 1 | 0 | 1 | 36 | 309 | 0 | 4 | 349 |
| Total Volume | 147 | 0 | 69 | 216 | 1 | 1138 | 170 | 16 | 1325 | 0 | 2 | 1 | 3 | 140 | 1246 | 0 | 9 | 1395 |
| % App. Total | 68.1 | 0 | 31.9 | | 0.1 | 85.9 | 12.8 | 1.2 | | 0 | 66.7 | 33.3 | | 10 | 89.3 | 0 | 0.6 | |

Accurate Counts

978-664-2565

| PHF | .817 | .000 | .908 | .900 | .250 | .915 | .759 | .667 | .957 | .000 | .500 | .250 | .375 | .833 | .870 | .000 | .563 | .883 |
|----------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Cars | 144 | 0 | 68 | 212 | 1 | 1121 | 169 | 16 | 1307 | 0 | 2 | 1 | 3 | 139 | 1220 | 0 | 9 | 1368 |
| % Cars | 98 | 0 | 98.6 | 98.1 | 100 | 98.5 | 99.4 | 100 | 98.6 | 0 | 100 | 100 | 100 | 99.3 | 97.9 | 0 | 100 | 98.1 |
| Trucks | 3 | 0 | 1 | 4 | 0 | 17 | 1 | 0 | 18 | 0 | 0 | 0 | 0 | 1 | 26 | 0 | 0 | 27 |
| % Trucks | 2 | 0 | 1.4 | 1.9 | 0 | 1.5 | 0.6 | 0 | 1.4 | 0 | 0 | 0 | 0 | 0.7 | 2.1 | 0 | 0 | 1.9 |



Accurate Counts

978-664-2565

File Name : 35860001

Site Code : 35860001

Start Date : 4/9/2019

Page No : 1

N/S Street : Lincoln Street / Driveway

E/W Street: Cambridge Street

City/State : Allston, MA

Weather : Cloudy

Groups Printed- Cars

| | Lincoln St From North | | | Cambridge St From East | | | | Drwy From South | | | Cambridge St From West | | | | |
|-------------|--------------------------|------|-------|---------------------------|------|-------|------|--------------------|------|-------|---------------------------|------|-------|------|------------|
| Start Time | Left | Thru | Right | Left | Thru | Right | U-TR | Left | Thru | Right | Left | Thru | Right | U-TR | Int. Total |
| 04:00 PM | 41 | 0 | 16 | 0 | 227 | 24 | 6 | 0 | 1 | 1 | 33 | 290 | 0 | 1 | 640 |
| 04:15 PM | 33 | 0 | 15 | 0 | 254 | 49 | 6 | 0 | 0 | 0 | 30 | 285 | 0 | 1 | 673 |
| 04:30 PM | 33 | 0 | 17 | 0 | 257 | 50 | 1 | 0 | 0 | 0 | 29 | 246 | 0 | 2 | 635 |
| 04:45 PM | 27 | 0 | 19 | 1 | 271 | 36 | 3 | 0 | 1 | 0 | 28 | 274 | 0 | 2 | 662 |
| Total | 134 | 0 | 67 | 1 | 1009 | 159 | 16 | 0 | 2 | 1 | 120 | 1095 | 0 | 6 | 2610 |
| 05:00 PM | 44 | 0 | 15 | 0 | 309 | 29 | 6 | 0 | 0 | 0 | 26 | 258 | 0 | 1 | 688 |
| 05:15 PM | 40 | 0 | 17 | 0 | 273 | 48 | 4 | 0 | 0 | 0 | 42 | 308 | 0 | 2 | 734 |
| 05:30 PM | 37 | 0 | 10 | 0 | 268 | 56 | 3 | 0 | 0 | 0 | 35 | 354 | 0 | 2 | 765 |
| 05:45 PM | 31 | 0 | 11 | 0 | 245 | 59 | 2 | 0 | 0 | 0 | 36 | 300 | 0 | 4 | 688 |
| Total | 152 | 0 | 53 | 0 | 1095 | 192 | 15 | 0 | 0 | 0 | 139 | 1220 | 0 | 9 | 2875 |
| Grand Total | 286 | 0 | 120 | 1 | 2104 | 351 | 31 | 0 | 2 | 1 | 259 | 2315 | 0 | 15 | 5485 |
| Apprch % | 70.4 | 0 | 29.6 | 0 | 84.6 | 14.1 | 1.2 | 0 | 66.7 | 33.3 | 10 | 89.4 | 0 | 0.6 | |
| Total % | 5.2 | 0 | 2.2 | 0 | 38.4 | 6.4 | 0.6 | 0 | 0 | 0 | 4.7 | 42.2 | 0 | 0.3 | |

Accurate Counts

978-664-2565

File Name : 35860001

Site Code : 35860001

Start Date : 4/9/2019

Page No : 2

N/S Street : Lincoln Street / Driveway

E/W Street: Cambridge Street

City/State : Allston, MA

Weather : Cloudy

| | Lincoln St From North | | | | Cambridge St From East | | | | | Drwy From South | | | | Cambridge St From West | | | | | |
|--|--------------------------|------|-------|------------|---------------------------|------|-------|------|------------|--------------------|------|-------|------------|---------------------------|------|-------|------|------------|------------|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | U-TR | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | U-TR | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 05:00 PM | | | | | | | | | | | | | | | | | | | |
| 05:00 PM | 44 | 0 | 15 | 59 | 0 | 309 | 29 | 6 | 344 | 0 | 0 | 0 | 0 | 26 | 258 | 0 | 1 | 285 | 688 |
| 05:15 PM | 40 | 0 | 17 | 57 | 0 | 273 | 48 | 4 | 325 | 0 | 0 | 0 | 0 | 42 | 308 | 0 | 2 | 352 | 734 |
| 05:30 PM | 37 | 0 | 10 | 47 | 0 | 268 | 56 | 3 | 327 | 0 | 0 | 0 | 0 | 35 | 354 | 0 | 2 | 391 | 765 |
| 05:45 PM | 31 | 0 | 11 | 42 | 0 | 245 | 59 | 2 | 306 | 0 | 0 | 0 | 0 | 36 | 300 | 0 | 4 | 340 | 688 |
| Total Volume | 152 | 0 | 53 | 205 | 0 | 1095 | 192 | 15 | 1302 | 0 | 0 | 0 | 0 | 139 | 1220 | 0 | 9 | 1368 | 2875 |
| % App. Total | 74.1 | 0 | 25.9 | | 0 | 84.1 | 14.7 | 1.2 | | 0 | 0 | 0 | | 10.2 | 89.2 | 0 | 0.7 | | |
| PHF | .864 | .000 | .779 | .869 | .000 | .886 | .814 | .625 | .946 | .000 | .000 | .000 | .000 | .827 | .862 | .000 | .563 | .875 | .940 |

Accurate Counts

978-664-2565

File Name : 35860001

Site Code : 35860001

Start Date : 4/9/2019

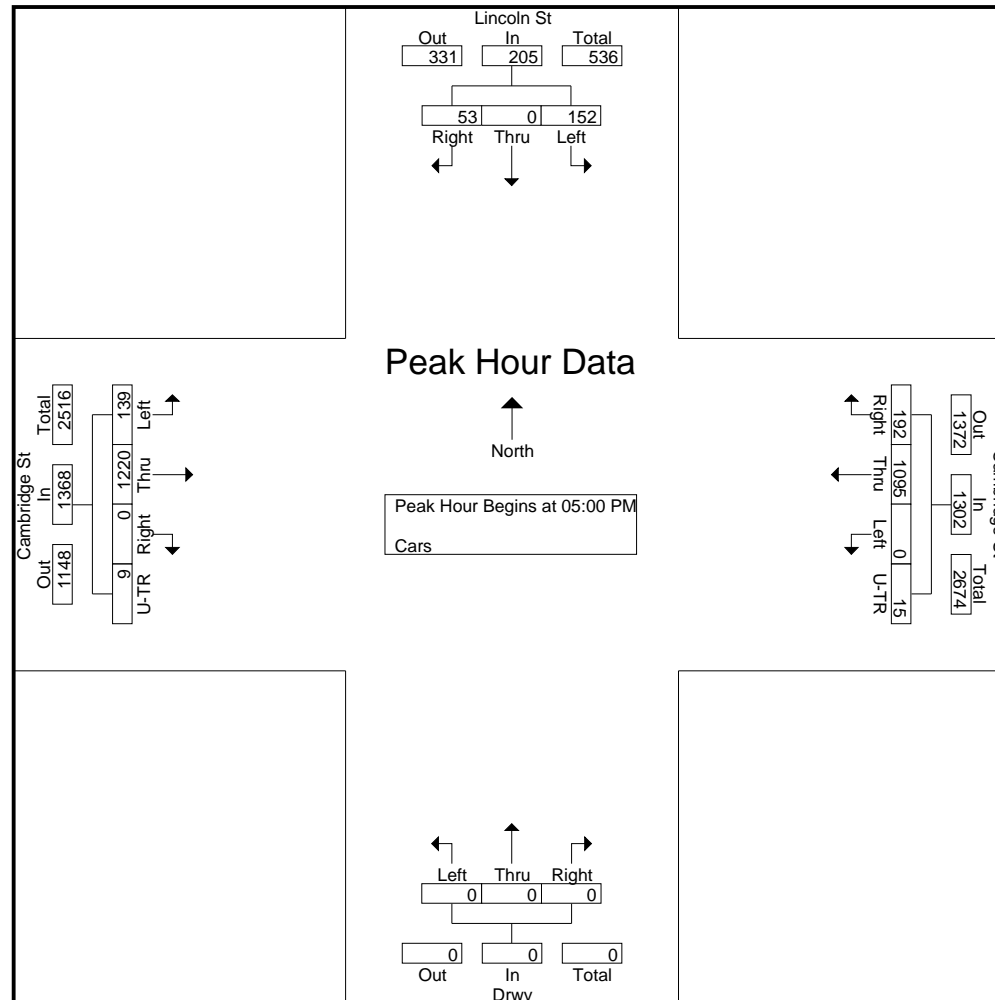
Page No : 3

N/S Street : Lincoln Street / Driveway

E/W Street: Cambridge Street

City/State : Allston, MA

Weather : Cloudy



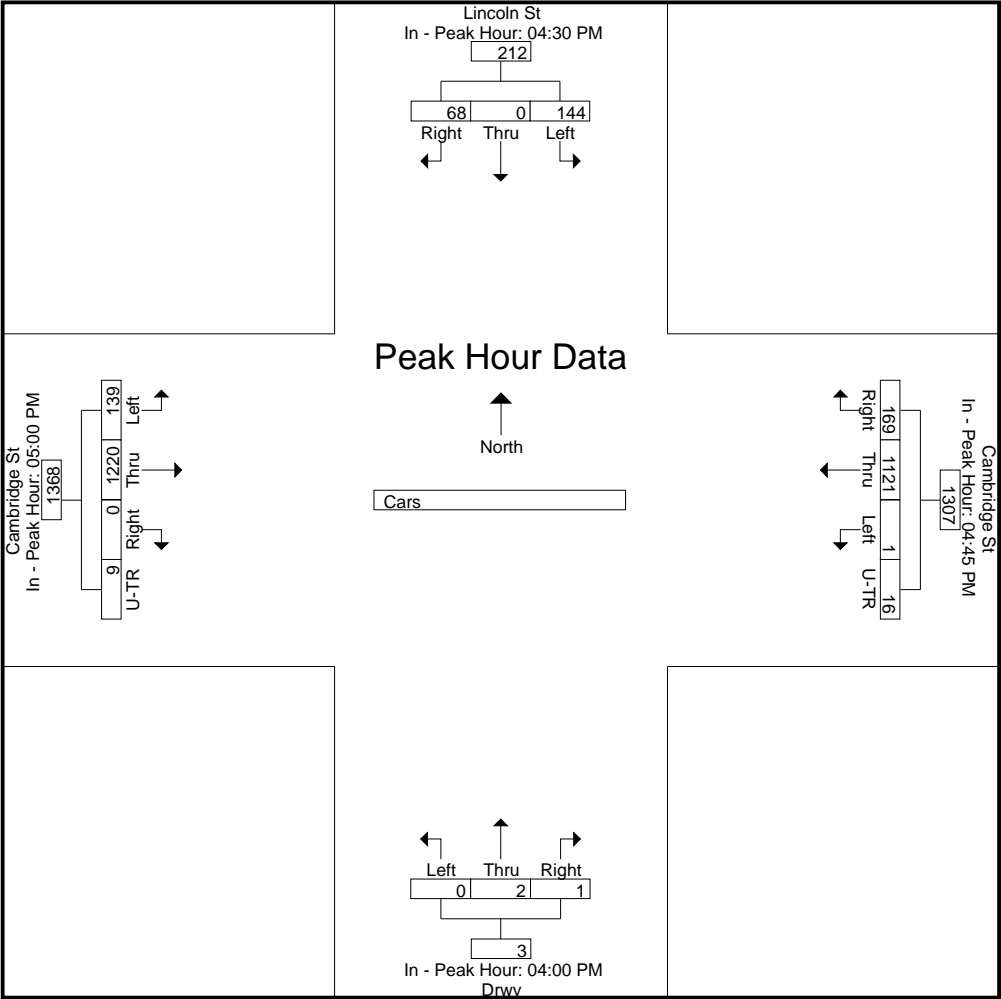
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

| | 04:30 PM | | | | 04:45 PM | | | | | 04:00 PM | | | | 05:00 PM | | | | |
|--------------|----------|---|------|-----|----------|------|------|-----|------|----------|------|------|---|----------|------|---|-----|------|
| +0 mins. | 33 | 0 | 17 | 50 | 1 | 271 | 36 | 3 | 311 | 0 | 1 | 1 | 2 | 26 | 258 | 0 | 1 | 285 |
| +15 mins. | 27 | 0 | 19 | 46 | 0 | 309 | 29 | 6 | 344 | 0 | 0 | 0 | 0 | 42 | 308 | 0 | 2 | 352 |
| +30 mins. | 44 | 0 | 15 | 59 | 0 | 273 | 48 | 4 | 325 | 0 | 0 | 0 | 0 | 35 | 354 | 0 | 2 | 391 |
| +45 mins. | 40 | 0 | 17 | 57 | 0 | 268 | 56 | 3 | 327 | 0 | 1 | 0 | 1 | 36 | 300 | 0 | 4 | 340 |
| Total Volume | 144 | 0 | 68 | 212 | 1 | 1121 | 169 | 16 | 1307 | 0 | 2 | 1 | 3 | 139 | 1220 | 0 | 9 | 1368 |
| % App. Total | 67.9 | 0 | 32.1 | | 0.1 | 85.8 | 12.9 | 1.2 | | 0 | 66.7 | 33.3 | | 10.2 | 89.2 | 0 | 0.7 | |

Accurate Counts
978-664-2565

| | | | | | | | | | | | | | | | | | | |
|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| PHF | .818 | .000 | .895 | .898 | .250 | .907 | .754 | .667 | .950 | .000 | .500 | .250 | .375 | .827 | .862 | .000 | .563 | .875 |
|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|



Accurate Counts

978-664-2565

File Name : 35860001

Site Code : 35860001

Start Date : 4/9/2019

Page No : 1

N/S Street : Lincoln Street / Driveway

E/W Street: Cambridge Street

City/State : Allston, MA

Weather : Cloudy

Groups Printed- Trucks

| | Lincoln St From North | | | Cambridge St From East | | | | Drwy From South | | | Cambridge St From West | | | | |
|-------------|--------------------------|------|-------|---------------------------|------|-------|------|--------------------|------|-------|---------------------------|------|-------|------|------------|
| Start Time | Left | Thru | Right | Left | Thru | Right | U-TR | Left | Thru | Right | Left | Thru | Right | U-TR | Int. Total |
| 04:00 PM | 0 | 0 | 1 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 10 |
| 04:15 PM | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 11 |
| 04:30 PM | 0 | 0 | 0 | 0 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 15 |
| 04:45 PM | 2 | 0 | 0 | 0 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 12 |
| Total | 2 | 0 | 1 | 0 | 20 | 2 | 0 | 0 | 0 | 0 | 0 | 23 | 0 | 0 | 48 |
| 05:00 PM | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 8 | 0 | 0 | 12 |
| 05:15 PM | 0 | 0 | 1 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 13 |
| 05:30 PM | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 7 |
| 05:45 PM | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 12 |
| Total | 1 | 0 | 1 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 1 | 26 | 0 | 0 | 44 |
| Grand Total | 3 | 0 | 2 | 0 | 35 | 2 | 0 | 0 | 0 | 0 | 1 | 49 | 0 | 0 | 92 |
| Apprch % | 60 | 0 | 40 | 0 | 94.6 | 5.4 | 0 | 0 | 0 | 0 | 2 | 98 | 0 | 0 | |
| Total % | 3.3 | 0 | 2.2 | 0 | 38 | 2.2 | 0 | 0 | 0 | 0 | 1.1 | 53.3 | 0 | 0 | |

Accurate Counts

978-664-2565

File Name : 35860001

Site Code : 35860001

Start Date : 4/9/2019

Page No : 2

N/S Street : Lincoln Street / Driveway

E/W Street: Cambridge Street

City/State : Allston, MA

Weather : Cloudy

| | Lincoln St From North | | | | Cambridge St From East | | | | | Drwy From South | | | | Cambridge St From West | | | | | |
|--|--------------------------|------|-------|------------|---------------------------|------|-------|------|------------|--------------------|------|-------|------------|---------------------------|------|-------|------|------------|------------|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | U-TR | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | U-TR | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:30 PM | | | | | | | | | | | | | | | | | | | |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 5 | 1 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 9 | 15 |
| 04:45 PM | 2 | 0 | 0 | 2 | 0 | 5 | 1 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 12 |
| 05:00 PM | 1 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 8 | 0 | 0 | 9 | 12 |
| 05:15 PM | 0 | 0 | 1 | 1 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 5 | 13 |
| Total Volume | 3 | 0 | 1 | 4 | 0 | 19 | 2 | 0 | 21 | 0 | 0 | 0 | 0 | 1 | 26 | 0 | 0 | 27 | 52 |
| % App. Total | 75 | 0 | 25 | | 0 | 90.5 | 9.5 | 0 | | 0 | 0 | 0 | | 3.7 | 96.3 | 0 | 0 | | |
| PHF | .375 | .000 | .250 | .500 | .000 | .679 | .500 | .000 | .750 | .000 | .000 | .000 | .000 | .250 | .722 | .000 | .000 | .750 | .867 |

Accurate Counts

978-664-2565

File Name : 35860001

Site Code : 35860001

Start Date : 4/9/2019

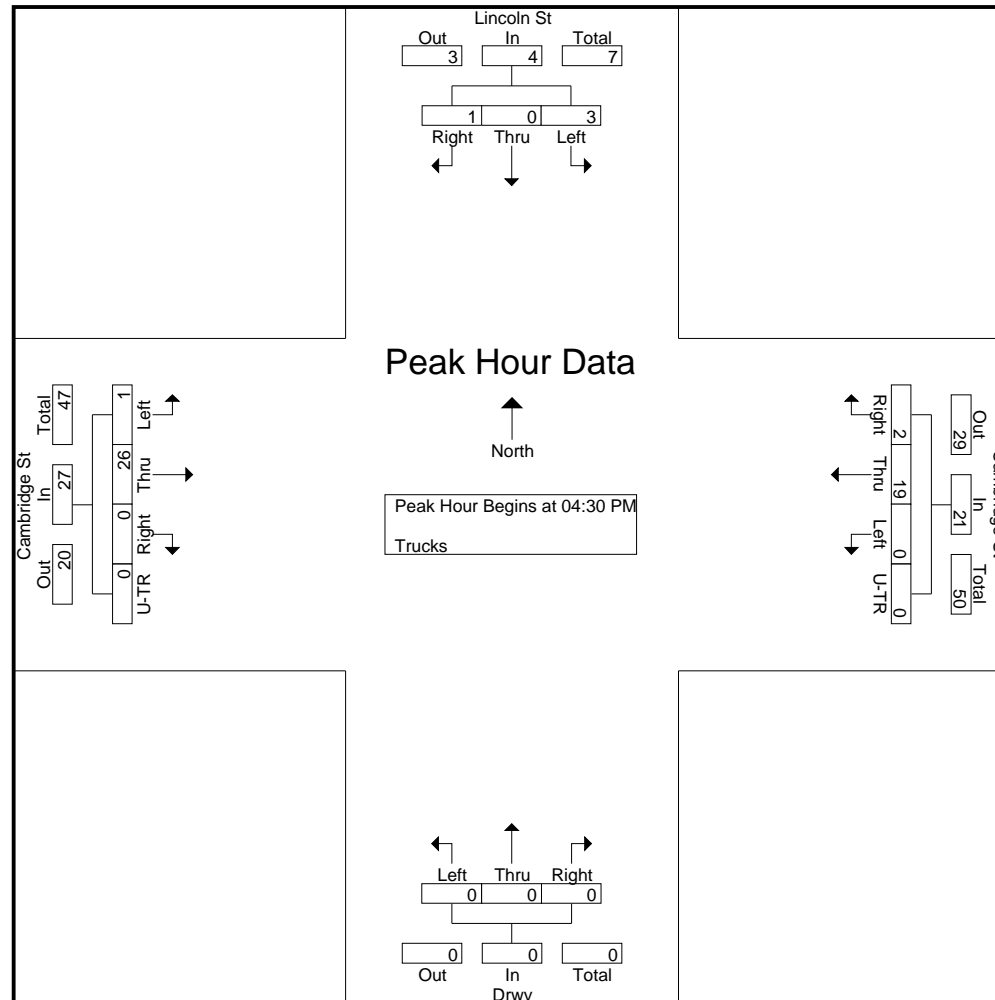
Page No : 3

N/S Street : Lincoln Street / Driveway

E/W Street: Cambridge Street

City/State : Allston, MA

Weather : Cloudy



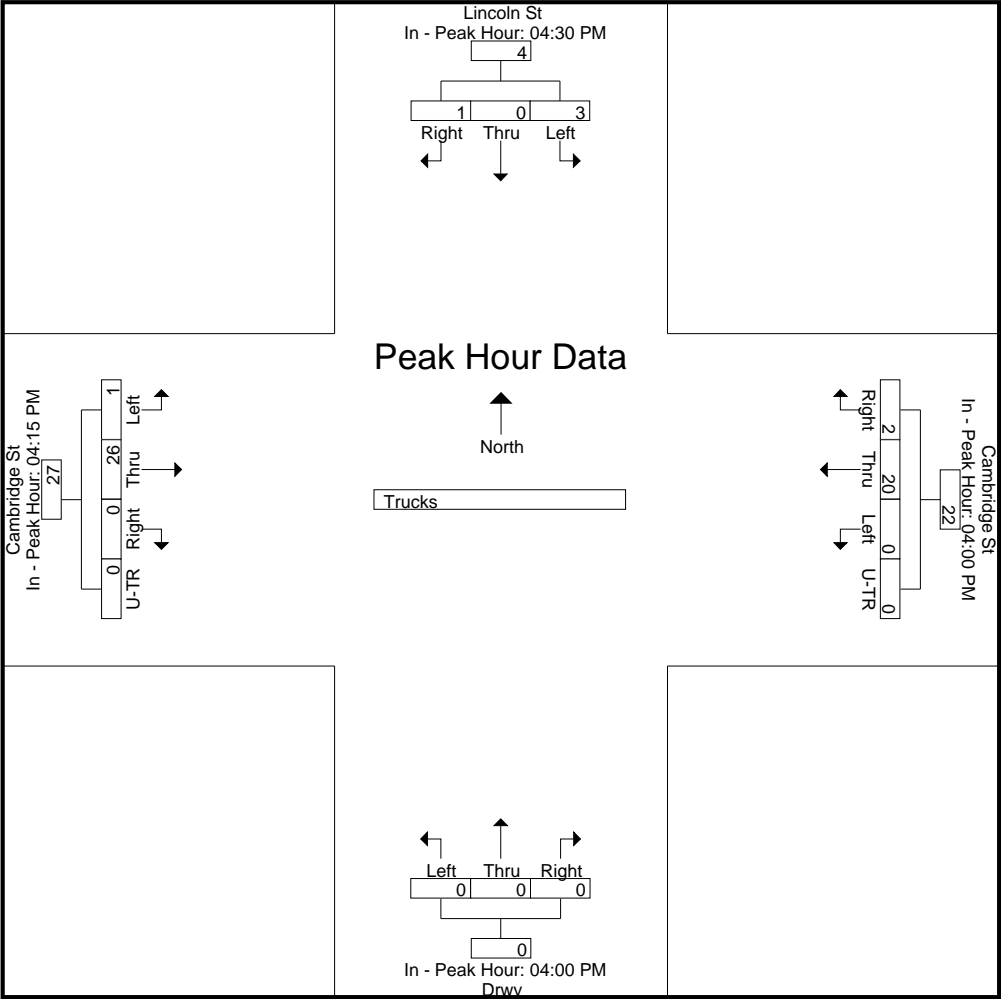
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

| | 04:30 PM | | | | 04:00 PM | | | | | 04:00 PM | | | | 04:15 PM | | | | |
|--------------|----------|---|---|---|----------|----|---|---|----|----------|---|---|---|----------|----|---|---|----|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 5 |
| +15 mins. | 2 | 0 | 0 | 2 | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 9 |
| +30 mins. | 1 | 0 | 0 | 1 | 0 | 5 | 1 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 |
| +45 mins. | 0 | 0 | 1 | 1 | 0 | 5 | 1 | 0 | 6 | 0 | 0 | 0 | 0 | 1 | 8 | 0 | 0 | 9 |
| Total Volume | 3 | 0 | 1 | 4 | 0 | 20 | 2 | 0 | 22 | 0 | 0 | 0 | 0 | 1 | 26 | 0 | 0 | 27 |

Accurate Counts
978-664-2565

| | | | | | | | | | | | | | | | | | | |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| % App. Total | 75 | 0 | 25 | | 0 | 90.9 | 9.1 | 0 | | 0 | 0 | 0 | | 3.7 | 96.3 | 0 | 0 | |
| PHF | .375 | .000 | .250 | .500 | .000 | .833 | .500 | .000 | .917 | .000 | .000 | .000 | .000 | .250 | .722 | .000 | .000 | .750 |



Accurate Counts

978-664-2565

File Name : 35860001

Site Code : 35860001

Start Date : 4/9/2019

Page No : 1

N/S Street : Lincoln Street / Driveway

E/W Street: Cambridge Street

City/State : Allston, MA

Weather : Cloudy

Groups Printed- Bikes Peds

| | Lincoln St From North | | | | Cambridge St From East | | | | Drwy From South | | | | Cambridge St From West | | | | Exclu. Total | Inclu. Total | Int. Total |
|-------------|--------------------------|------|-------|------|---------------------------|------|-------|------|--------------------|------|-------|------|---------------------------|------|-------|------|--------------|--------------|------------|
| Start Time | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | | | |
| 04:00 PM | 0 | 0 | 0 | 5 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 5 | 3 | 8 |
| 04:15 PM | 0 | 0 | 1 | 3 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 5 | 3 | 8 |
| 04:30 PM | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 5 | 1 | 2 | 0 | 0 | 9 | 6 | 15 |
| 04:45 PM | 0 | 0 | 0 | 3 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 3 | 0 | 2 | 0 | 0 | 7 | 4 | 11 |
| Total | 0 | 0 | 1 | 14 | 0 | 7 | 2 | 2 | 0 | 0 | 0 | 10 | 1 | 5 | 0 | 0 | 26 | 16 | 42 |
| 05:00 PM | 0 | 0 | 0 | 13 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 5 | 0 | 1 | 18 | 7 | 25 |
| 05:15 PM | 0 | 0 | 0 | 10 | 0 | 6 | 0 | 1 | 0 | 0 | 1 | 3 | 0 | 3 | 0 | 1 | 15 | 10 | 25 |
| 05:30 PM | 0 | 0 | 0 | 7 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 1 | 10 | 6 | 16 |
| 05:45 PM | 0 | 0 | 0 | 8 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 4 | 0 | 1 | 0 | 2 | 15 | 4 | 19 |
| Total | 0 | 0 | 0 | 38 | 0 | 15 | 0 | 4 | 0 | 0 | 1 | 11 | 0 | 11 | 0 | 5 | 58 | 27 | 85 |
| Grand Total | 0 | 0 | 1 | 52 | 0 | 22 | 2 | 6 | 0 | 0 | 1 | 21 | 1 | 16 | 0 | 5 | 84 | 43 | 127 |
| Apprch % | 0 | 0 | 100 | | 0 | 91.7 | 8.3 | | 0 | 0 | 100 | | 5.9 | 94.1 | 0 | | | | |
| Total % | 0 | 0 | 2.3 | | 0 | 51.2 | 4.7 | | 0 | 0 | 2.3 | | 2.3 | 37.2 | 0 | | 66.1 | 33.9 | |

Accurate Counts

978-664-2565

File Name : 35860001

Site Code : 35860001

Start Date : 4/9/2019

Page No : 2

N/S Street : Lincoln Street / Driveway

E/W Street: Cambridge Street

City/State : Allston, MA

Weather : Cloudy

| | Lincoln St From North | | | | Cambridge St From East | | | | Drwy From South | | | | Cambridge St From West | | | | |
|--|--------------------------|------|-------|------------|---------------------------|------|-------|------------|--------------------|------|-------|------------|---------------------------|------|-------|------------|------------|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:30 PM | | | | | | | | | | | | | | | | | |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 3 | 6 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 4 |
| 05:00 PM | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 5 | 7 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 6 | 0 | 0 | 1 | 1 | 0 | 3 | 0 | 3 | 10 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 12 | 1 | 13 | 0 | 0 | 1 | 1 | 1 | 12 | 0 | 13 | 27 |
| % App. Total | 0 | 0 | 0 | | 0 | 92.3 | 7.7 | | 0 | 0 | 100 | | 7.7 | 92.3 | 0 | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .500 | .250 | .542 | .000 | .000 | .250 | .250 | .250 | .600 | .000 | .650 | .675 |

Accurate Counts

978-664-2565

File Name : 35860001

Site Code : 35860001

Start Date : 4/9/2019

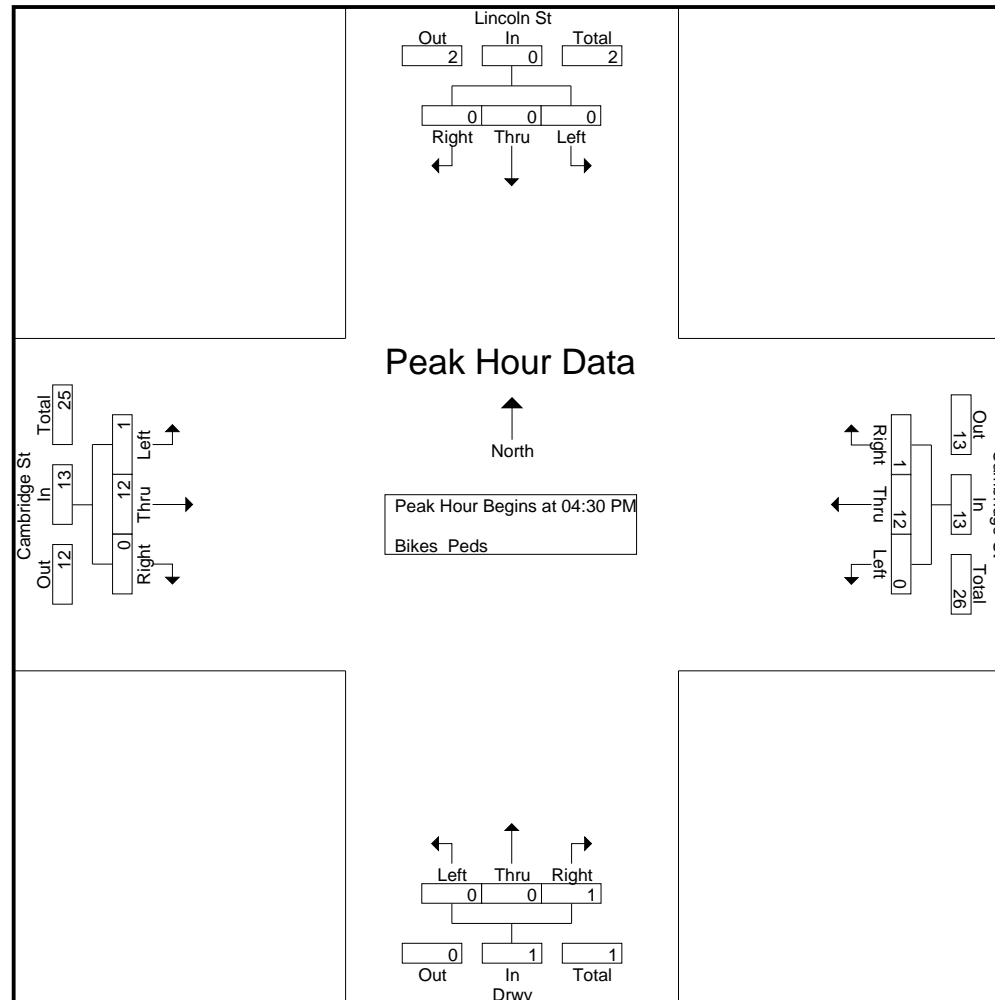
Page No : 3

N/S Street : Lincoln Street / Driveway

E/W Street: Cambridge Street

City/State : Allston, MA

Weather : Cloudy



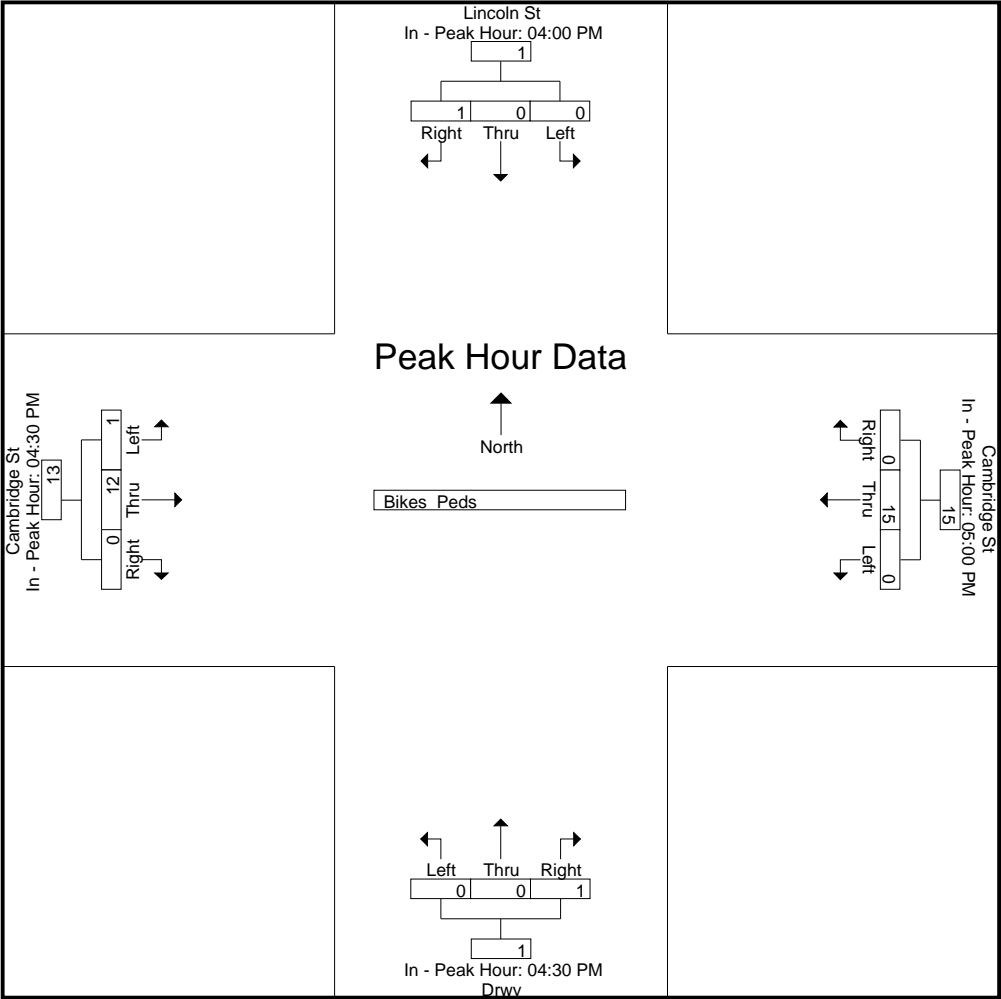
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

| | 04:00 PM | | | | 05:00 PM | | | | 04:30 PM | | | | 04:30 PM | | | |
|--------------|----------|---|-----|---|----------|-----|---|----|----------|---|-----|---|----------|------|---|----|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 3 |
| +15 mins. | 0 | 0 | 1 | 1 | 0 | 6 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 5 |
| +45 mins. | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 1 | 1 | 0 | 3 | 0 | 3 |
| Total Volume | 0 | 0 | 1 | 1 | 0 | 15 | 0 | 15 | 0 | 0 | 1 | 1 | 1 | 12 | 0 | 13 |
| % App. Total | 0 | 0 | 100 | | 0 | 100 | 0 | | 0 | 0 | 100 | | 7.7 | 92.3 | 0 | |

Accurate Counts
978-664-2565

| | | | | | | | | | | | | | | | | |
|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| PHF | .000 | .000 | .250 | .250 | .000 | .625 | .000 | .625 | .000 | .000 | .250 | .250 | .250 | .600 | .000 | .650 |
|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|



Accurate Counts

978-664-2565

File Name : 35860002

Site Code : 35860002

Start Date : 4/9/2019

Page No : 1

N/S Street : Lincoln Street
E/W Street: Empire St / Lincoln St
City/State : Allston, MA
Weather : Cloudy

Groups Printed- Cars - Trucks

| Start Time | Empire St From East | | Lincoln St From South | | Lincoln St From West | | Int. Total |
|-------------|------------------------|------|--------------------------|-------|-------------------------|-------|------------|
| | Left | Thru | Left | Right | Thru | Right | |
| 07:00 AM | 9 | 22 | 33 | 0 | 0 | 35 | 99 |
| 07:15 AM | 11 | 18 | 46 | 0 | 0 | 52 | 127 |
| 07:30 AM | 5 | 32 | 65 | 0 | 0 | 65 | 167 |
| 07:45 AM | 8 | 18 | 56 | 0 | 0 | 52 | 134 |
| Total | 33 | 90 | 200 | 0 | 0 | 204 | 527 |
| 08:00 AM | 6 | 32 | 54 | 0 | 0 | 63 | 155 |
| 08:15 AM | 6 | 23 | 58 | 0 | 0 | 64 | 151 |
| 08:30 AM | 6 | 35 | 66 | 0 | 0 | 56 | 163 |
| 08:45 AM | 8 | 34 | 66 | 0 | 0 | 48 | 156 |
| Total | 26 | 124 | 244 | 0 | 0 | 231 | 625 |
| Grand Total | 59 | 214 | 444 | 0 | 0 | 435 | 1152 |
| Apprch % | 21.6 | 78.4 | 100 | 0 | 0 | 100 | |
| Total % | 5.1 | 18.6 | 38.5 | 0 | 0 | 37.8 | |
| Cars | 56 | 211 | 425 | 0 | 0 | 429 | 1121 |
| % Cars | 94.9 | 98.6 | 95.7 | 0 | 0 | 98.6 | 97.3 |
| Trucks | 3 | 3 | 19 | 0 | 0 | 6 | 31 |
| % Trucks | 5.1 | 1.4 | 4.3 | 0 | 0 | 1.4 | 2.7 |

Accurate Counts

978-664-2565

File Name : 35860002

Site Code : 35860002

Start Date : 4/9/2019

Page No : 2

N/S Street : Lincoln Street

E/W Street: Empire St / Lincoln St

City/State : Allston, MA

Weather : Cloudy

| | Empire St From East | | | Lincoln St From South | | | Lincoln St From West | | | |
|--|------------------------|-----------|------------|--------------------------|-------|------------|-------------------------|-----------|------------|------------|
| Start Time | Left | Thru | App. Total | Left | Right | App. Total | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 08:00 AM | | | | | | | | | | |
| 08:00 AM | 6 | 32 | 38 | 54 | 0 | 54 | 0 | 63 | 63 | 155 |
| 08:15 AM | 6 | 23 | 29 | 58 | 0 | 58 | 0 | 64 | 64 | 151 |
| 08:30 AM | 6 | 35 | 41 | 66 | 0 | 66 | 0 | 56 | 56 | 163 |
| 08:45 AM | 8 | 34 | 42 | 66 | 0 | 66 | 0 | 48 | 48 | 156 |
| Total Volume | 26 | 124 | 150 | 244 | 0 | 244 | 0 | 231 | 231 | 625 |
| % App. Total | 17.3 | 82.7 | | 100 | 0 | | 0 | 100 | | |
| PHF | .813 | .886 | .893 | .924 | .000 | .924 | .000 | .902 | .902 | .959 |
| Cars | 25 | 123 | 148 | 236 | 0 | 236 | 0 | 228 | 228 | 612 |
| % Cars | 96.2 | 99.2 | 98.7 | 96.7 | 0 | 96.7 | 0 | 98.7 | 98.7 | 97.9 |
| Trucks | 1 | 1 | 2 | 8 | 0 | 8 | 0 | 3 | 3 | 13 |
| % Trucks | 3.8 | 0.8 | 1.3 | 3.3 | 0 | 3.3 | 0 | 1.3 | 1.3 | 2.1 |

Accurate Counts

978-664-2565

File Name : 35860002

Site Code : 35860002

Start Date : 4/9/2019

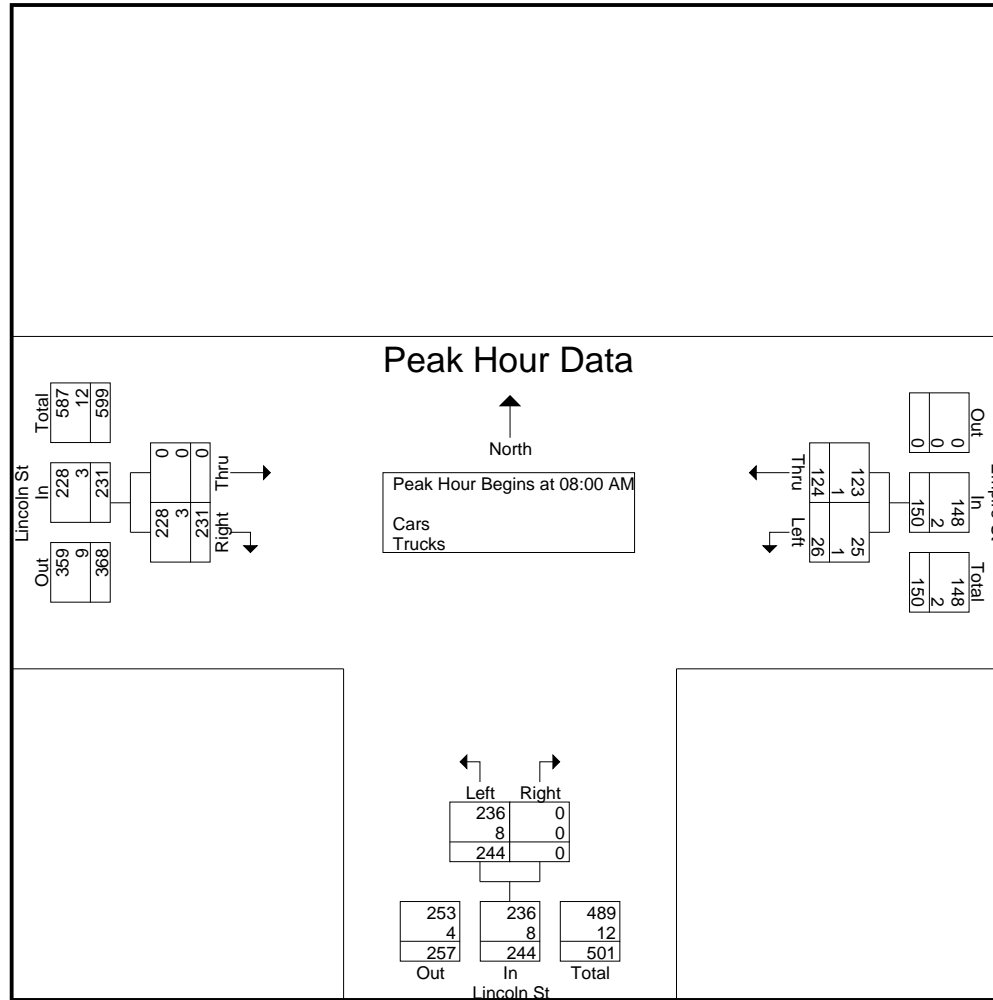
Page No : 3

N/S Street : Lincoln Street

E/W Street: Empire St / Lincoln St

City/State : Allston, MA

Weather : Cloudy



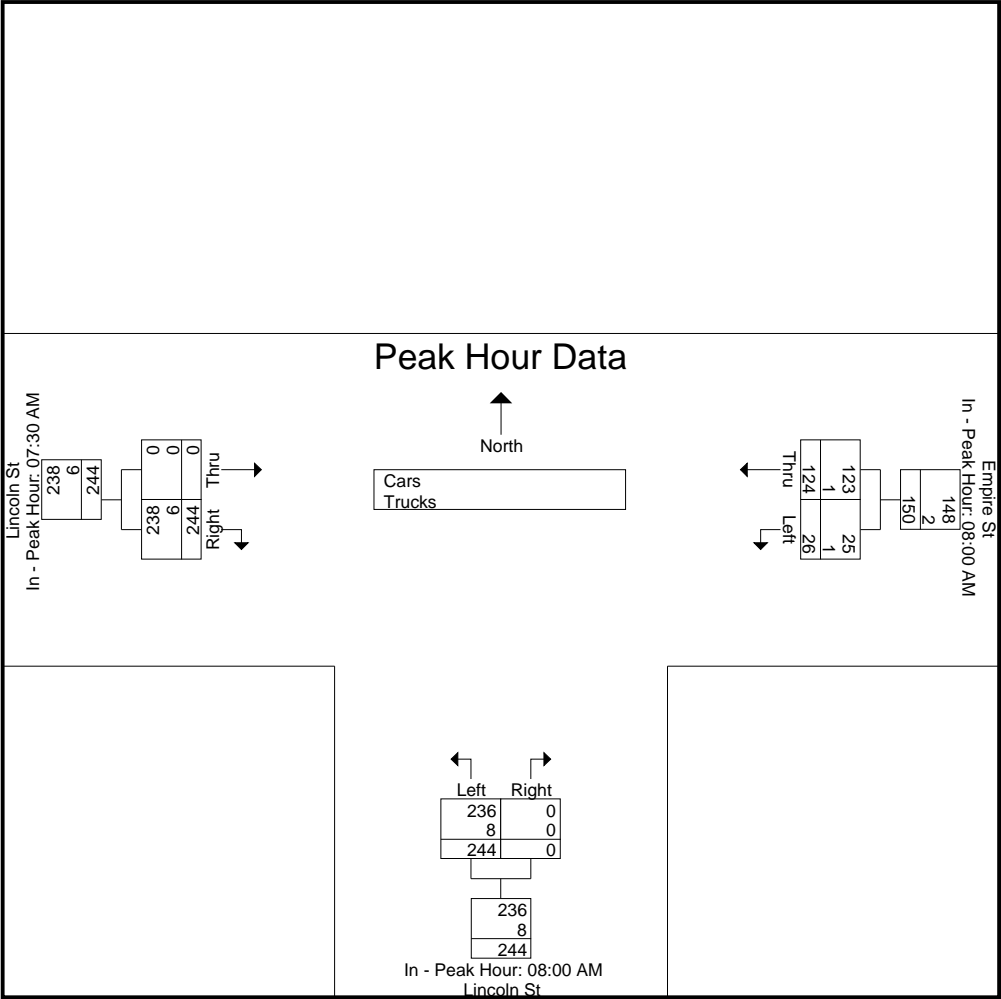
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

| | 08:00 AM | | | 08:00 AM | | | 07:30 AM | | |
|--------------|----------|-----------|-----------|-----------|---|-----------|----------|-----------|-----------|
| +0 mins. | 6 | 32 | 38 | 54 | 0 | 54 | 0 | 65 | 65 |
| +15 mins. | 6 | 23 | 29 | 58 | 0 | 58 | 0 | 52 | 52 |
| +30 mins. | 6 | 35 | 41 | 66 | 0 | 66 | 0 | 63 | 63 |
| +45 mins. | 8 | 34 | 42 | 66 | 0 | 66 | 0 | 64 | 64 |
| Total Volume | 26 | 124 | 150 | 244 | 0 | 244 | 0 | 244 | 244 |
| % App. Total | 17.3 | 82.7 | | 100 | 0 | | 0 | 100 | |

Accurate Counts
978-664-2565

| PHF | .813 | .886 | .893 | .924 | .000 | .924 | .000 | .938 | .938 |
|----------|------|------|------|------|------|------|------|------|------|
| Cars | 25 | 123 | 148 | 236 | 0 | 236 | 0 | 238 | 238 |
| % Cars | 96.2 | 99.2 | 98.7 | 96.7 | 0 | 96.7 | 0 | 97.5 | 97.5 |
| Trucks | 1 | 1 | 2 | 8 | 0 | 8 | 0 | 6 | 6 |
| % Trucks | 3.8 | 0.8 | 1.3 | 3.3 | 0 | 3.3 | 0 | 2.5 | 2.5 |



Accurate Counts

978-664-2565

File Name : 35860002

Site Code : 35860002

Start Date : 4/9/2019

Page No : 5

N/S Street : Lincoln Street

E/W Street: Empire St / Lincoln St

City/State : Allston, MA

Weather : Cloudy

Groups Printed- Cars

| Start Time | Empire St From East | | Lincoln St From South | | Lincoln St From West | | Int. Total |
|-------------|------------------------|------|--------------------------|-------|-------------------------|-------|------------|
| | Left | Thru | Left | Right | Thru | Right | |
| 07:00 AM | 9 | 22 | 33 | 0 | 0 | 35 | 99 |
| 07:15 AM | 10 | 17 | 43 | 0 | 0 | 52 | 122 |
| 07:30 AM | 4 | 31 | 63 | 0 | 0 | 63 | 161 |
| 07:45 AM | 8 | 18 | 50 | 0 | 0 | 51 | 127 |
| Total | 31 | 88 | 189 | 0 | 0 | 201 | 509 |
| 08:00 AM | 5 | 32 | 51 | 0 | 0 | 61 | 149 |
| 08:15 AM | 6 | 22 | 53 | 0 | 0 | 63 | 144 |
| 08:30 AM | 6 | 35 | 66 | 0 | 0 | 56 | 163 |
| 08:45 AM | 8 | 34 | 66 | 0 | 0 | 48 | 156 |
| Total | 25 | 123 | 236 | 0 | 0 | 228 | 612 |
| Grand Total | 56 | 211 | 425 | 0 | 0 | 429 | 1121 |
| Apprch % | 21 | 79 | 100 | 0 | 0 | 100 | |
| Total % | 5 | 18.8 | 37.9 | 0 | 0 | 38.3 | |

Accurate Counts

978-664-2565

File Name : 35860002

Site Code : 35860002

Start Date : 4/9/2019

Page No : 6

N/S Street : Lincoln Street

E/W Street: Empire St / Lincoln St

City/State : Allston, MA

Weather : Cloudy

| | Empire St From East | | | Lincoln St From South | | | Lincoln St From West | | | |
|--|------------------------|-----------|------------|--------------------------|-------|------------|-------------------------|-----------|------------|------------|
| Start Time | Left | Thru | App. Total | Left | Right | App. Total | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 08:00 AM | | | | | | | | | | |
| 08:00 AM | 5 | 32 | 37 | 51 | 0 | 51 | 0 | 61 | 61 | 149 |
| 08:15 AM | 6 | 22 | 28 | 53 | 0 | 53 | 0 | 63 | 63 | 144 |
| 08:30 AM | 6 | 35 | 41 | 66 | 0 | 66 | 0 | 56 | 56 | 163 |
| 08:45 AM | 8 | 34 | 42 | 66 | 0 | 66 | 0 | 48 | 48 | 156 |
| Total Volume | 25 | 123 | 148 | 236 | 0 | 236 | 0 | 228 | 228 | 612 |
| % App. Total | 16.9 | 83.1 | | 100 | 0 | | 0 | 100 | | |
| PHF | .781 | .879 | .881 | .894 | .000 | .894 | .000 | .905 | .905 | .939 |

Accurate Counts

978-664-2565

File Name : 35860002

Site Code : 35860002

Start Date : 4/9/2019

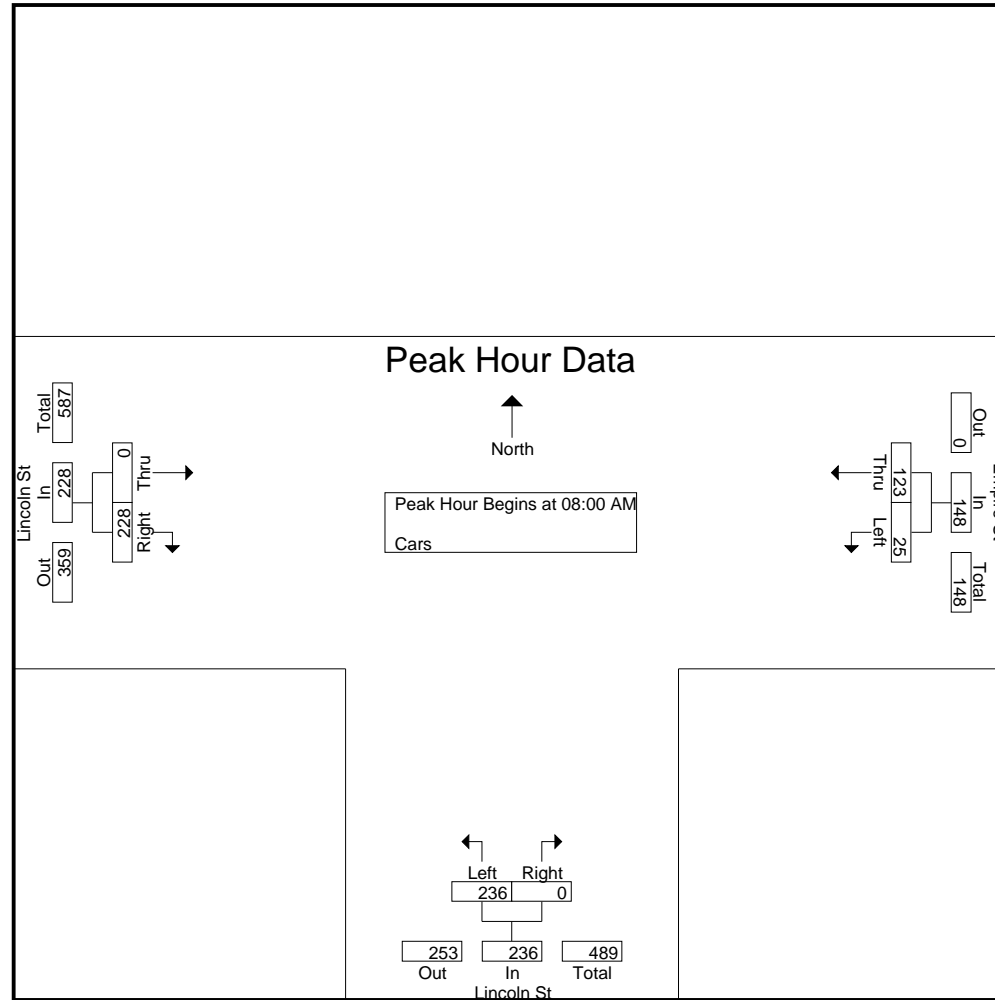
Page No : 7

N/S Street : Lincoln Street

E/W Street: Empire St / Lincoln St

City/State : Allston, MA

Weather : Cloudy



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

| | 08:00 AM | | | 08:00 AM | | | 07:30 AM | | |
|--------------|----------|-----------|-----------|-----------|---|-----------|----------|-----------|-----------|
| +0 mins. | 5 | 32 | 37 | 51 | 0 | 51 | 0 | 63 | 63 |
| +15 mins. | 6 | 22 | 28 | 53 | 0 | 53 | 0 | 51 | 51 |
| +30 mins. | 6 | 35 | 41 | 66 | 0 | 66 | 0 | 61 | 61 |
| +45 mins. | 8 | 34 | 42 | 66 | 0 | 66 | 0 | 63 | 63 |
| Total Volume | 25 | 123 | 148 | 236 | 0 | 236 | 0 | 238 | 238 |
| % App. Total | 16.9 | 83.1 | | 100 | 0 | | 0 | 100 | |

Accurate Counts
978-664-2565

PHF

.781

.879

.881

.894

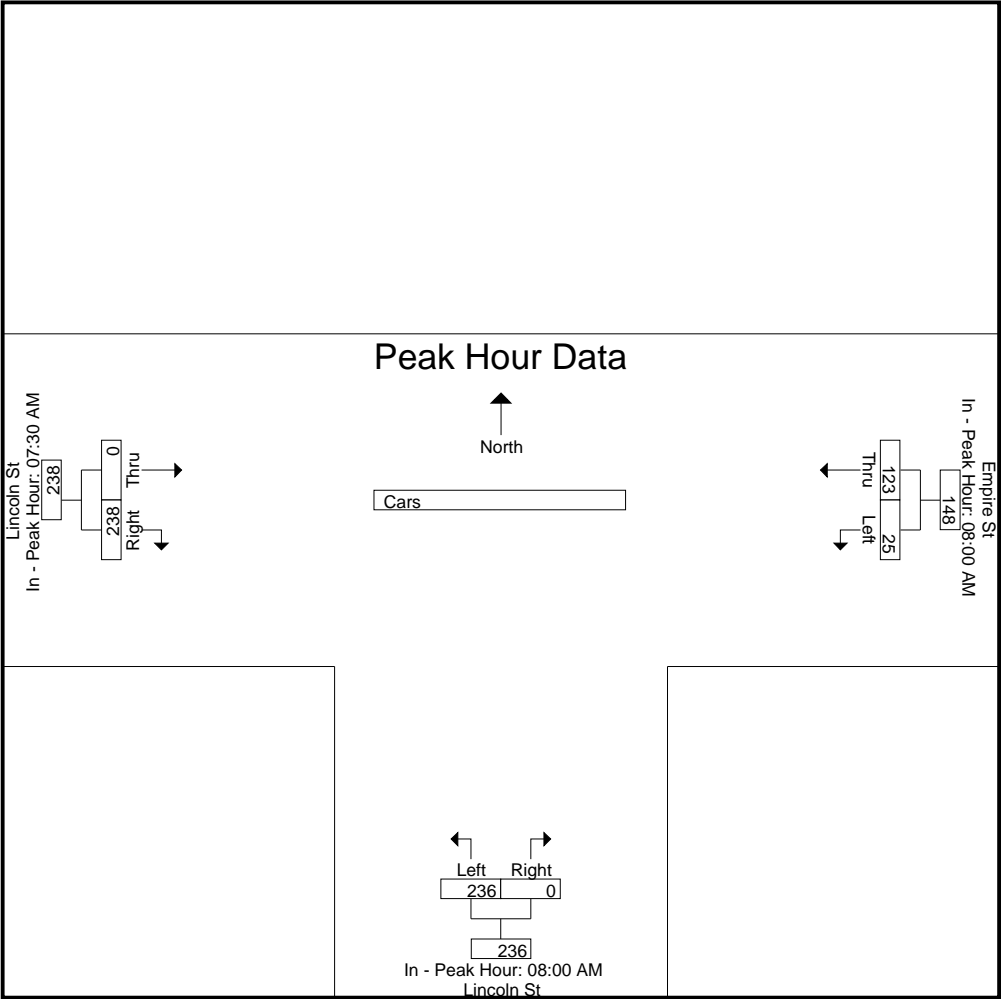
.000

.894

.000

.944

.944



Accurate Counts

978-664-2565

File Name : 35860002

Site Code : 35860002

Start Date : 4/9/2019

Page No : 9

N/S Street : Lincoln Street

E/W Street: Empire St / Lincoln St

City/State : Allston, MA

Weather : Cloudy

Groups Printed- Trucks

| | Empire St From East | | Lincoln St From South | | Lincoln St From West | | |
|-------------|------------------------|------|--------------------------|-------|-------------------------|-------|------------|
| Start Time | Left | Thru | Left | Right | Thru | Right | Int. Total |
| 07:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:15 AM | 1 | 1 | 3 | 0 | 0 | 0 | 5 |
| 07:30 AM | 1 | 1 | 2 | 0 | 0 | 2 | 6 |
| 07:45 AM | 0 | 0 | 6 | 0 | 0 | 1 | 7 |
| Total | 2 | 2 | 11 | 0 | 0 | 3 | 18 |
| 08:00 AM | 1 | 0 | 3 | 0 | 0 | 2 | 6 |
| 08:15 AM | 0 | 1 | 5 | 0 | 0 | 1 | 7 |
| 08:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 1 | 1 | 8 | 0 | 0 | 3 | 13 |
| Grand Total | 3 | 3 | 19 | 0 | 0 | 6 | 31 |
| Apprch % | 50 | 50 | 100 | 0 | 0 | 100 | |
| Total % | 9.7 | 9.7 | 61.3 | 0 | 0 | 19.4 | |

Accurate Counts

978-664-2565

File Name : 35860002

Site Code : 35860002

Start Date : 4/9/2019

Page No : 10

N/S Street : Lincoln Street

E/W Street: Empire St / Lincoln St

City/State : Allston, MA

Weather : Cloudy

| | Empire St From East | | | Lincoln St From South | | | Lincoln St From West | | | |
|--|------------------------|------|------------|--------------------------|-------|------------|-------------------------|-------|------------|------------|
| Start Time | Left | Thru | App. Total | Left | Right | App. Total | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | |
| 07:30 AM | 1 | 1 | 2 | 2 | 0 | 2 | 0 | 2 | 2 | 6 |
| 07:45 AM | 0 | 0 | 0 | 6 | 0 | 6 | 0 | 1 | 1 | 7 |
| 08:00 AM | 1 | 0 | 1 | 3 | 0 | 3 | 0 | 2 | 2 | 6 |
| 08:15 AM | 0 | 1 | 1 | 5 | 0 | 5 | 0 | 1 | 1 | 7 |
| Total Volume | 2 | 2 | 4 | 16 | 0 | 16 | 0 | 6 | 6 | 26 |
| % App. Total | 50 | 50 | | 100 | 0 | | 0 | 100 | | |
| PHF | .500 | .500 | .500 | .667 | .000 | .667 | .000 | .750 | .750 | .929 |

Accurate Counts

978-664-2565

File Name : 35860002

Site Code : 35860002

Start Date : 4/9/2019

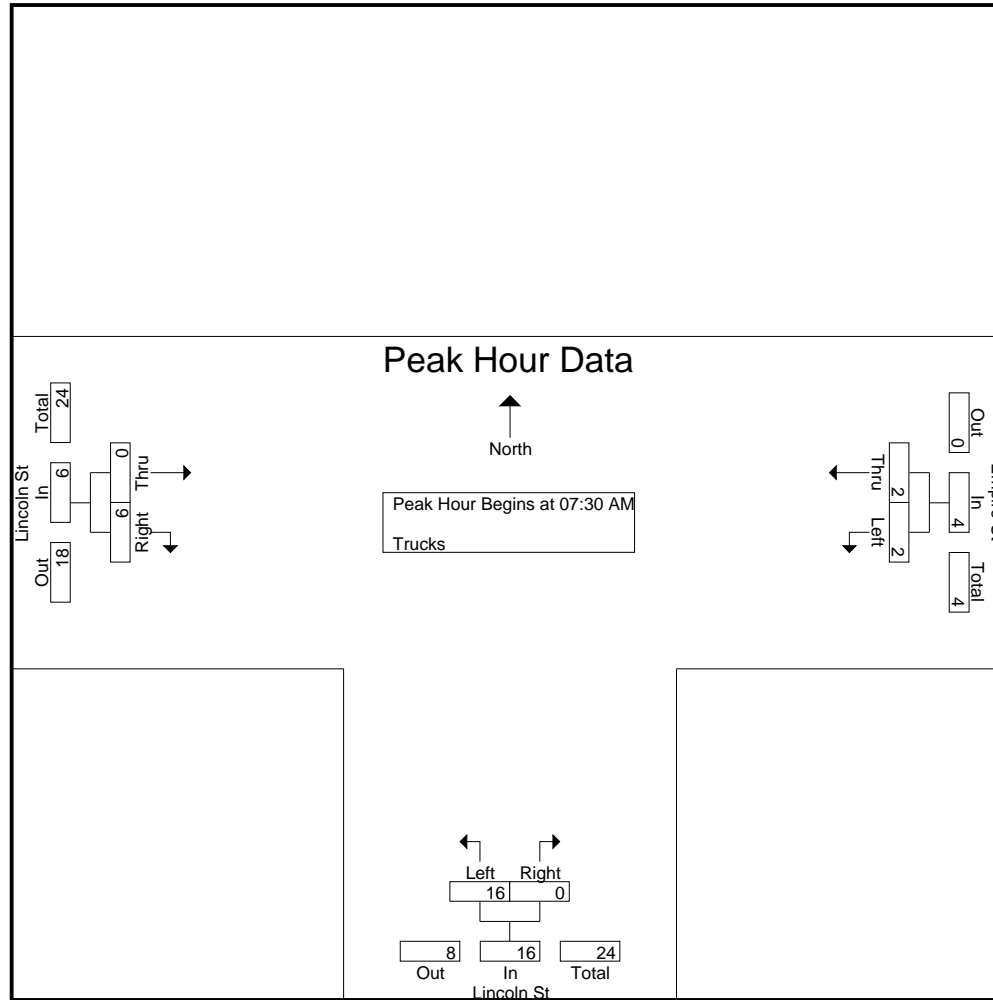
Page No : 11

N/S Street : Lincoln Street

E/W Street: Empire St / Lincoln St

City/State : Allston, MA

Weather : Cloudy



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

| | 07:15 AM | | | 07:30 AM | | | 07:30 AM | | |
|--------------|----------|----|---|----------|---|----|----------|-----|---|
| +0 mins. | 1 | 1 | 2 | 2 | 0 | 2 | 0 | 2 | 2 |
| +15 mins. | 1 | 1 | 2 | 6 | 0 | 6 | 0 | 1 | 1 |
| +30 mins. | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 2 | 2 |
| +45 mins. | 1 | 0 | 1 | 5 | 0 | 5 | 0 | 1 | 1 |
| Total Volume | 3 | 2 | 5 | 16 | 0 | 16 | 0 | 6 | 6 |
| % App. Total | 60 | 40 | | 100 | 0 | | 0 | 100 | |

Accurate Counts
978-664-2565

PHF

.750

.500

.625

.667

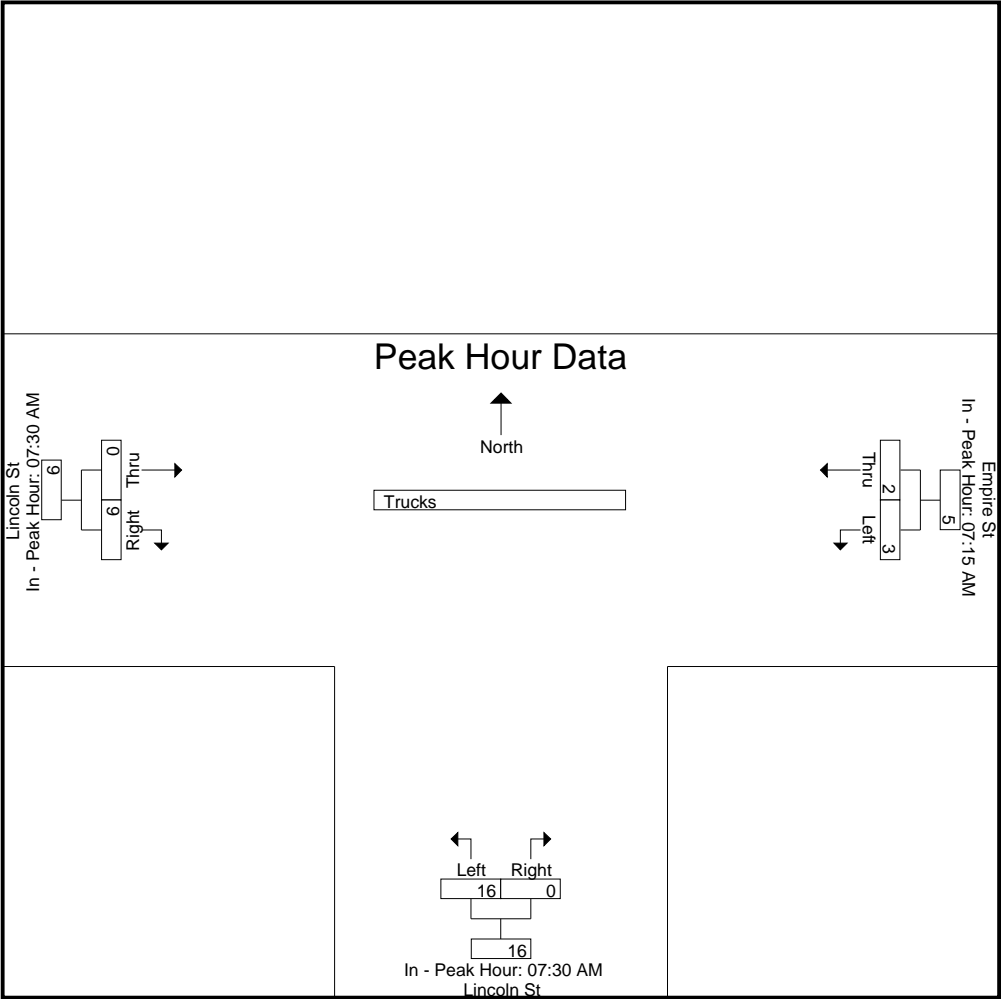
.000

.667

.000

.750

.750



Accurate Counts

978-664-2565

N/S Street : Lincoln Street
E/W Street: Empire St / Lincoln St
City/State : Allston, MA
Weather : Cloudy

File Name : 35860002
Site Code : 35860002
Start Date : 4/9/2019
Page No : 13

Groups Printed- Bikes Peds

| | Empire St From East | | | Lincoln St From South | | | Lincoln St From West | | | | | |
|-------------|------------------------|------|------|--------------------------|-------|------|-------------------------|-------|------|--------------|--------------|------------|
| Start Time | Left | Thru | Peds | Left | Right | Peds | Thru | Right | Peds | Exclu. Total | Inclu. Total | Int. Total |
| 07:00 AM | 0 | 0 | 1 | 0 | 0 | 4 | 0 | 0 | 0 | 5 | 0 | 5 |
| 07:15 AM | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 3 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 |
| 07:45 AM | 1 | 0 | 1 | 0 | 0 | 3 | 0 | 1 | 0 | 4 | 2 | 6 |
| Total | 1 | 0 | 4 | 0 | 0 | 8 | 0 | 1 | 1 | 13 | 2 | 15 |
| 08:00 AM | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 2 | 3 |
| 08:15 AM | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 2 | 2 | 4 |
| 08:30 AM | 1 | 0 | 1 | 1 | 0 | 5 | 0 | 0 | 0 | 6 | 2 | 8 |
| 08:45 AM | 1 | 0 | 1 | 2 | 0 | 2 | 0 | 0 | 0 | 3 | 3 | 6 |
| Total | 2 | 1 | 2 | 4 | 0 | 9 | 0 | 2 | 1 | 12 | 9 | 21 |
| Grand Total | 3 | 1 | 6 | 4 | 0 | 17 | 0 | 3 | 2 | 25 | 11 | 36 |
| Apprch % | 75 | 25 | | 100 | 0 | | 0 | 100 | | | | |
| Total % | 27.3 | 9.1 | | 36.4 | 0 | | 0 | 27.3 | | 69.4 | 30.6 | |

Accurate Counts

978-664-2565

File Name : 35860002

Site Code : 35860002

Start Date : 4/9/2019

Page No : 14

N/S Street : Lincoln Street

E/W Street: Empire St / Lincoln St

City/State : Allston, MA

Weather : Cloudy

| | Empire St From East | | | Lincoln St From South | | | Lincoln St From West | | | |
|--|------------------------|------|------------|--------------------------|-------|------------|-------------------------|-------|------------|------------|
| Start Time | Left | Thru | App. Total | Left | Right | App. Total | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 08:00 AM | | | | | | | | | | |
| 08:00 AM | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 2 |
| 08:15 AM | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 2 |
| 08:30 AM | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 2 |
| 08:45 AM | 1 | 0 | 1 | 2 | 0 | 2 | 0 | 0 | 0 | 3 |
| Total Volume | 2 | 1 | 3 | 4 | 0 | 4 | 0 | 2 | 2 | 9 |
| % App. Total | 66.7 | 33.3 | | 100 | 0 | | 0 | 100 | | |
| PHF | .500 | .250 | .750 | .500 | .000 | .500 | .000 | .500 | .500 | .750 |

Accurate Counts

978-664-2565

File Name : 35860002

Site Code : 35860002

Start Date : 4/9/2019

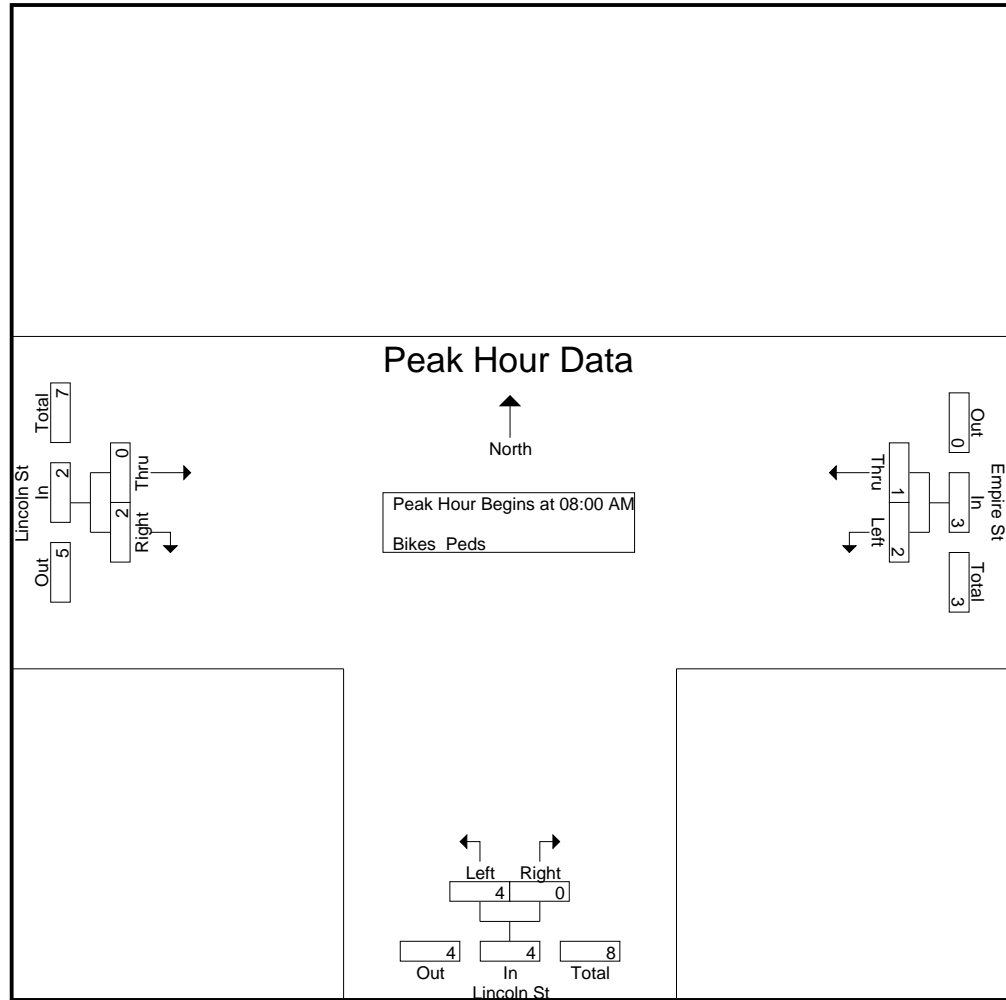
Page No : 15

N/S Street : Lincoln Street

E/W Street: Empire St / Lincoln St

City/State : Allston, MA

Weather : Cloudy



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

| | 07:45 AM | | | 08:00 AM | | | 07:30 AM | | |
|--------------|----------|------|---|----------|---|---|----------|-----|---|
| +0 mins. | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| +30 mins. | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 |
| +45 mins. | 1 | 0 | 1 | 2 | 0 | 2 | 0 | 1 | 1 |
| Total Volume | 2 | 1 | 3 | 4 | 0 | 4 | 0 | 3 | 3 |
| % App. Total | 66.7 | 33.3 | | 100 | 0 | | 0 | 100 | |

Accurate Counts
978-664-2565

PHF

.500

.250

.750

.500

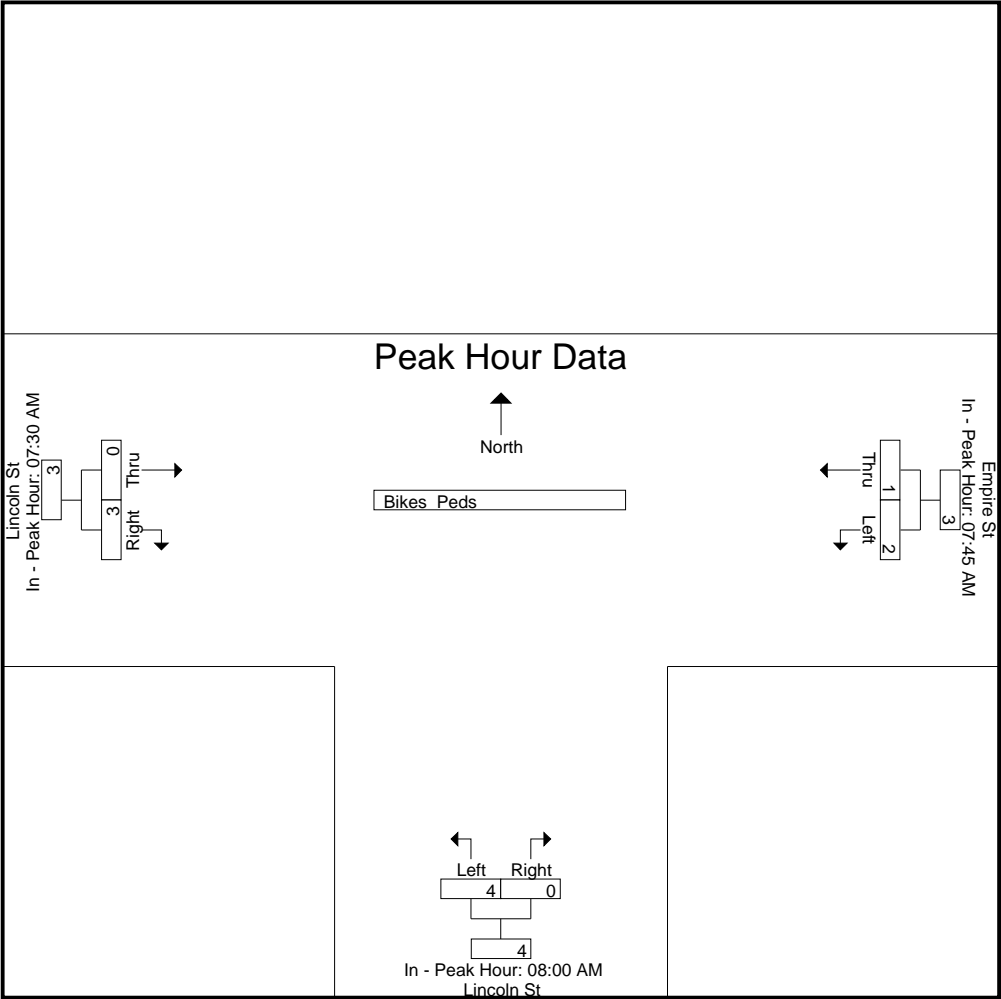
.000

.500

.000

.750

.750



Accurate Counts

978-664-2565

File Name : 35860002

Site Code : 35860002

Start Date : 4/9/2019

Page No : 1

N/S Street : Lincoln Street
E/W Street: Empire St / Lincoln St
City/State : Allston, MA
Weather : Cloudy

Groups Printed- Cars - Trucks

| Start Time | Empire St From East | | Lincoln St From South | | Lincoln St From West | | Int. Total |
|-------------|------------------------|------|--------------------------|-------|-------------------------|-------|------------|
| | Left | Thru | Left | Right | Thru | Right | |
| 04:00 PM | 5 | 12 | 60 | 0 | 1 | 52 | 130 |
| 04:15 PM | 8 | 33 | 73 | 0 | 0 | 35 | 149 |
| 04:30 PM | 8 | 24 | 73 | 0 | 0 | 45 | 150 |
| 04:45 PM | 8 | 39 | 68 | 0 | 0 | 41 | 156 |
| Total | 29 | 108 | 274 | 0 | 1 | 173 | 585 |
| 05:00 PM | 3 | 29 | 58 | 0 | 0 | 64 | 154 |
| 05:15 PM | 10 | 52 | 91 | 0 | 0 | 43 | 196 |
| 05:30 PM | 3 | 35 | 90 | 0 | 0 | 46 | 174 |
| 05:45 PM | 5 | 53 | 95 | 0 | 0 | 33 | 186 |
| Total | 21 | 169 | 334 | 0 | 0 | 186 | 710 |
| Grand Total | 50 | 277 | 608 | 0 | 1 | 359 | 1295 |
| Apprch % | 15.3 | 84.7 | 100 | 0 | 0.3 | 99.7 | |
| Total % | 3.9 | 21.4 | 46.9 | 0 | 0.1 | 27.7 | |
| Cars | 50 | 276 | 601 | 0 | 1 | 354 | 1282 |
| % Cars | 100 | 99.6 | 98.8 | 0 | 100 | 98.6 | 99 |
| Trucks | 0 | 1 | 7 | 0 | 0 | 5 | 13 |
| % Trucks | 0 | 0.4 | 1.2 | 0 | 0 | 1.4 | 1 |

Accurate Counts

978-664-2565

File Name : 35860002

Site Code : 35860002

Start Date : 4/9/2019

Page No : 2

N/S Street : Lincoln Street

E/W Street: Empire St / Lincoln St

City/State : Allston, MA

Weather : Cloudy

| | Empire St From East | | | Lincoln St From South | | | Lincoln St From West | | | |
|------------|------------------------|------|------------|--------------------------|-------|------------|-------------------------|-------|------------|------------|
| Start Time | Left | Thru | App. Total | Left | Right | App. Total | Thru | Right | App. Total | Int. Total |

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 05:00 PM

| | | | | | | | | | | |
|--------------|-----------|-----------|-----------|-----------|------|-----------|------|-----------|-----------|------------|
| 05:00 PM | 3 | 29 | 32 | 58 | 0 | 58 | 0 | 64 | 64 | 154 |
| 05:15 PM | 10 | 52 | 62 | 91 | 0 | 91 | 0 | 43 | 43 | 196 |
| 05:30 PM | 3 | 35 | 38 | 90 | 0 | 90 | 0 | 46 | 46 | 174 |
| 05:45 PM | 5 | 53 | 58 | 95 | 0 | 95 | 0 | 33 | 33 | 186 |
| Total Volume | 21 | 169 | 190 | 334 | 0 | 334 | 0 | 186 | 186 | 710 |
| % App. Total | 11.1 | 88.9 | | 100 | 0 | | 0 | 100 | | |
| PHF | .525 | .797 | .766 | .879 | .000 | .879 | .000 | .727 | .727 | .906 |
| Cars | 21 | 169 | 190 | 330 | 0 | 330 | 0 | 182 | 182 | 702 |
| % Cars | 100 | 100 | 100 | 98.8 | 0 | 98.8 | 0 | 97.8 | 97.8 | 98.9 |
| Trucks | 0 | 0 | 0 | 4 | 0 | 4 | 0 | 4 | 4 | 8 |
| % Trucks | 0 | 0 | 0 | 1.2 | 0 | 1.2 | 0 | 2.2 | 2.2 | 1.1 |

Accurate Counts

978-664-2565

File Name : 35860002

Site Code : 35860002

Start Date : 4/9/2019

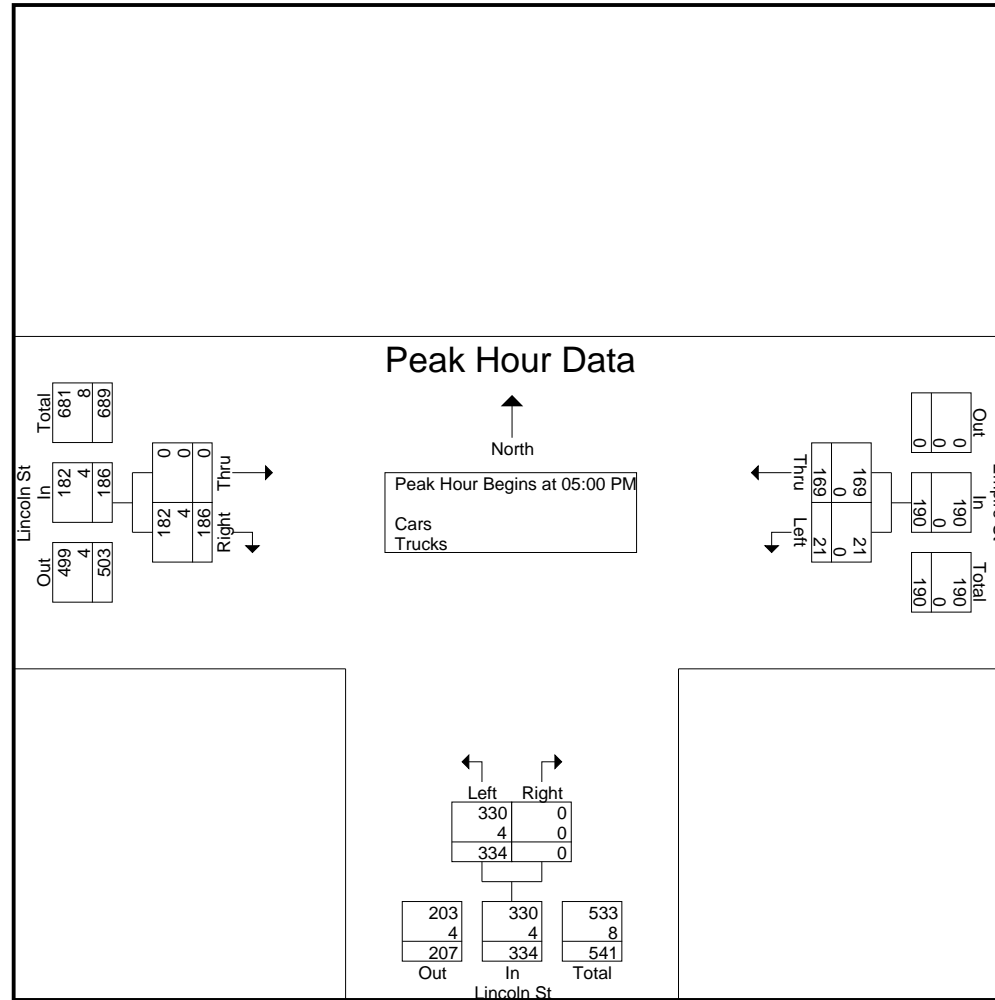
Page No : 3

N/S Street : Lincoln Street

E/W Street: Empire St / Lincoln St

City/State : Allston, MA

Weather : Cloudy



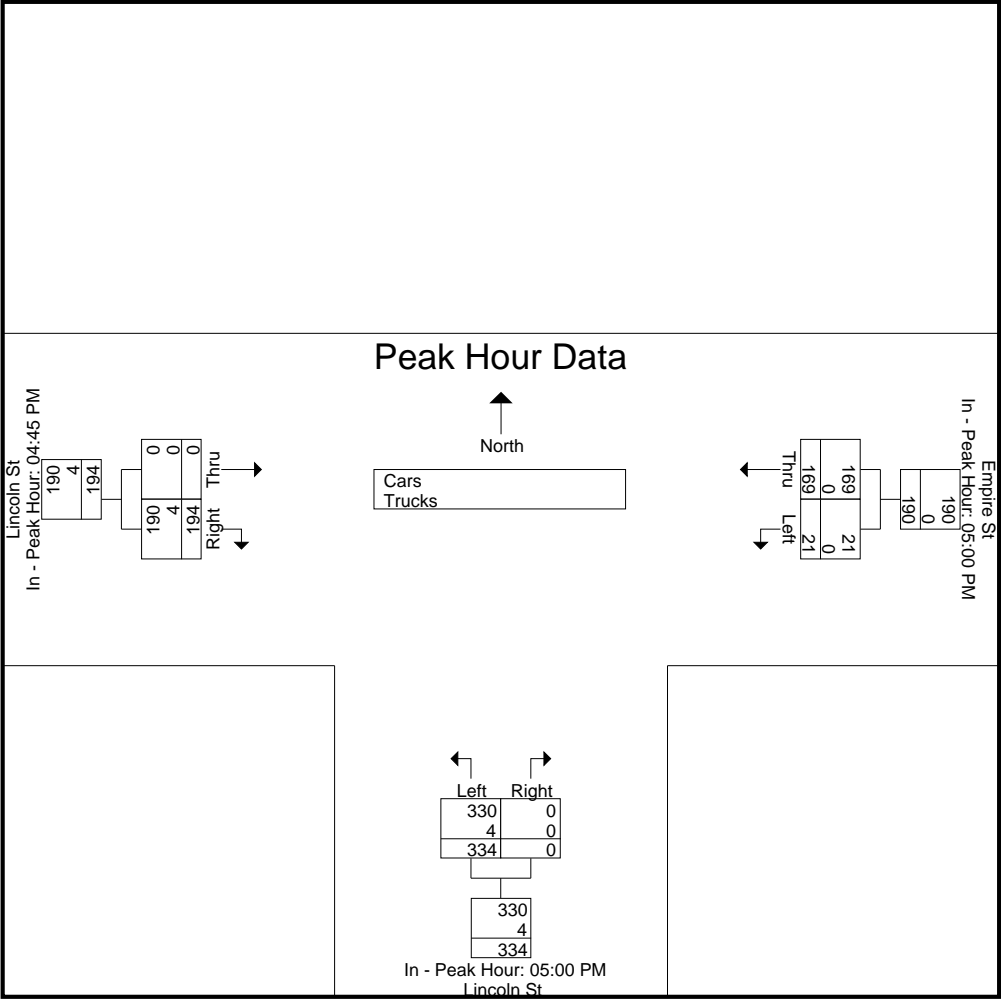
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

| | 05:00 PM | | | 05:00 PM | | | 04:45 PM | | |
|--------------|-----------|-----------|-----------|-----------|---|-----------|----------|-----------|-----------|
| +0 mins. | 3 | 29 | 32 | 58 | 0 | 58 | 0 | 41 | 41 |
| +15 mins. | 10 | 52 | 62 | 91 | 0 | 91 | 0 | 64 | 64 |
| +30 mins. | 3 | 35 | 38 | 90 | 0 | 90 | 0 | 43 | 43 |
| +45 mins. | 5 | 53 | 58 | 95 | 0 | 95 | 0 | 46 | 46 |
| Total Volume | 21 | 169 | 190 | 334 | 0 | 334 | 0 | 194 | 194 |

Accurate Counts
978-664-2565

| | | | | | | | | | |
|--------------|------|------|------|------|------|------|------|------|------|
| % App. Total | 11.1 | 88.9 | | 100 | 0 | | 0 | 100 | |
| PHF | .525 | .797 | .766 | .879 | .000 | .879 | .000 | .758 | .758 |
| Cars | 21 | 169 | 190 | 330 | 0 | 330 | 0 | 190 | 190 |
| % Cars | 100 | 100 | 100 | 98.8 | 0 | 98.8 | 0 | 97.9 | 97.9 |
| Trucks | 0 | 0 | 0 | 4 | 0 | 4 | 0 | 4 | 4 |
| % Trucks | 0 | 0 | 0 | 1.2 | 0 | 1.2 | 0 | 2.1 | 2.1 |



Accurate Counts

978-664-2565

File Name : 35860002

Site Code : 35860002

Start Date : 4/9/2019

Page No : 5

N/S Street : Lincoln Street

E/W Street: Empire St / Lincoln St

City/State : Allston, MA

Weather : Cloudy

Groups Printed- Cars

| | Empire St From East | | Lincoln St From South | | Lincoln St From West | | |
|-------------|------------------------|------|--------------------------|-------|-------------------------|-------|------------|
| Start Time | Left | Thru | Left | Right | Thru | Right | Int. Total |
| 04:00 PM | 5 | 12 | 60 | 0 | 1 | 52 | 130 |
| 04:15 PM | 8 | 33 | 73 | 0 | 0 | 35 | 149 |
| 04:30 PM | 8 | 24 | 71 | 0 | 0 | 45 | 148 |
| 04:45 PM | 8 | 38 | 67 | 0 | 0 | 40 | 153 |
| Total | 29 | 107 | 271 | 0 | 1 | 172 | 580 |
| 05:00 PM | 3 | 29 | 55 | 0 | 0 | 62 | 149 |
| 05:15 PM | 10 | 52 | 90 | 0 | 0 | 42 | 194 |
| 05:30 PM | 3 | 35 | 90 | 0 | 0 | 46 | 174 |
| 05:45 PM | 5 | 53 | 95 | 0 | 0 | 32 | 185 |
| Total | 21 | 169 | 330 | 0 | 0 | 182 | 702 |
| Grand Total | 50 | 276 | 601 | 0 | 1 | 354 | 1282 |
| Apprch % | 15.3 | 84.7 | 100 | 0 | 0.3 | 99.7 | |
| Total % | 3.9 | 21.5 | 46.9 | 0 | 0.1 | 27.6 | |

Accurate Counts

978-664-2565

File Name : 35860002

Site Code : 35860002

Start Date : 4/9/2019

Page No : 6

N/S Street : Lincoln Street

E/W Street: Empire St / Lincoln St

City/State : Allston, MA

Weather : Cloudy

| | Empire St From East | | | Lincoln St From South | | | Lincoln St From West | | | |
|--|------------------------|-----------|------------|--------------------------|-------|------------|-------------------------|-----------|------------|------------|
| Start Time | Left | Thru | App. Total | Left | Right | App. Total | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 05:00 PM | | | | | | | | | | |
| 05:00 PM | 3 | 29 | 32 | 55 | 0 | 55 | 0 | 62 | 62 | 149 |
| 05:15 PM | 10 | 52 | 62 | 90 | 0 | 90 | 0 | 42 | 42 | 194 |
| 05:30 PM | 3 | 35 | 38 | 90 | 0 | 90 | 0 | 46 | 46 | 174 |
| 05:45 PM | 5 | 53 | 58 | 95 | 0 | 95 | 0 | 32 | 32 | 185 |
| Total Volume | 21 | 169 | 190 | 330 | 0 | 330 | 0 | 182 | 182 | 702 |
| % App. Total | 11.1 | 88.9 | | 100 | 0 | | 0 | 100 | | |
| PHF | .525 | .797 | .766 | .868 | .000 | .868 | .000 | .734 | .734 | .905 |

Accurate Counts

978-664-2565

File Name : 35860002

Site Code : 35860002

Start Date : 4/9/2019

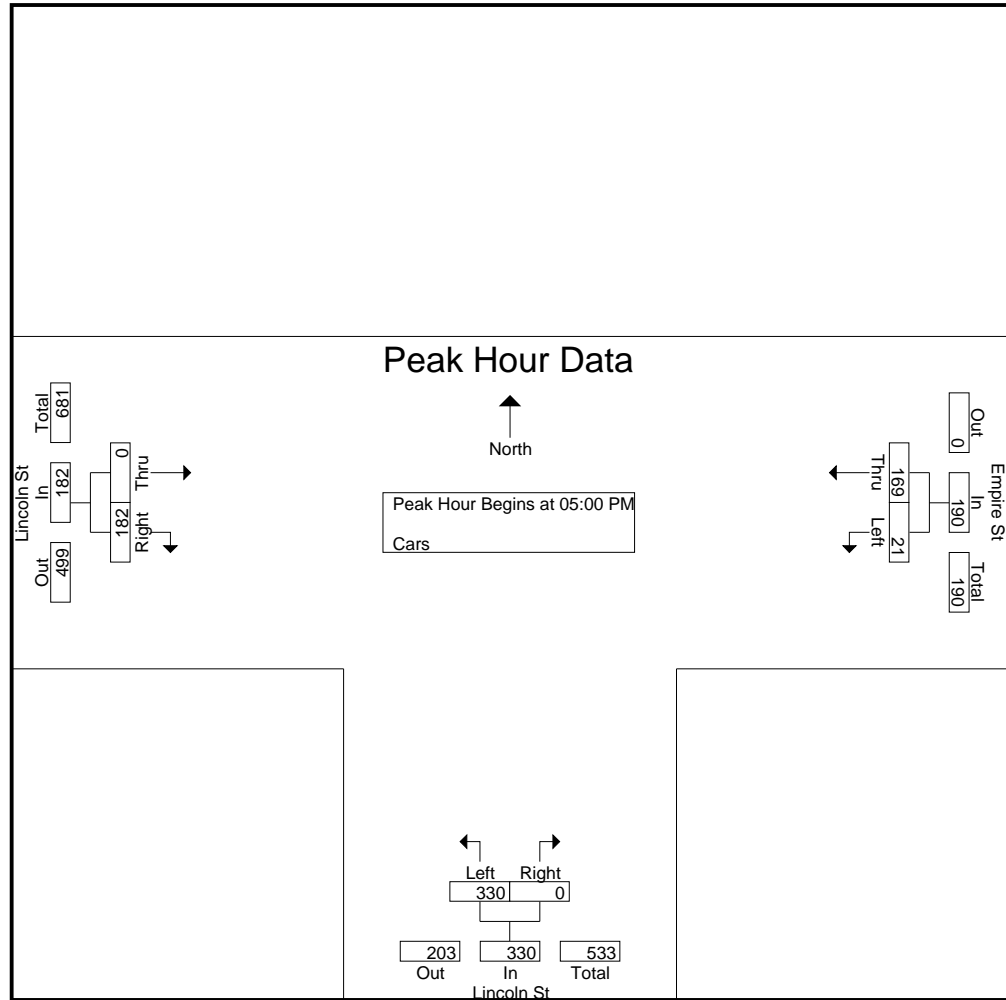
Page No : 7

N/S Street : Lincoln Street

E/W Street: Empire St / Lincoln St

City/State : Allston, MA

Weather : Cloudy



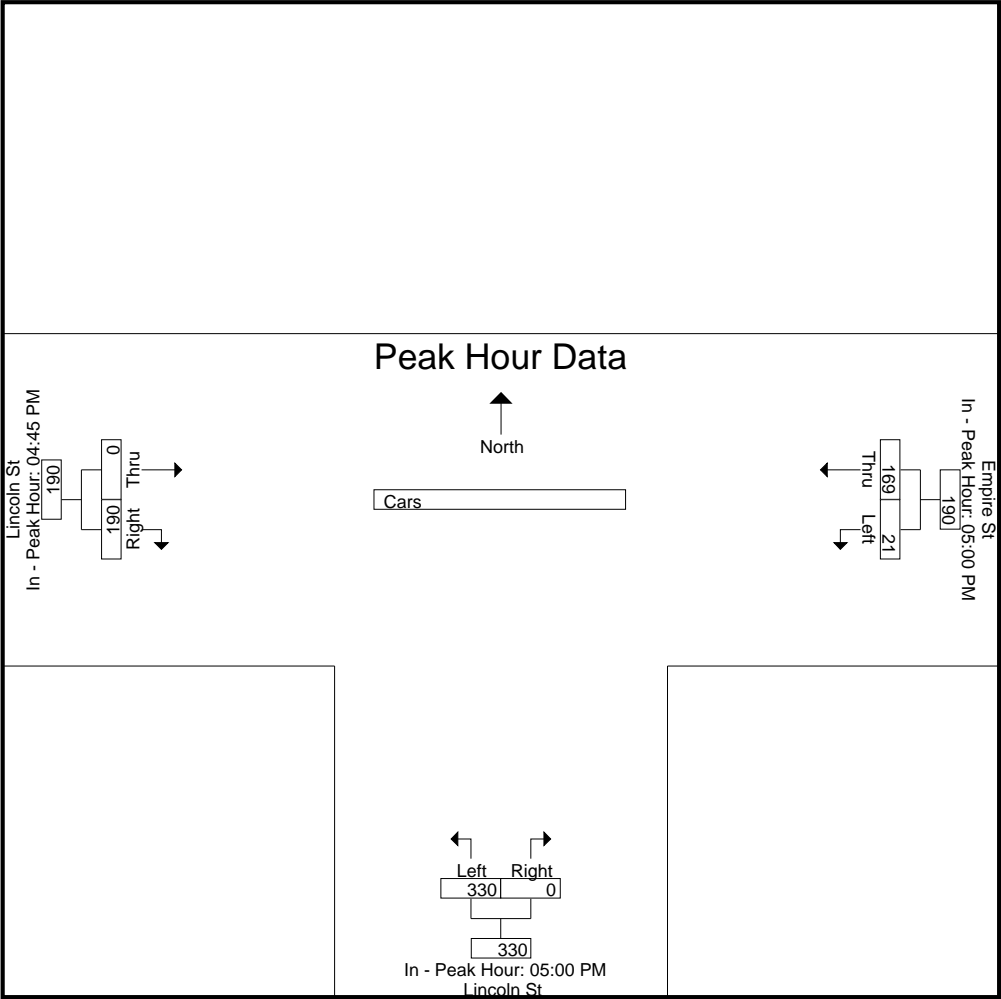
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

| | 05:00 PM | | | 05:00 PM | | | 04:45 PM | | |
|--------------|----------|-----|-----|----------|---|-----|----------|-----|-----|
| +0 mins. | 3 | 29 | 32 | 55 | 0 | 55 | 0 | 40 | 40 |
| +15 mins. | 10 | 52 | 62 | 90 | 0 | 90 | 0 | 62 | 62 |
| +30 mins. | 3 | 35 | 38 | 90 | 0 | 90 | 0 | 42 | 42 |
| +45 mins. | 5 | 53 | 58 | 95 | 0 | 95 | 0 | 46 | 46 |
| Total Volume | 21 | 169 | 190 | 330 | 0 | 330 | 0 | 190 | 190 |

Accurate Counts
978-664-2565

| | | | | | | | | | |
|--------------|------|------|------|------|------|------|------|------|------|
| % App. Total | 11.1 | 88.9 | | 100 | 0 | | 0 | 100 | |
| PHF | .525 | .797 | .766 | .868 | .000 | .868 | .000 | .766 | .766 |



Accurate Counts

978-664-2565

File Name : 35860002

Site Code : 35860002

Start Date : 4/9/2019

Page No : 9

N/S Street : Lincoln Street

E/W Street: Empire St / Lincoln St

City/State : Allston, MA

Weather : Cloudy

Groups Printed- Trucks

| Start Time | Empire St From East | | Lincoln St From South | | Lincoln St From West | | Int. Total |
|-------------|------------------------|------|--------------------------|-------|-------------------------|-------|------------|
| | Left | Thru | Left | Right | Thru | Right | |
| 04:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:30 PM | 0 | 0 | 2 | 0 | 0 | 0 | 2 |
| 04:45 PM | 0 | 1 | 1 | 0 | 0 | 1 | 3 |
| Total | 0 | 1 | 3 | 0 | 0 | 1 | 5 |
| 05:00 PM | 0 | 0 | 3 | 0 | 0 | 2 | 5 |
| 05:15 PM | 0 | 0 | 1 | 0 | 0 | 1 | 2 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:45 PM | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| Total | 0 | 0 | 4 | 0 | 0 | 4 | 8 |
| Grand Total | 0 | 1 | 7 | 0 | 0 | 5 | 13 |
| Apprch % | 0 | 100 | 100 | 0 | 0 | 100 | |
| Total % | 0 | 7.7 | 53.8 | 0 | 0 | 38.5 | |

Accurate Counts

978-664-2565

File Name : 35860002

Site Code : 35860002

Start Date : 4/9/2019

Page No : 10

N/S Street : Lincoln Street

E/W Street: Empire St / Lincoln St

City/State : Allston, MA

Weather : Cloudy

| | Empire St From East | | | Lincoln St From South | | | Lincoln St From West | | | |
|--|------------------------|------|------------|--------------------------|-------|------------|-------------------------|-------|------------|------------|
| Start Time | Left | Thru | App. Total | Left | Right | App. Total | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:30 PM | | | | | | | | | | |
| 04:30 PM | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 2 |
| 04:45 PM | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 3 |
| 05:00 PM | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 2 | 2 | 5 |
| 05:15 PM | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 2 |
| Total Volume | 0 | 1 | 1 | 7 | 0 | 7 | 0 | 4 | 4 | 12 |
| % App. Total | 0 | 100 | | 100 | 0 | | 0 | 100 | | |
| PHF | .000 | .250 | .250 | .583 | .000 | .583 | .000 | .500 | .500 | .600 |

Accurate Counts

978-664-2565

File Name : 35860002

Site Code : 35860002

Start Date : 4/9/2019

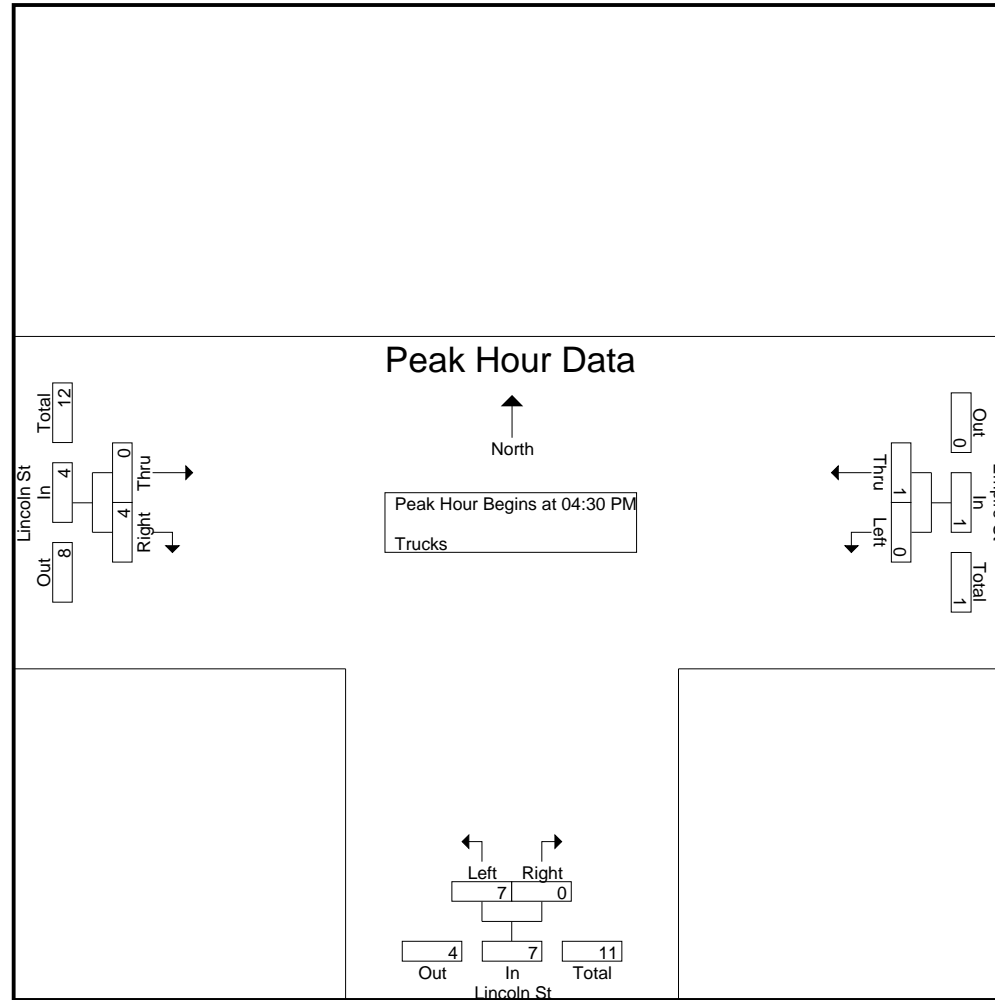
Page No : 11

N/S Street : Lincoln Street

E/W Street: Empire St / Lincoln St

City/State : Allston, MA

Weather : Cloudy



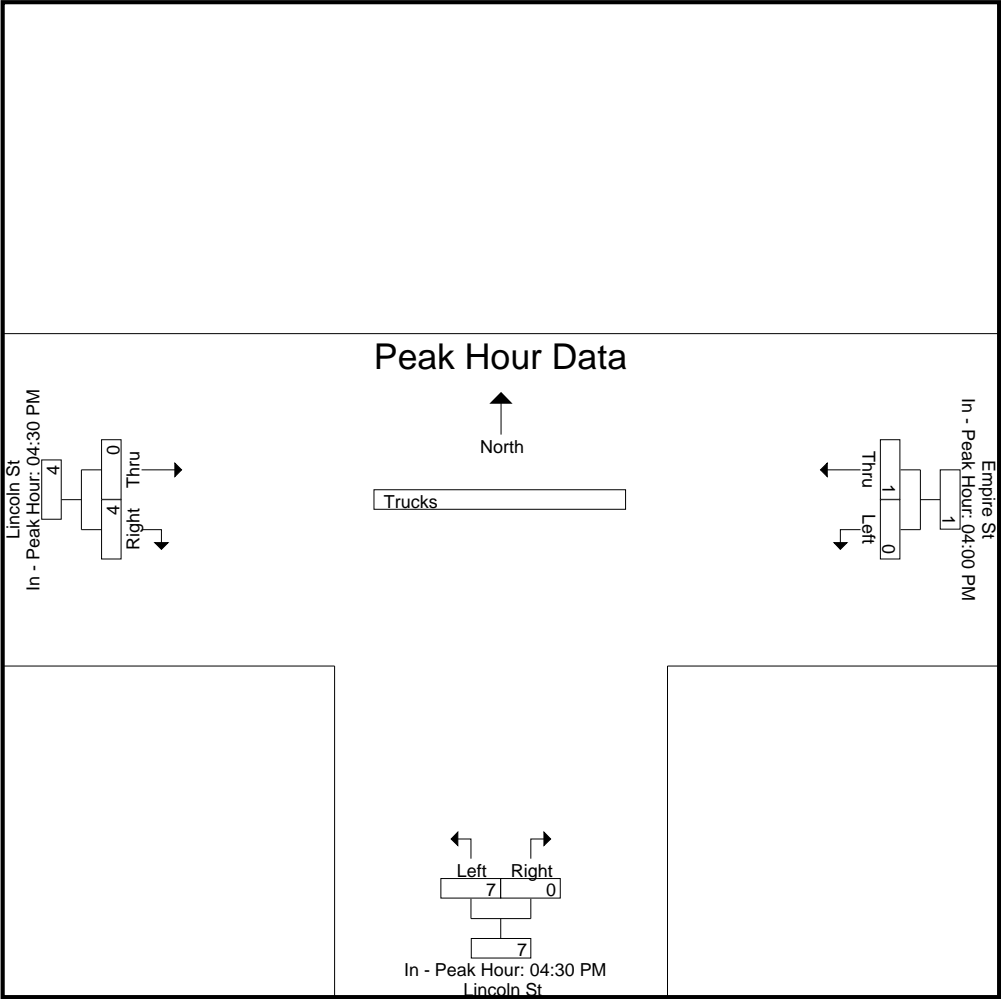
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

| | 04:00 PM | | | 04:30 PM | | | 04:30 PM | | |
|--------------|----------|---|---|----------|---|---|----------|---|---|
| +0 mins. | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 |
| +15 mins. | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 |
| +30 mins. | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 2 | 2 |
| +45 mins. | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 |
| Total Volume | 0 | 1 | 1 | 7 | 0 | 7 | 0 | 4 | 4 |

Accurate Counts
978-664-2565

| | | | | | | | | | |
|--------------|------|------|------|------|------|------|------|------|------|
| % App. Total | 0 | 100 | | 100 | 0 | | 0 | 100 | |
| PHF | .000 | .250 | .250 | .583 | .000 | .583 | .000 | .500 | .500 |



Accurate Counts

978-664-2565

N/S Street : Lincoln Street
E/W Street: Empire St / Lincoln St
City/State : Allston, MA
Weather : Cloudy

File Name : 35860002
Site Code : 35860002
Start Date : 4/9/2019
Page No : 13

Groups Printed- Bikes Peds

| | Empire St From East | | | Lincoln St From South | | | Lincoln St From West | | | | | |
|-------------|------------------------|------|------|--------------------------|-------|------|-------------------------|-------|------|--------------|--------------|------------|
| Start Time | Left | Thru | Peds | Left | Right | Peds | Thru | Right | Peds | Exclu. Total | Inclu. Total | Int. Total |
| 04:00 PM | 0 | 0 | 4 | 0 | 0 | 3 | 0 | 0 | 0 | 7 | 0 | 7 |
| 04:15 PM | 0 | 2 | 1 | 1 | 0 | 3 | 0 | 0 | 0 | 4 | 3 | 7 |
| 04:30 PM | 0 | 0 | 2 | 0 | 1 | 2 | 0 | 0 | 2 | 6 | 1 | 7 |
| 04:45 PM | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 2 | 1 | 3 |
| Total | 0 | 2 | 8 | 2 | 1 | 9 | 0 | 0 | 2 | 19 | 5 | 24 |
| 05:00 PM | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 0 | 2 | 5 | 1 | 6 |
| 05:15 PM | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 3 | 0 | 3 |
| 05:30 PM | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 3 | 0 | 3 |
| 05:45 PM | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Total | 0 | 0 | 5 | 0 | 1 | 4 | 0 | 0 | 3 | 12 | 1 | 13 |
| Grand Total | 0 | 2 | 13 | 2 | 2 | 13 | 0 | 0 | 5 | 31 | 6 | 37 |
| Apprch % | 0 | 100 | | 50 | 50 | | 0 | 0 | | | | |
| Total % | 0 | 33.3 | | 33.3 | 33.3 | | 0 | 0 | | 83.8 | 16.2 | |

Accurate Counts

978-664-2565

File Name : 35860002

Site Code : 35860002

Start Date : 4/9/2019

Page No : 14

N/S Street : Lincoln Street
E/W Street: Empire St / Lincoln St
City/State : Allston, MA
Weather : Cloudy

| | Empire St From East | | | Lincoln St From South | | | Lincoln St From West | | | |
|--|------------------------|------|------------|--------------------------|-------|------------|-------------------------|-------|------------|------------|
| Start Time | Left | Thru | App. Total | Left | Right | App. Total | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:15 PM | | | | | | | | | | |
| 04:15 PM | 0 | 2 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 3 |
| 04:30 PM | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 |
| 04:45 PM | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 |
| 05:00 PM | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 |
| Total Volume | 0 | 2 | 2 | 2 | 2 | 4 | 0 | 0 | 0 | 6 |
| % App. Total | 0 | 100 | | 50 | 50 | | 0 | 0 | | |
| PHF | .000 | .250 | .250 | .500 | .500 | 1.00 | .000 | .000 | .000 | .500 |

Accurate Counts

978-664-2565

File Name : 35860002

Site Code : 35860002

Start Date : 4/9/2019

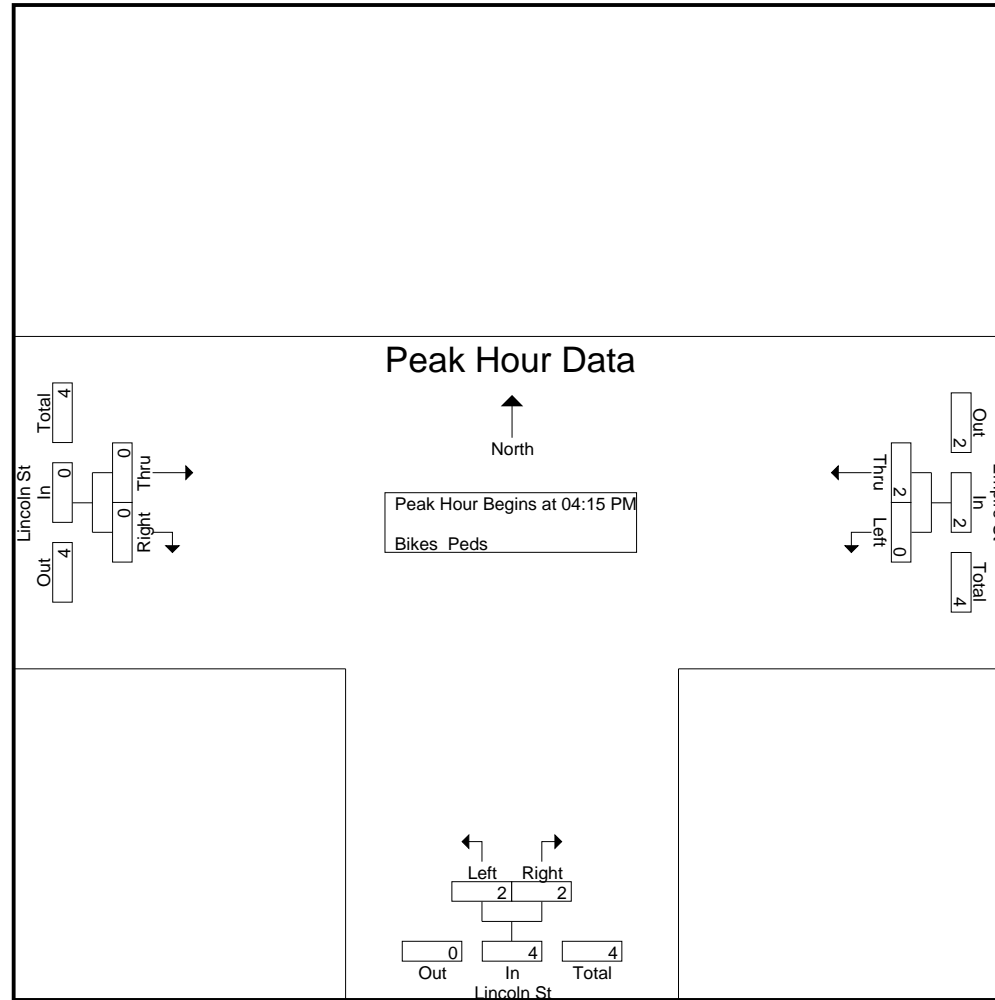
Page No : 15

N/S Street : Lincoln Street

E/W Street: Empire St / Lincoln St

City/State : Allston, MA

Weather : Cloudy



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

| | 04:00 PM | | | 04:15 PM | | | 04:00 PM | | |
|--------------|----------|-----|---|----------|----|---|----------|---|---|
| +0 mins. | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 |
| +15 mins. | 0 | 2 | 2 | 0 | 1 | 1 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 |
| +45 mins. | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 |
| Total Volume | 0 | 2 | 2 | 2 | 2 | 4 | 0 | 0 | 0 |
| % App. Total | 0 | 100 | | 50 | 50 | | 0 | 0 | |

Accurate Counts
978-664-2565

PHF

.000

.250

.250

.500

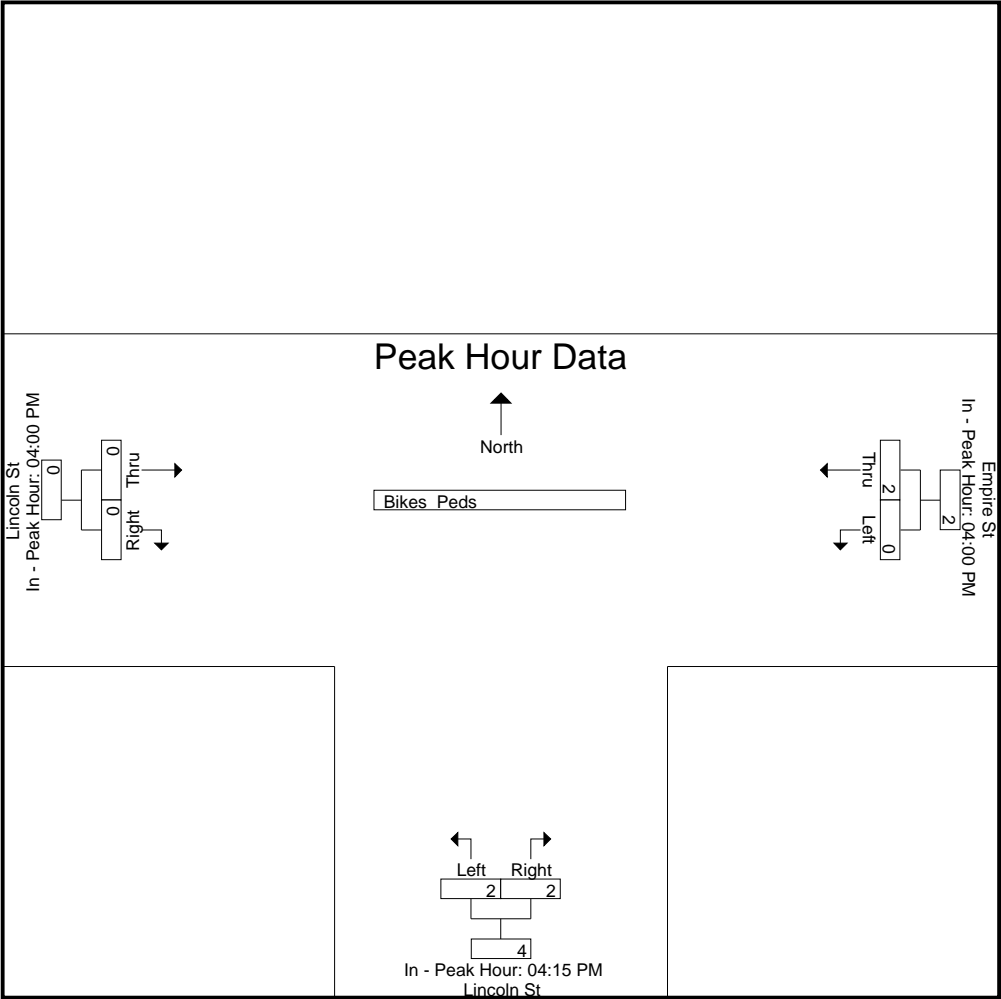
.500

1.000

.000

.000

.000



Accurate Counts

978-664-2565

File Name : 35860003

Site Code : 35860003

Start Date : 4/9/2019

Page No : 1

N/S Street : Royal Street
E/W Street: Lincoln Street
City/State : Allston, MA
Weather : Cloudy

Groups Printed- Cars - Trucks

| | Royal St From North | | Lincoln St From East | | Lincoln St From West | | |
|-------------|------------------------|-------|-------------------------|-------|-------------------------|------|------------|
| Start Time | Left | Right | Thru | Right | Left | Thru | Int. Total |
| 07:00 AM | 0 | 0 | 56 | 0 | 1 | 33 | 90 |
| 07:15 AM | 0 | 0 | 60 | 1 | 1 | 50 | 112 |
| 07:30 AM | 1 | 0 | 89 | 2 | 1 | 65 | 158 |
| 07:45 AM | 0 | 1 | 70 | 3 | 0 | 52 | 126 |
| Total | 1 | 1 | 275 | 6 | 3 | 200 | 486 |
| 08:00 AM | 0 | 0 | 86 | 2 | 1 | 60 | 149 |
| 08:15 AM | 0 | 0 | 78 | 0 | 2 | 59 | 139 |
| 08:30 AM | 0 | 0 | 98 | 3 | 0 | 55 | 156 |
| 08:45 AM | 0 | 0 | 101 | 0 | 2 | 50 | 153 |
| Total | 0 | 0 | 363 | 5 | 5 | 224 | 597 |
| Grand Total | 1 | 1 | 638 | 11 | 8 | 424 | 1083 |
| Apprch % | 50 | 50 | 98.3 | 1.7 | 1.9 | 98.1 | |
| Total % | 0.1 | 0.1 | 58.9 | 1 | 0.7 | 39.2 | |
| Cars | 1 | 0 | 619 | 11 | 8 | 417 | 1056 |
| % Cars | 100 | 0 | 97 | 100 | 100 | 98.3 | 97.5 |
| Trucks | 0 | 1 | 19 | 0 | 0 | 7 | 27 |
| % Trucks | 0 | 100 | 3 | 0 | 0 | 1.7 | 2.5 |

Accurate Counts

978-664-2565

File Name : 35860003

Site Code : 35860003

Start Date : 4/9/2019

Page No : 2

N/S Street : Royal Street
E/W Street: Lincoln Street
City/State : Allston, MA
Weather : Cloudy

| | Royal St From North | | | Lincoln St From East | | | Lincoln St From West | | | |
|--|------------------------|-------|------------|-------------------------|----------|------------|-------------------------|-----------|------------|------------|
| Start Time | Left | Right | App. Total | Thru | Right | App. Total | Left | Thru | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 08:00 AM | | | | | | | | | | |
| 08:00 AM | 0 | 0 | 0 | 86 | 2 | 88 | 1 | 60 | 61 | 149 |
| 08:15 AM | 0 | 0 | 0 | 78 | 0 | 78 | 2 | 59 | 61 | 139 |
| 08:30 AM | 0 | 0 | 0 | 98 | 3 | 101 | 0 | 55 | 55 | 156 |
| 08:45 AM | 0 | 0 | 0 | 101 | 0 | 101 | 2 | 50 | 52 | 153 |
| Total Volume | 0 | 0 | 0 | 363 | 5 | 368 | 5 | 224 | 229 | 597 |
| % App. Total | 0 | 0 | | 98.6 | 1.4 | | 2.2 | 97.8 | | |
| PHF | .000 | .000 | .000 | .899 | .417 | .911 | .625 | .933 | .939 | .957 |
| Cars | 0 | 0 | 0 | 352 | 5 | 357 | 5 | 219 | 224 | 581 |
| % Cars | 0 | 0 | 0 | 97.0 | 100 | 97.0 | 100 | 97.8 | 97.8 | 97.3 |
| Trucks | 0 | 0 | 0 | 11 | 0 | 11 | 0 | 5 | 5 | 16 |
| % Trucks | 0 | 0 | 0 | 3.0 | 0 | 3.0 | 0 | 2.2 | 2.2 | 2.7 |

Accurate Counts

978-664-2565

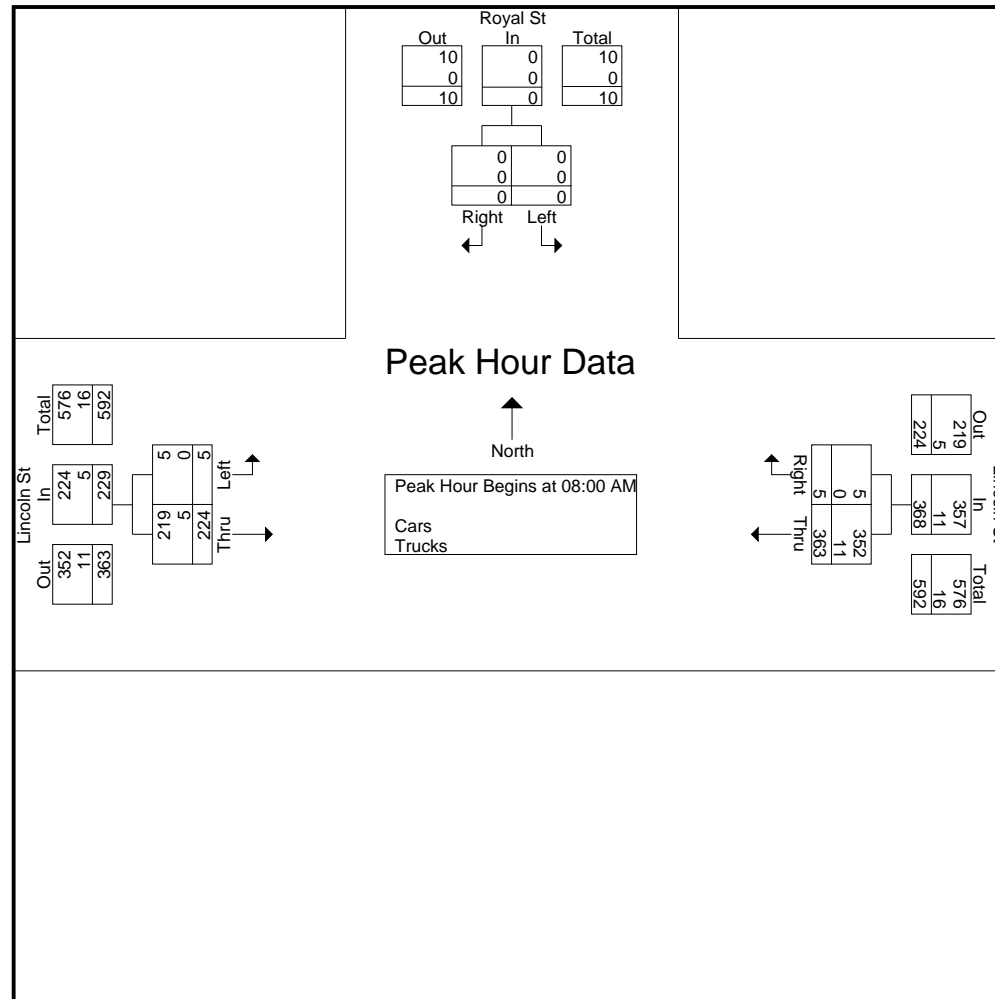
File Name : 35860003

Site Code : 35860003

Start Date : 4/9/2019

Page No : 3

N/S Street : Royal Street
E/W Street: Lincoln Street
City/State : Allston, MA
Weather : Cloudy



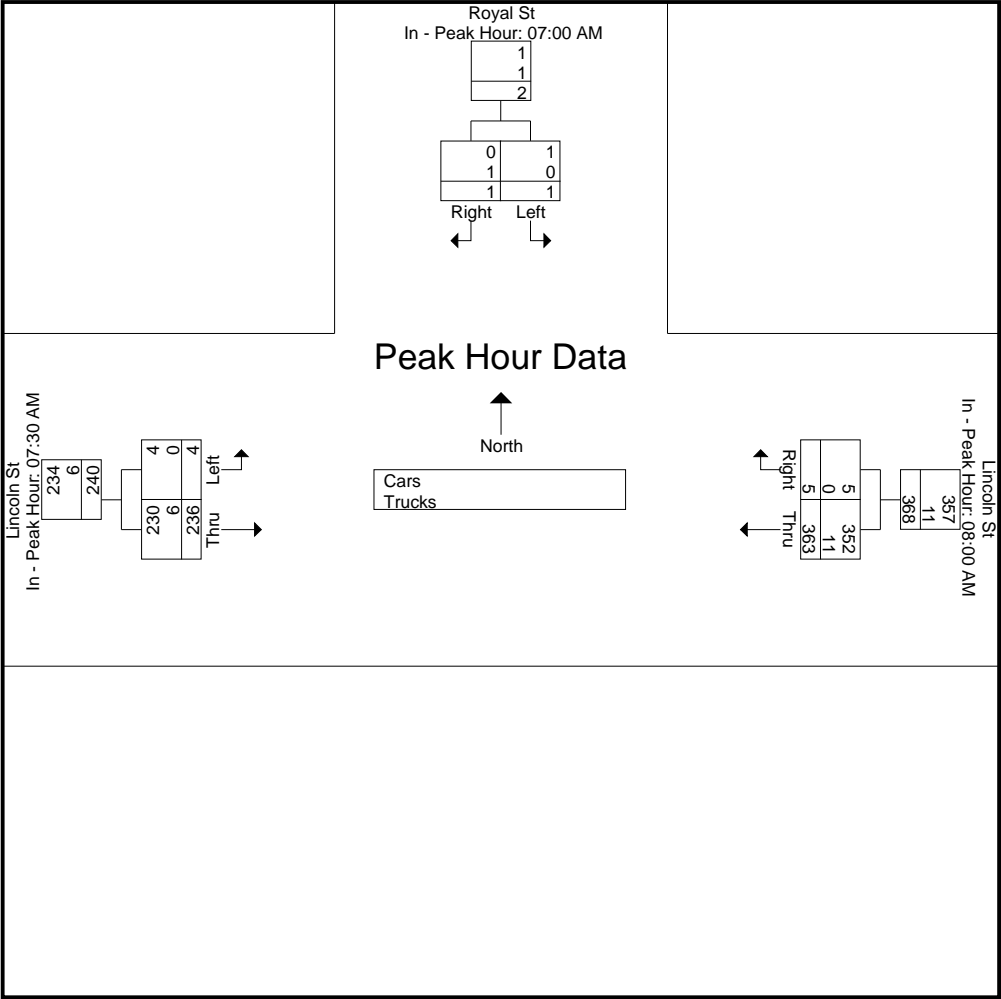
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

| | 07:00 AM | | | 08:00 AM | | | 07:30 AM | | |
|--------------|----------|----------|----------|------------|----------|------------|----------|-----------|-----------|
| +0 mins. | 0 | 0 | 0 | 86 | 2 | 88 | 1 | 65 | 66 |
| +15 mins. | 0 | 0 | 0 | 78 | 0 | 78 | 0 | 52 | 52 |
| +30 mins. | 1 | 0 | 1 | 98 | 3 | 101 | 1 | 60 | 61 |
| +45 mins. | 0 | 1 | 1 | 101 | 0 | 101 | 2 | 59 | 61 |
| Total Volume | 1 | 1 | 2 | 363 | 5 | 368 | 4 | 236 | 240 |
| % App. Total | 50 | 50 | | 98.6 | 1.4 | | 1.7 | 98.3 | |

Accurate Counts
978-664-2565

| PHF | .250 | .250 | .500 | .899 | .417 | .911 | .500 | .908 | .909 |
|----------|------|------|------|------|------|------|------|------|------|
| Cars | 1 | 0 | 1 | 352 | 5 | 357 | 4 | 230 | 234 |
| % Cars | 100 | 0 | 50 | 97 | 100 | 97 | 100 | 97.5 | 97.5 |
| Trucks | 0 | 1 | 1 | 11 | 0 | 11 | 0 | 6 | 6 |
| % Trucks | 0 | 100 | 50 | 3 | 0 | 3 | 0 | 2.5 | 2.5 |



Accurate Counts

978-664-2565

File Name : 35860003

Site Code : 35860003

Start Date : 4/9/2019

Page No : 5

N/S Street : Royal Street
E/W Street: Lincoln Street
City/State : Allston, MA
Weather : Cloudy

Groups Printed- Cars

| | Royal St From North | | Lincoln St From East | | Lincoln St From West | | |
|-------------|------------------------|-------|-------------------------|-------|-------------------------|------|------------|
| Start Time | Left | Right | Thru | Right | Left | Thru | Int. Total |
| 07:00 AM | 0 | 0 | 56 | 0 | 1 | 33 | 90 |
| 07:15 AM | 0 | 0 | 58 | 1 | 1 | 50 | 110 |
| 07:30 AM | 1 | 0 | 88 | 2 | 1 | 65 | 157 |
| 07:45 AM | 0 | 0 | 65 | 3 | 0 | 50 | 118 |
| Total | 1 | 0 | 267 | 6 | 3 | 198 | 475 |
| 08:00 AM | 0 | 0 | 82 | 2 | 1 | 58 | 143 |
| 08:15 AM | 0 | 0 | 72 | 0 | 2 | 57 | 131 |
| 08:30 AM | 0 | 0 | 97 | 3 | 0 | 54 | 154 |
| 08:45 AM | 0 | 0 | 101 | 0 | 2 | 50 | 153 |
| Total | 0 | 0 | 352 | 5 | 5 | 219 | 581 |
| Grand Total | 1 | 0 | 619 | 11 | 8 | 417 | 1056 |
| Apprch % | 100 | 0 | 98.3 | 1.7 | 1.9 | 98.1 | |
| Total % | 0.1 | 0 | 58.6 | 1 | 0.8 | 39.5 | |

Accurate Counts

978-664-2565

File Name : 35860003

Site Code : 35860003

Start Date : 4/9/2019

Page No : 6

N/S Street : Royal Street
E/W Street: Lincoln Street
City/State : Allston, MA
Weather : Cloudy

| | Royal St From North | | | Lincoln St From East | | | Lincoln St From West | | | |
|--|------------------------|-------|------------|-------------------------|----------|------------|-------------------------|-----------|------------|------------|
| Start Time | Left | Right | App. Total | Thru | Right | App. Total | Left | Thru | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 08:00 AM | | | | | | | | | | |
| 08:00 AM | 0 | 0 | 0 | 82 | 2 | 84 | 1 | 58 | 59 | 143 |
| 08:15 AM | 0 | 0 | 0 | 72 | 0 | 72 | 2 | 57 | 59 | 131 |
| 08:30 AM | 0 | 0 | 0 | 97 | 3 | 100 | 0 | 54 | 54 | 154 |
| 08:45 AM | 0 | 0 | 0 | 101 | 0 | 101 | 2 | 50 | 52 | 153 |
| Total Volume | 0 | 0 | 0 | 352 | 5 | 357 | 5 | 219 | 224 | 581 |
| % App. Total | 0 | 0 | | 98.6 | 1.4 | | 2.2 | 97.8 | | |
| PHF | .000 | .000 | .000 | .871 | .417 | .884 | .625 | .944 | .949 | .943 |

Accurate Counts

978-664-2565

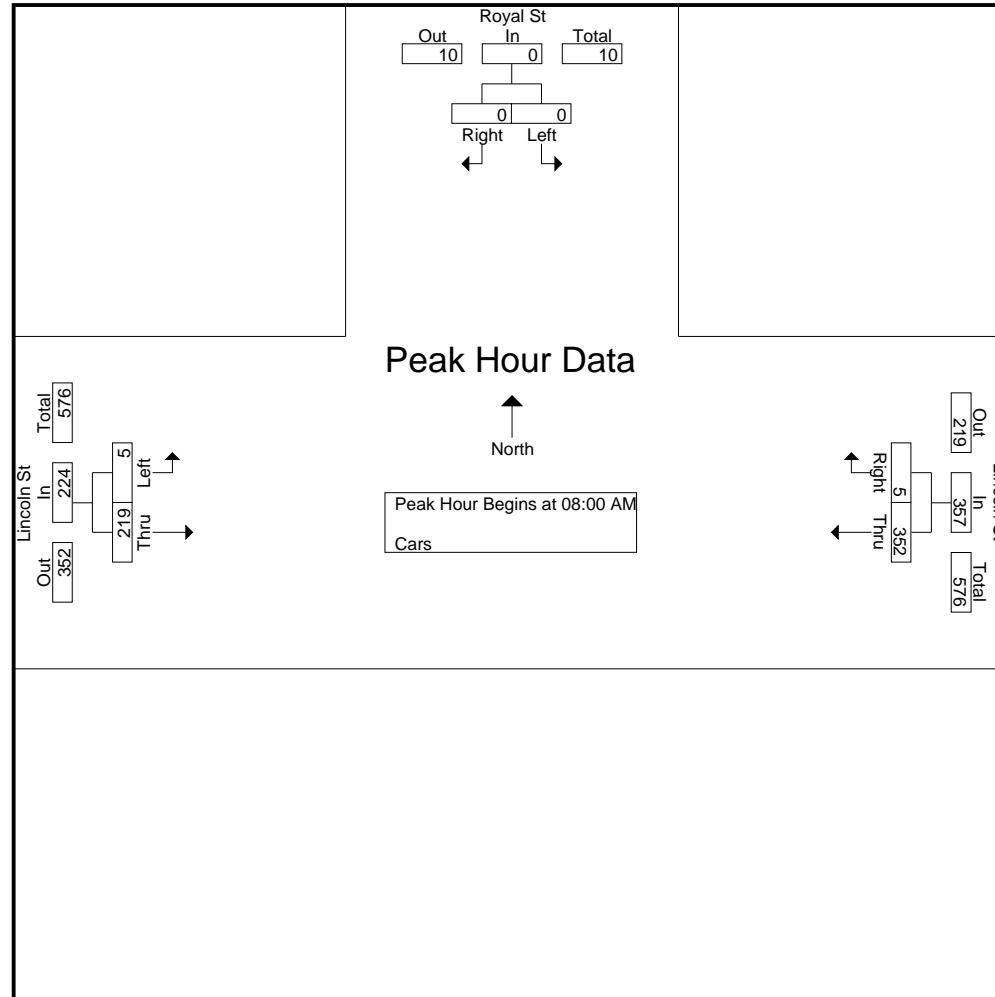
File Name : 35860003

Site Code : 35860003

Start Date : 4/9/2019

Page No : 7

N/S Street : Royal Street
E/W Street: Lincoln Street
City/State : Allston, MA
Weather : Cloudy



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

| | 07:00 AM | | | 08:00 AM | | | 07:30 AM | | |
|--------------|----------|---|----------|------------|----------|------------|----------|-----------|-----------|
| +0 mins. | 0 | 0 | 0 | 82 | 2 | 84 | 1 | 65 | 66 |
| +15 mins. | 0 | 0 | 0 | 72 | 0 | 72 | 0 | 50 | 50 |
| +30 mins. | 1 | 0 | 1 | 97 | 3 | 100 | 1 | 58 | 59 |
| +45 mins. | 0 | 0 | 0 | 101 | 0 | 101 | 2 | 57 | 59 |
| Total Volume | 1 | 0 | 1 | 352 | 5 | 357 | 4 | 230 | 234 |
| % App. Total | 100 | 0 | | 98.6 | 1.4 | | 1.7 | 98.3 | |

Accurate Counts
978-664-2565

PHF

.250

.000

.250

.871

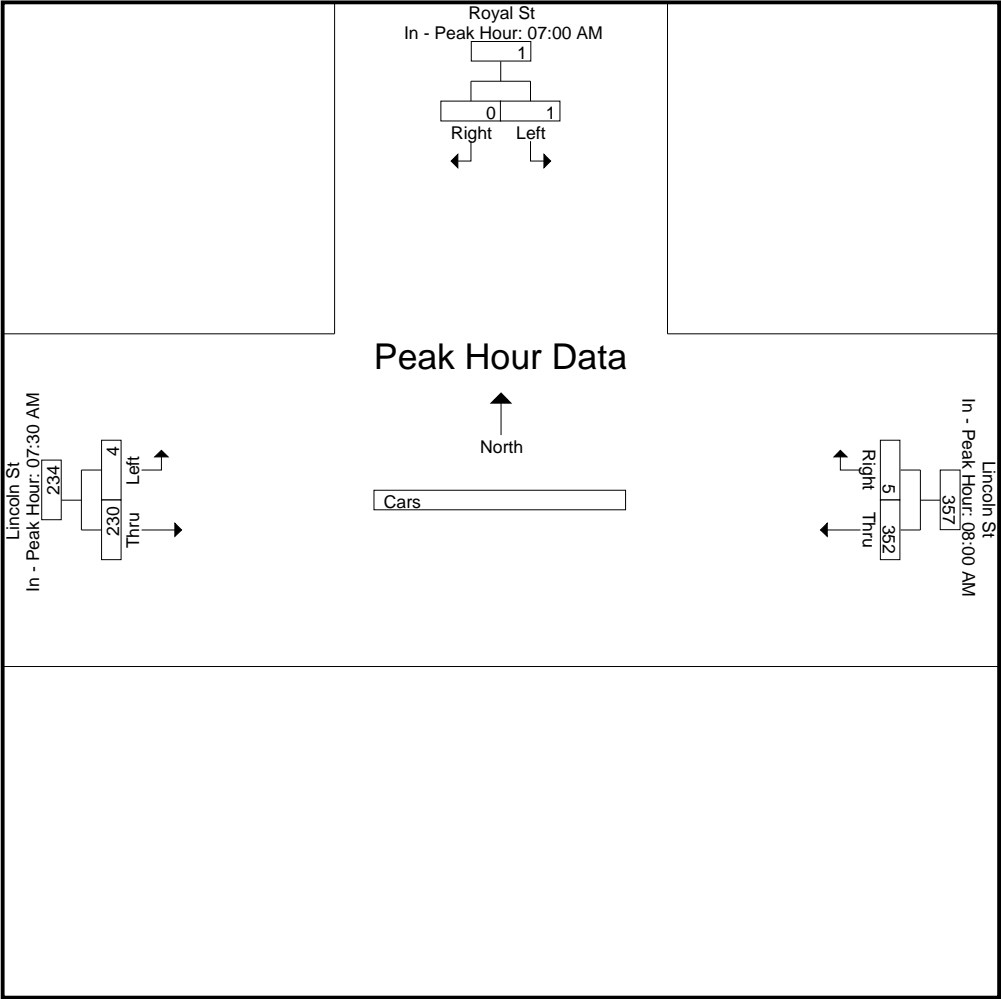
.417

.884

.500

.885

.886



Accurate Counts

978-664-2565

File Name : 35860003

Site Code : 35860003

Start Date : 4/9/2019

Page No : 9

N/S Street : Royal Street
E/W Street: Lincoln Street
City/State : Allston, MA
Weather : Cloudy

Groups Printed- Trucks

| | Royal St From North | | Lincoln St From East | | Lincoln St From West | | |
|-------------|------------------------|-------|-------------------------|-------|-------------------------|------|------------|
| Start Time | Left | Right | Thru | Right | Left | Thru | Int. Total |
| 07:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:15 AM | 0 | 0 | 2 | 0 | 0 | 0 | 2 |
| 07:30 AM | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| 07:45 AM | 0 | 1 | 5 | 0 | 0 | 2 | 8 |
| Total | 0 | 1 | 8 | 0 | 0 | 2 | 11 |
| 08:00 AM | 0 | 0 | 4 | 0 | 0 | 2 | 6 |
| 08:15 AM | 0 | 0 | 6 | 0 | 0 | 2 | 8 |
| 08:30 AM | 0 | 0 | 1 | 0 | 0 | 1 | 2 |
| 08:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 11 | 0 | 0 | 5 | 16 |
| Grand Total | 0 | 1 | 19 | 0 | 0 | 7 | 27 |
| Apprch % | 0 | 100 | 100 | 0 | 0 | 100 | |
| Total % | 0 | 3.7 | 70.4 | 0 | 0 | 25.9 | |

Accurate Counts

978-664-2565

File Name : 35860003

Site Code : 35860003

Start Date : 4/9/2019

Page No : 10

N/S Street : Royal Street
E/W Street: Lincoln Street
City/State : Allston, MA
Weather : Cloudy

| | Royal St From North | | | Lincoln St From East | | | Lincoln St From West | | | |
|--|------------------------|-------|------------|-------------------------|-------|------------|-------------------------|------|------------|------------|
| Start Time | Left | Right | App. Total | Thru | Right | App. Total | Left | Thru | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:45 AM | | | | | | | | | | |
| 07:45 AM | 0 | 1 | 1 | 5 | 0 | 5 | 0 | 2 | 2 | 8 |
| 08:00 AM | 0 | 0 | 0 | 4 | 0 | 4 | 0 | 2 | 2 | 6 |
| 08:15 AM | 0 | 0 | 0 | 6 | 0 | 6 | 0 | 2 | 2 | 8 |
| 08:30 AM | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 2 |
| Total Volume | 0 | 1 | 1 | 16 | 0 | 16 | 0 | 7 | 7 | 24 |
| % App. Total | 0 | 100 | | 100 | 0 | | 0 | 100 | | |
| PHF | .000 | .250 | .250 | .667 | .000 | .667 | .000 | .875 | .875 | .750 |

Accurate Counts

978-664-2565

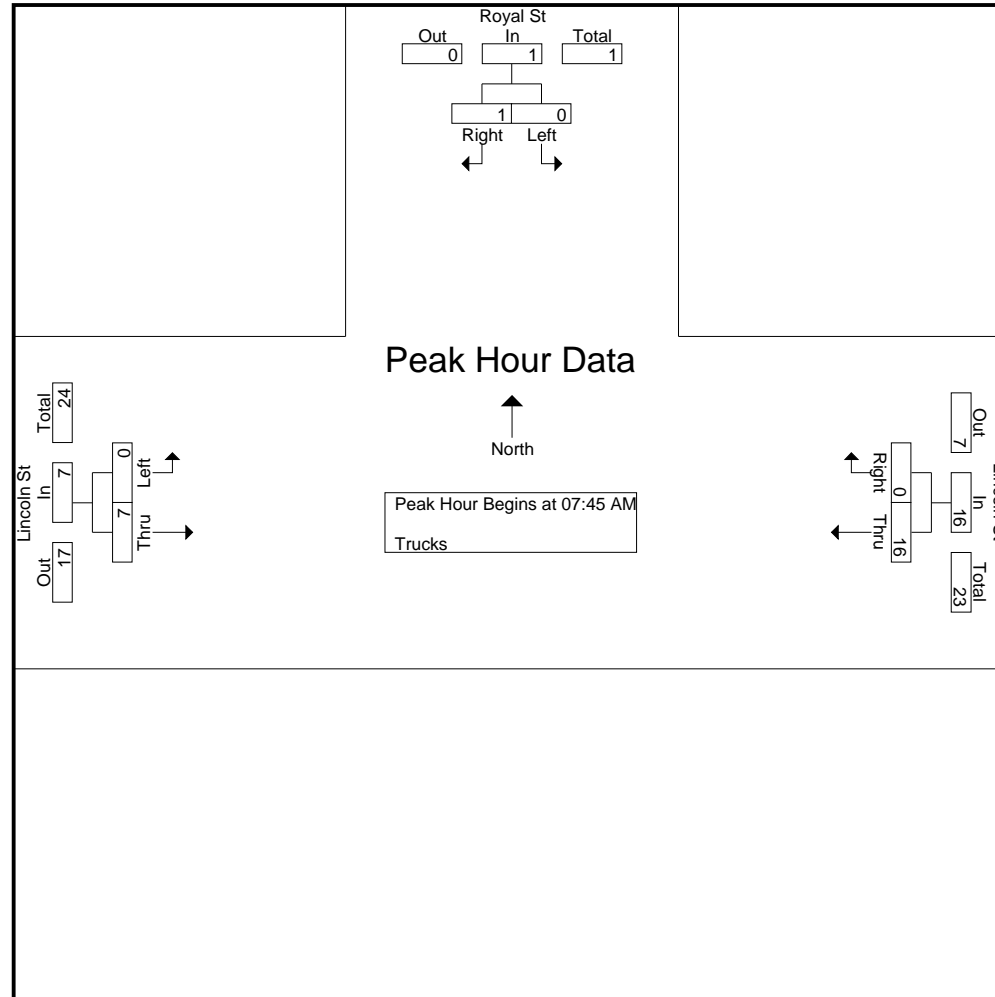
File Name : 35860003

Site Code : 35860003

Start Date : 4/9/2019

Page No : 11

N/S Street : Royal Street
E/W Street: Lincoln Street
City/State : Allston, MA
Weather : Cloudy



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

| | 07:00 AM | | | 07:30 AM | | | 07:45 AM | | |
|--------------|----------|-----|---|----------|---|----|----------|-----|---|
| +0 mins. | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 2 |
| +15 mins. | 0 | 0 | 0 | 5 | 0 | 5 | 0 | 2 | 2 |
| +30 mins. | 0 | 0 | 0 | 4 | 0 | 4 | 0 | 2 | 2 |
| +45 mins. | 0 | 1 | 1 | 6 | 0 | 6 | 0 | 1 | 1 |
| Total Volume | 0 | 1 | 1 | 16 | 0 | 16 | 0 | 7 | 7 |
| % App. Total | 0 | 100 | | 100 | 0 | | 0 | 100 | |

Accurate Counts
978-664-2565

PHF

.000

.250

.250

.667

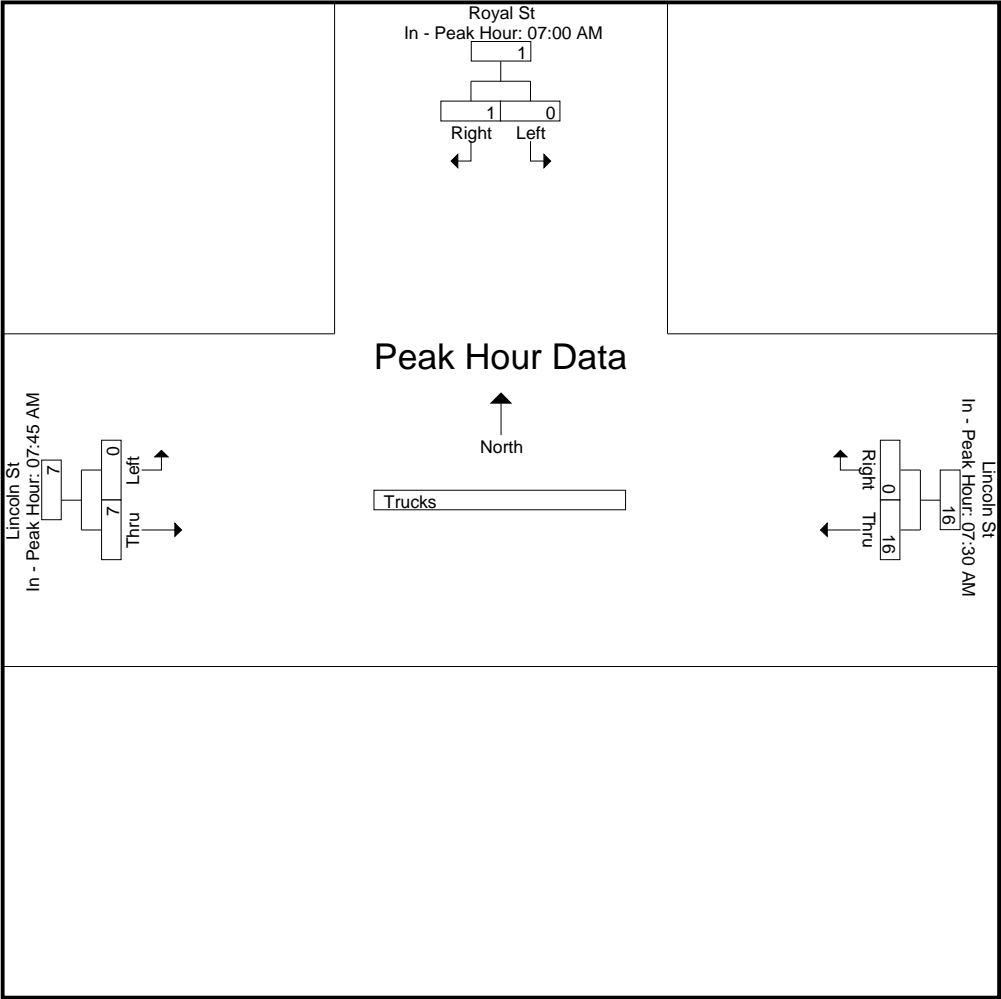
.000

.667

.000

.875

.875



Accurate Counts

978-664-2565

N/S Street : Royal Street
E/W Street: Lincoln Street
City/State : Allston, MA
Weather : Cloudy

File Name : 35860003
Site Code : 35860003
Start Date : 4/9/2019
Page No : 13

Groups Printed- Bikes Peds

| | Royal St From North | | | Lincoln St From East | | | Lincoln St From West | | | | | |
|-------------|------------------------|-------|------|-------------------------|-------|------|-------------------------|------|------|--------------|--------------|------------|
| Start Time | Left | Right | Peds | Thru | Right | Peds | Left | Thru | Peds | Exclu. Total | Inclu. Total | Int. Total |
| 07:00 AM | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 07:15 AM | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 3 |
| 07:30 AM | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 1 | 3 |
| 07:45 AM | 0 | 0 | 2 | 1 | 0 | 1 | 0 | 1 | 0 | 3 | 2 | 5 |
| Total | 0 | 0 | 6 | 2 | 0 | 2 | 0 | 2 | 0 | 8 | 4 | 12 |
| 08:00 AM | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 3 | 1 | 4 |
| 08:15 AM | 0 | 0 | 7 | 1 | 0 | 0 | 0 | 0 | 1 | 8 | 1 | 9 |
| 08:30 AM | 0 | 1 | 2 | 0 | 0 | 3 | 0 | 0 | 0 | 5 | 1 | 6 |
| 08:45 AM | 0 | 1 | 3 | 1 | 0 | 2 | 0 | 0 | 0 | 5 | 2 | 7 |
| Total | 1 | 2 | 13 | 2 | 0 | 6 | 0 | 0 | 2 | 21 | 5 | 26 |
| Grand Total | 1 | 2 | 19 | 4 | 0 | 8 | 0 | 2 | 2 | 29 | 9 | 38 |
| Apprch % | 33.3 | 66.7 | | 100 | 0 | | 0 | 100 | | | | |
| Total % | 11.1 | 22.2 | | 44.4 | 0 | | 0 | 22.2 | | 76.3 | 23.7 | |

Accurate Counts

978-664-2565

File Name : 35860003

Site Code : 35860003

Start Date : 4/9/2019

Page No : 14

N/S Street : Royal Street
E/W Street: Lincoln Street
City/State : Allston, MA
Weather : Cloudy

| | Royal St From North | | | Lincoln St From East | | | Lincoln St From West | | | |
|--|------------------------|-------|------------|-------------------------|-------|------------|-------------------------|------|------------|------------|
| Start Time | Left | Right | App. Total | Thru | Right | App. Total | Left | Thru | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:15 AM | | | | | | | | | | |
| 07:15 AM | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| 07:45 AM | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 2 |
| 08:00 AM | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total Volume | 1 | 0 | 1 | 2 | 0 | 2 | 0 | 2 | 2 | 5 |
| % App. Total | 100 | 0 | | 100 | 0 | | 0 | 100 | | |
| PHF | .250 | .000 | .250 | .500 | .000 | .500 | .000 | .500 | .500 | .625 |

Accurate Counts

978-664-2565

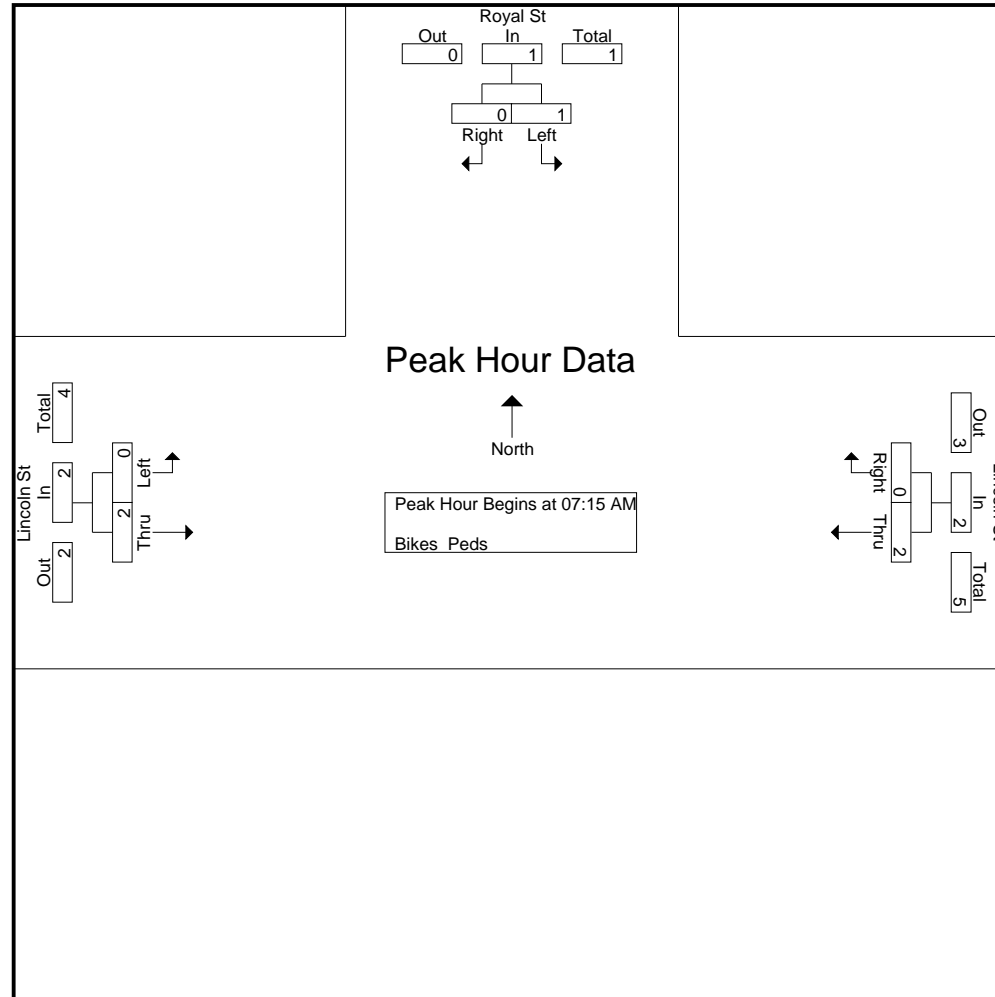
File Name : 35860003

Site Code : 35860003

Start Date : 4/9/2019

Page No : 15

N/S Street : Royal Street
E/W Street: Lincoln Street
City/State : Allston, MA
Weather : Cloudy



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

| | 08:00 AM | | | 07:00 AM | | | 07:00 AM | | |
|--------------|----------|------|---|----------|---|---|----------|-----|---|
| +0 mins. | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| +15 mins. | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 |
| +30 mins. | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 |
| +45 mins. | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 |
| Total Volume | 1 | 2 | 3 | 2 | 0 | 2 | 0 | 2 | 2 |
| % App. Total | 33.3 | 66.7 | | 100 | 0 | | 0 | 100 | |

Accurate Counts
978-664-2565

PHF

.250

.500

.750

.500

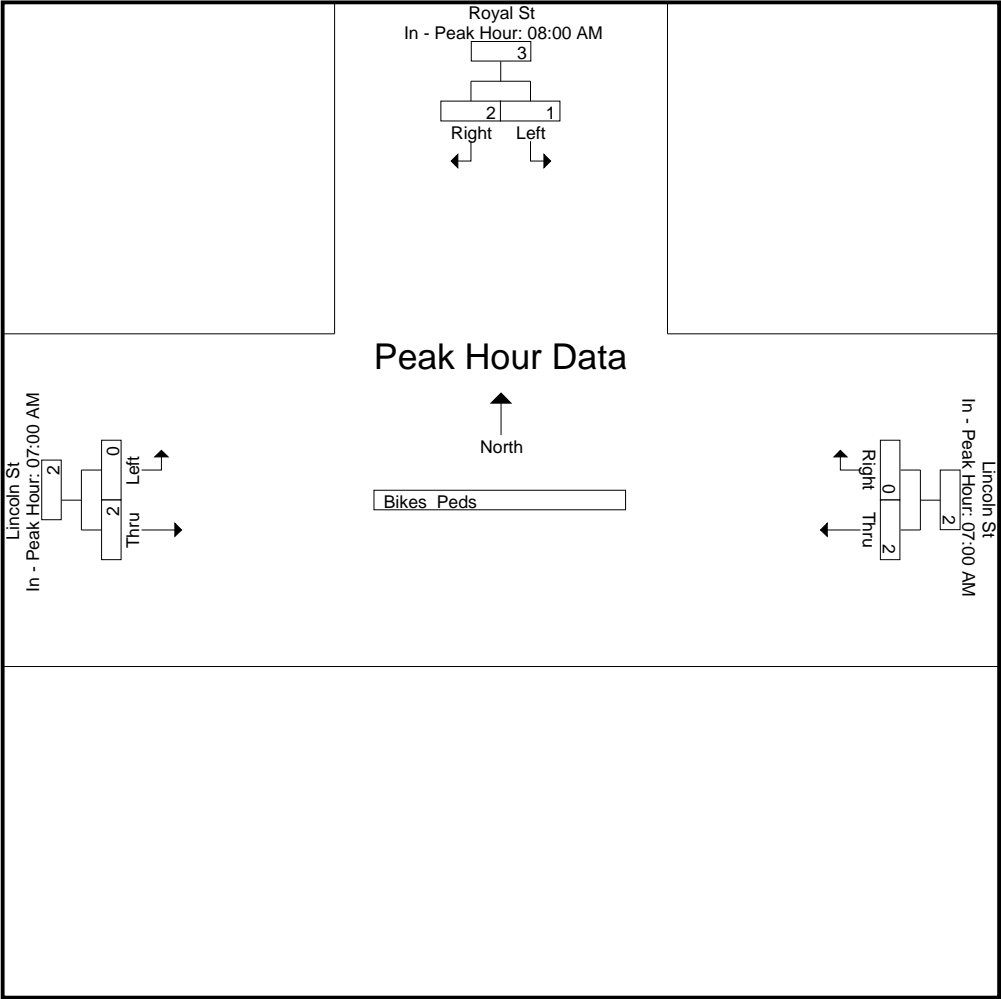
.000

.500

.000

.500

.500



Accurate Counts

978-664-2565

File Name : 35860003

Site Code : 35860003

Start Date : 4/9/2019

Page No : 1

N/S Street : Royal Street
E/W Street: Lincoln Street
City/State : Allston, MA
Weather : Cloudy

Groups Printed- Cars - Trucks

| | Royal St From North | | Lincoln St From East | | Lincoln St From West | | |
|-------------|------------------------|-------|-------------------------|-------|-------------------------|------|------------|
| Start Time | Left | Right | Thru | Right | Left | Thru | Int. Total |
| 04:00 PM | 0 | 0 | 64 | 7 | 1 | 48 | 120 |
| 04:15 PM | 0 | 0 | 96 | 5 | 2 | 36 | 139 |
| 04:30 PM | 0 | 0 | 92 | 7 | 0 | 43 | 142 |
| 04:45 PM | 0 | 0 | 104 | 7 | 1 | 41 | 153 |
| Total | 0 | 0 | 356 | 26 | 4 | 168 | 554 |
| 05:00 PM | 0 | 0 | 81 | 1 | 0 | 62 | 144 |
| 05:15 PM | 0 | 0 | 135 | 8 | 6 | 45 | 194 |
| 05:30 PM | 0 | 0 | 116 | 8 | 5 | 43 | 172 |
| 05:45 PM | 0 | 0 | 138 | 7 | 1 | 33 | 179 |
| Total | 0 | 0 | 470 | 24 | 12 | 183 | 689 |
| Grand Total | 0 | 0 | 826 | 50 | 16 | 351 | 1243 |
| Apprch % | 0 | 0 | 94.3 | 5.7 | 4.4 | 95.6 | |
| Total % | 0 | 0 | 66.5 | 4 | 1.3 | 28.2 | |
| Cars | 0 | 0 | 824 | 50 | 16 | 347 | 1237 |
| % Cars | 0 | 0 | 99.8 | 100 | 100 | 98.9 | 99.5 |
| Trucks | 0 | 0 | 2 | 0 | 0 | 4 | 6 |
| % Trucks | 0 | 0 | 0.2 | 0 | 0 | 1.1 | 0.5 |

Accurate Counts

978-664-2565

File Name : 35860003

Site Code : 35860003

Start Date : 4/9/2019

Page No : 2

N/S Street : Royal Street
E/W Street: Lincoln Street
City/State : Allston, MA
Weather : Cloudy

| | Royal St From North | | | Lincoln St From East | | | Lincoln St From West | | | |
|--|------------------------|-------|------------|-------------------------|----------|------------|-------------------------|-----------|------------|------------|
| Start Time | Left | Right | App. Total | Thru | Right | App. Total | Left | Thru | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 05:00 PM | | | | | | | | | | |
| 05:00 PM | 0 | 0 | 0 | 81 | 1 | 82 | 0 | 62 | 62 | 144 |
| 05:15 PM | 0 | 0 | 0 | 135 | 8 | 143 | 6 | 45 | 51 | 194 |
| 05:30 PM | 0 | 0 | 0 | 116 | 8 | 124 | 5 | 43 | 48 | 172 |
| 05:45 PM | 0 | 0 | 0 | 138 | 7 | 145 | 1 | 33 | 34 | 179 |
| Total Volume | 0 | 0 | 0 | 470 | 24 | 494 | 12 | 183 | 195 | 689 |
| % App. Total | 0 | 0 | | 95.1 | 4.9 | | 6.2 | 93.8 | | |
| PHF | .000 | .000 | .000 | .851 | .750 | .852 | .500 | .738 | .786 | .888 |
| Cars | 0 | 0 | 0 | 469 | 24 | 493 | 12 | 179 | 191 | 684 |
| % Cars | 0 | 0 | 0 | 99.8 | 100 | 99.8 | 100 | 97.8 | 97.9 | 99.3 |
| Trucks | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 4 | 4 | 5 |
| % Trucks | 0 | 0 | 0 | 0.2 | 0 | 0.2 | 0 | 2.2 | 2.1 | 0.7 |

Accurate Counts

978-664-2565

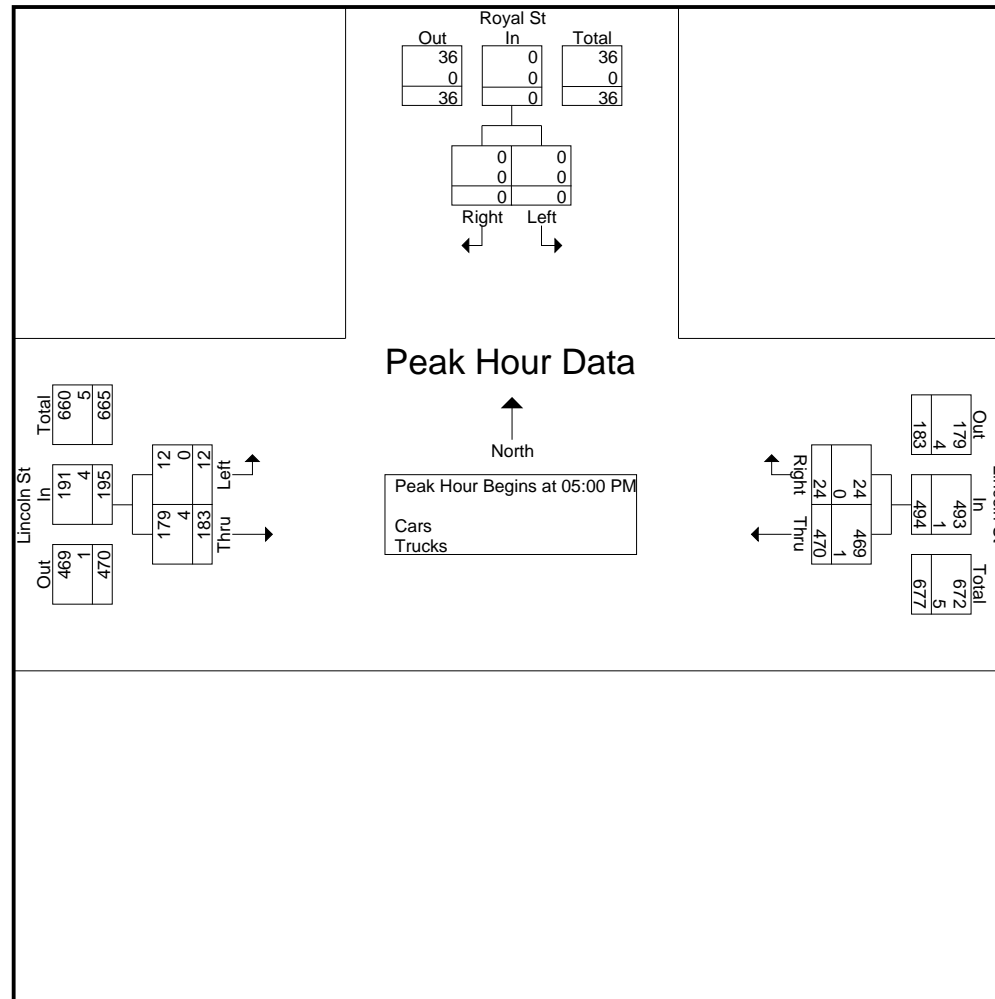
File Name : 35860003

Site Code : 35860003

Start Date : 4/9/2019

Page No : 3

N/S Street : Royal Street
E/W Street: Lincoln Street
City/State : Allston, MA
Weather : Cloudy



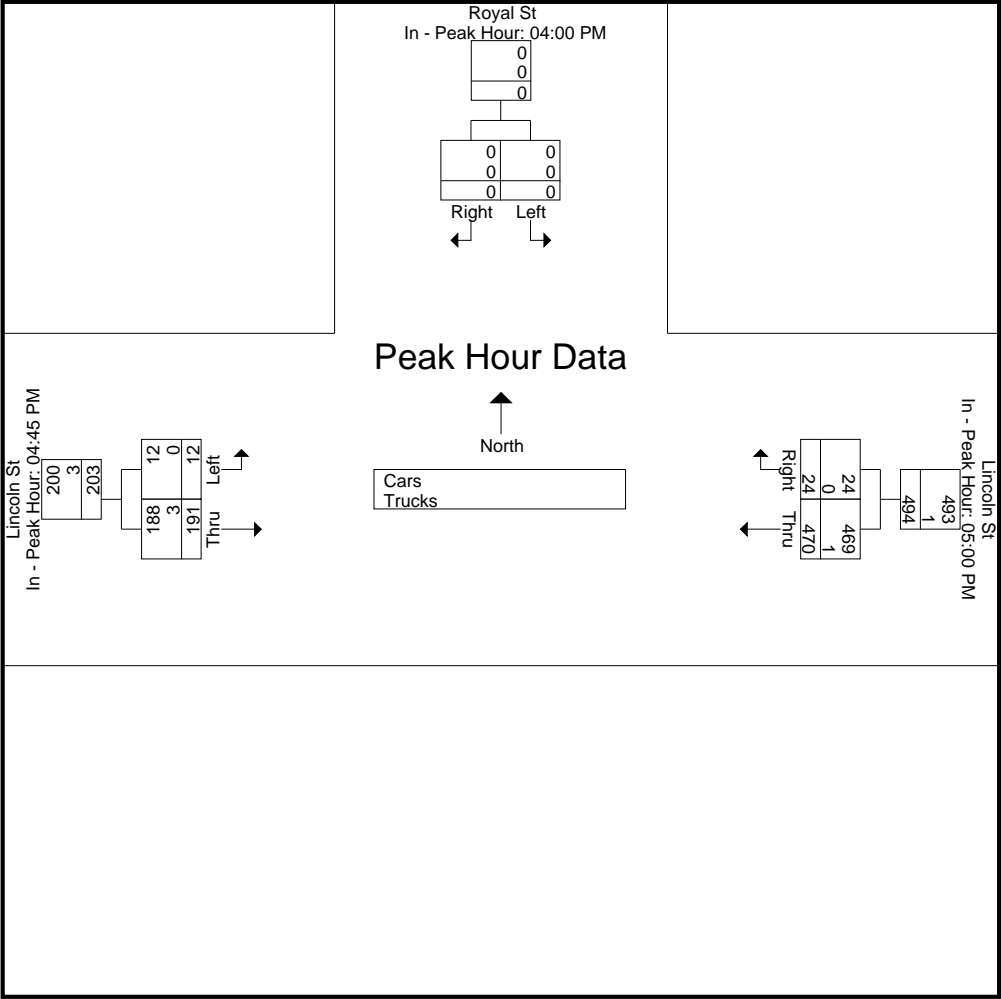
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

| | 04:00 PM | | | 05:00 PM | | | 04:45 PM | | |
|--------------|----------|---|---|------------|----------|------------|----------|-----------|-----------|
| +0 mins. | 0 | 0 | 0 | 81 | 1 | 82 | 1 | 41 | 42 |
| +15 mins. | 0 | 0 | 0 | 135 | 8 | 143 | 0 | 62 | 62 |
| +30 mins. | 0 | 0 | 0 | 116 | 8 | 124 | 6 | 45 | 51 |
| +45 mins. | 0 | 0 | 0 | 138 | 7 | 145 | 5 | 43 | 48 |
| Total Volume | 0 | 0 | 0 | 470 | 24 | 494 | 12 | 191 | 203 |

Accurate Counts
978-664-2565

| | | | | | | | | | |
|--------------|------|------|------|------|------|------|------|------|------|
| % App. Total | 0 | 0 | | 95.1 | 4.9 | | 5.9 | 94.1 | |
| PHF | .000 | .000 | .000 | .851 | .750 | .852 | .500 | .770 | .819 |
| Cars | 0 | 0 | 0 | 469 | 24 | 493 | 12 | 188 | 200 |
| % Cars | 0 | 0 | 0 | 99.8 | 100 | 99.8 | 100 | 98.4 | 98.5 |
| Trucks | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 3 | 3 |
| % Trucks | 0 | 0 | 0 | 0.2 | 0 | 0.2 | 0 | 1.6 | 1.5 |



Accurate Counts

978-664-2565

File Name : 35860003

Site Code : 35860003

Start Date : 4/9/2019

Page No : 5

N/S Street : Royal Street
E/W Street: Lincoln Street
City/State : Allston, MA
Weather : Cloudy

Groups Printed- Cars

| | Royal St From North | | Lincoln St From East | | Lincoln St From West | | |
|-------------|------------------------|-------|-------------------------|-------|-------------------------|------|------------|
| Start Time | Left | Right | Thru | Right | Left | Thru | Int. Total |
| 04:00 PM | 0 | 0 | 64 | 7 | 1 | 48 | 120 |
| 04:15 PM | 0 | 0 | 96 | 5 | 2 | 36 | 139 |
| 04:30 PM | 0 | 0 | 91 | 7 | 0 | 43 | 141 |
| 04:45 PM | 0 | 0 | 104 | 7 | 1 | 41 | 153 |
| Total | 0 | 0 | 355 | 26 | 4 | 168 | 553 |
| 05:00 PM | 0 | 0 | 80 | 1 | 0 | 60 | 141 |
| 05:15 PM | 0 | 0 | 135 | 8 | 6 | 44 | 193 |
| 05:30 PM | 0 | 0 | 116 | 8 | 5 | 43 | 172 |
| 05:45 PM | 0 | 0 | 138 | 7 | 1 | 32 | 178 |
| Total | 0 | 0 | 469 | 24 | 12 | 179 | 684 |
| Grand Total | 0 | 0 | 824 | 50 | 16 | 347 | 1237 |
| Apprch % | 0 | 0 | 94.3 | 5.7 | 4.4 | 95.6 | |
| Total % | 0 | 0 | 66.6 | 4 | 1.3 | 28.1 | |

Accurate Counts

978-664-2565

File Name : 35860003

Site Code : 35860003

Start Date : 4/9/2019

Page No : 6

N/S Street : Royal Street
E/W Street: Lincoln Street
City/State : Allston, MA
Weather : Cloudy

| | Royal St From North | | | Lincoln St From East | | | Lincoln St From West | | | |
|--|------------------------|-------|------------|-------------------------|----------|------------|-------------------------|-----------|------------|------------|
| Start Time | Left | Right | App. Total | Thru | Right | App. Total | Left | Thru | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 05:00 PM | | | | | | | | | | |
| 05:00 PM | 0 | 0 | 0 | 80 | 1 | 81 | 0 | 60 | 60 | 141 |
| 05:15 PM | 0 | 0 | 0 | 135 | 8 | 143 | 6 | 44 | 50 | 193 |
| 05:30 PM | 0 | 0 | 0 | 116 | 8 | 124 | 5 | 43 | 48 | 172 |
| 05:45 PM | 0 | 0 | 0 | 138 | 7 | 145 | 1 | 32 | 33 | 178 |
| Total Volume | 0 | 0 | 0 | 469 | 24 | 493 | 12 | 179 | 191 | 684 |
| % App. Total | 0 | 0 | | 95.1 | 4.9 | | 6.3 | 93.7 | | |
| PHF | .000 | .000 | .000 | .850 | .750 | .850 | .500 | .746 | .796 | .886 |

Accurate Counts

978-664-2565

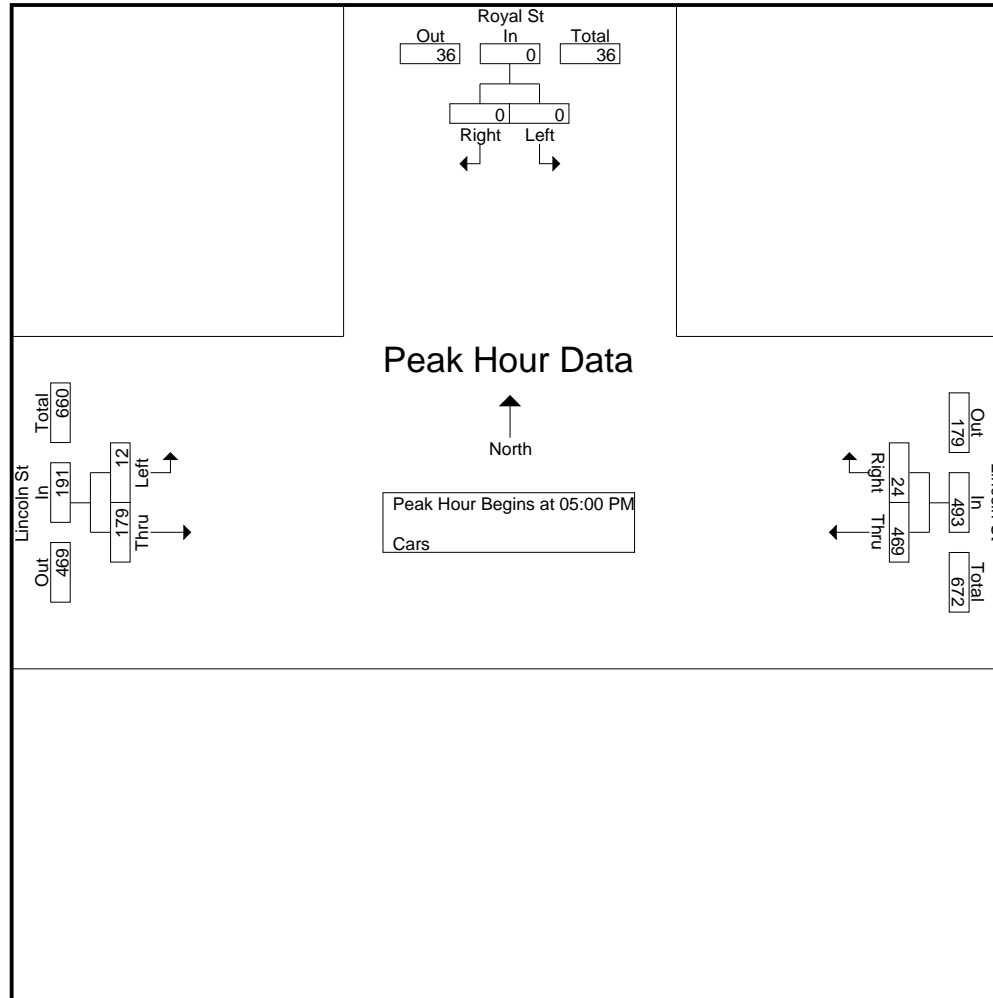
File Name : 35860003

Site Code : 35860003

Start Date : 4/9/2019

Page No : 7

N/S Street : Royal Street
E/W Street: Lincoln Street
City/State : Allston, MA
Weather : Cloudy



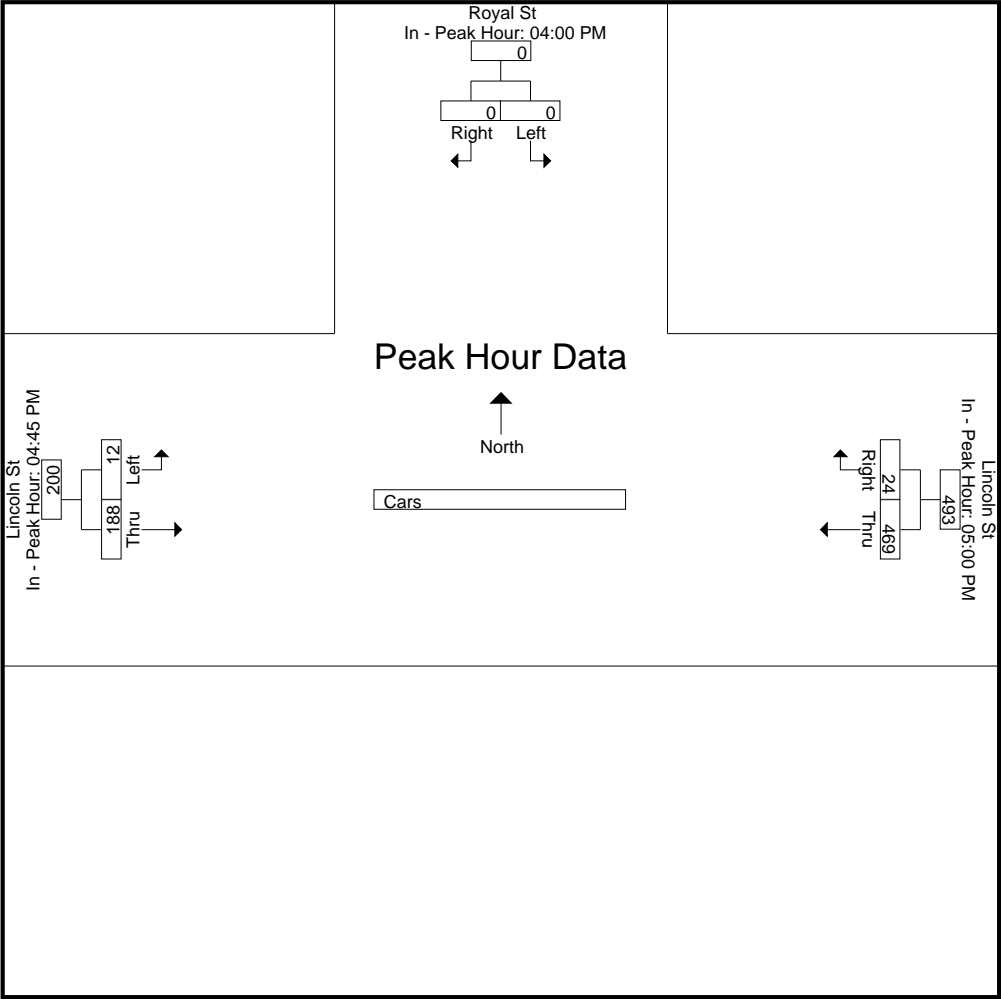
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

| | 04:00 PM | | | 05:00 PM | | | 04:45 PM | | |
|--------------|----------|---|---|----------|----|-----|----------|-----|-----|
| +0 mins. | 0 | 0 | 0 | 80 | 1 | 81 | 1 | 41 | 42 |
| +15 mins. | 0 | 0 | 0 | 135 | 8 | 143 | 0 | 60 | 60 |
| +30 mins. | 0 | 0 | 0 | 116 | 8 | 124 | 6 | 44 | 50 |
| +45 mins. | 0 | 0 | 0 | 138 | 7 | 145 | 5 | 43 | 48 |
| Total Volume | 0 | 0 | 0 | 469 | 24 | 493 | 12 | 188 | 200 |

Accurate Counts
978-664-2565

| | | | | | | |
|--------------|------|------|------|------|------|------|
| % App. Total | 0 | 0 | 95.1 | 4.9 | 6 | 94 |
| PHF | .000 | .000 | .850 | .750 | .500 | .783 |
| | | .000 | | .850 | | .833 |



Accurate Counts

978-664-2565

File Name : 35860003

Site Code : 35860003

Start Date : 4/9/2019

Page No : 9

N/S Street : Royal Street
E/W Street: Lincoln Street
City/State : Allston, MA
Weather : Cloudy

Groups Printed- Trucks

| | Royal St From North | | Lincoln St From East | | Lincoln St From West | | |
|-------------|------------------------|-------|-------------------------|-------|-------------------------|------|------------|
| Start Time | Left | Right | Thru | Right | Left | Thru | Int. Total |
| 04:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:30 PM | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| 05:00 PM | 0 | 0 | 1 | 0 | 0 | 2 | 3 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:45 PM | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| Total | 0 | 0 | 1 | 0 | 0 | 4 | 5 |
| Grand Total | 0 | 0 | 2 | 0 | 0 | 4 | 6 |
| Apprch % | 0 | 0 | 100 | 0 | 0 | 100 | |
| Total % | 0 | 0 | 33.3 | 0 | 0 | 66.7 | |

Accurate Counts

978-664-2565

File Name : 35860003

Site Code : 35860003

Start Date : 4/9/2019

Page No : 10

N/S Street : Royal Street
E/W Street: Lincoln Street
City/State : Allston, MA
Weather : Cloudy

| | Royal St From North | | | Lincoln St From East | | | Lincoln St From West | | | |
|--|------------------------|-------|------------|-------------------------|-------|------------|-------------------------|------|------------|------------|
| Start Time | Left | Right | App. Total | Thru | Right | App. Total | Left | Thru | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:30 PM | | | | | | | | | | |
| 04:30 PM | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:00 PM | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 2 | 3 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| Total Volume | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 3 | 3 | 5 |
| % App. Total | 0 | 0 | | 100 | 0 | | 0 | 100 | | |
| PHF | .000 | .000 | .000 | .500 | .000 | .500 | .000 | .375 | .375 | .417 |

Accurate Counts

978-664-2565

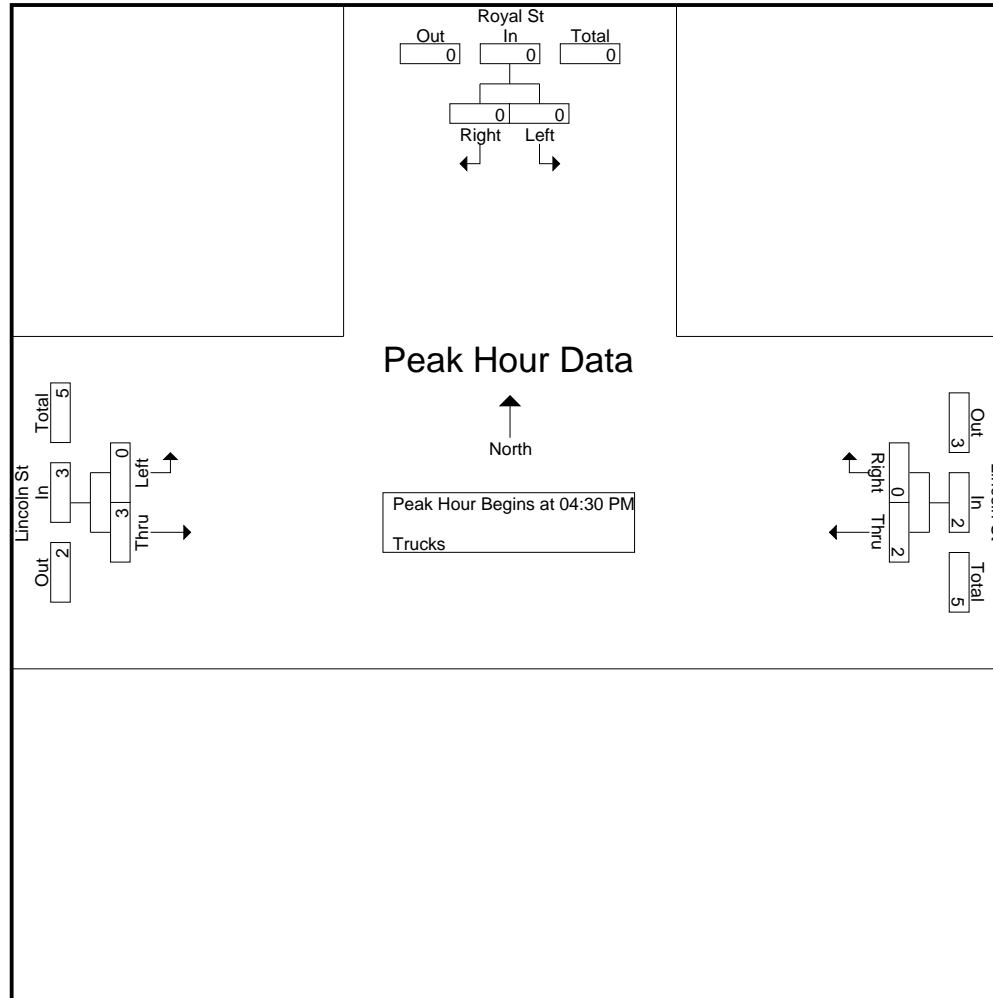
File Name : 35860003

Site Code : 35860003

Start Date : 4/9/2019

Page No : 11

N/S Street : Royal Street
E/W Street: Lincoln Street
City/State : Allston, MA
Weather : Cloudy



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

| | 04:00 PM | | | 04:15 PM | | | 05:00 PM | | |
|--------------|----------|---|---|----------|---|---|----------|-----|---|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 |
| +15 mins. | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 |
| Total Volume | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 4 | 4 |
| % App. Total | 0 | 0 | | 100 | 0 | | 0 | 100 | |

Accurate Counts
978-664-2565

PHF

.000

.000

.000

.500

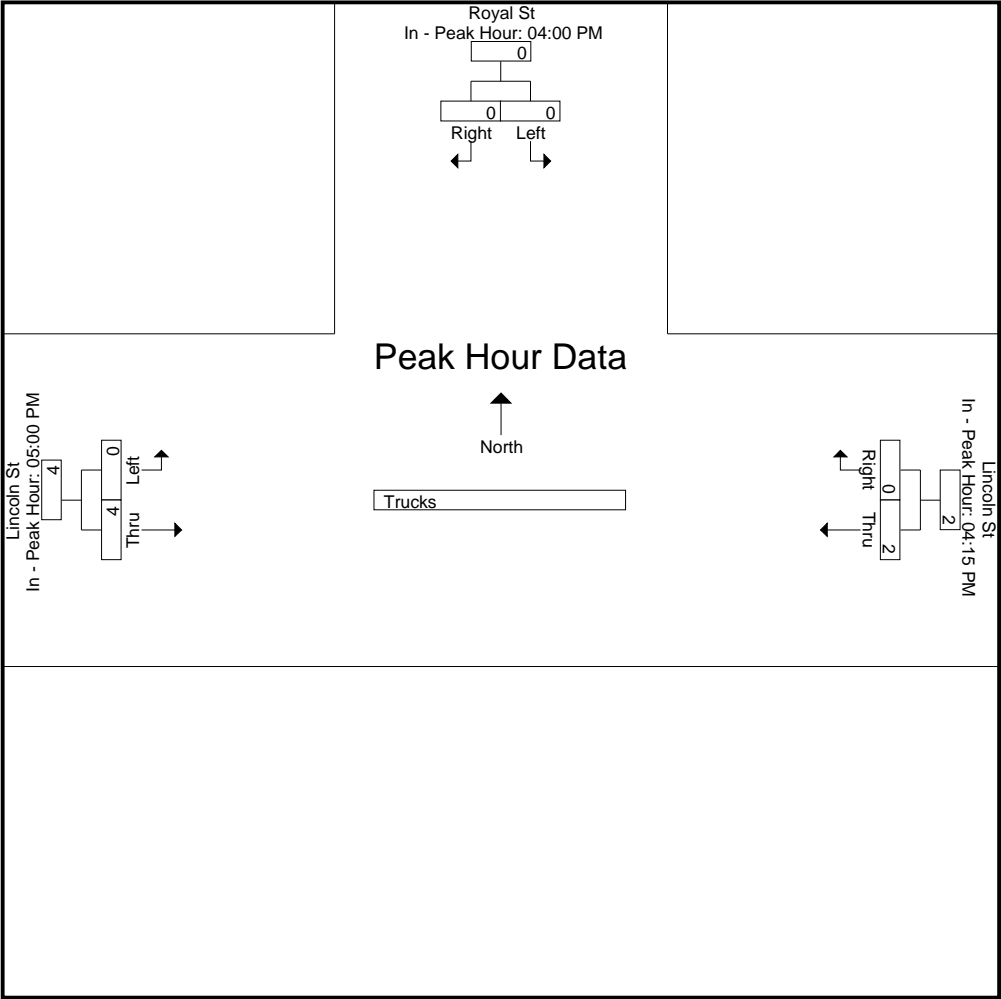
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.500

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.500

.500



Accurate Counts

978-664-2565

N/S Street : Royal Street
E/W Street: Lincoln Street
City/State : Allston, MA
Weather : Cloudy

File Name : 35860003
Site Code : 35860003
Start Date : 4/9/2019
Page No : 13

Groups Printed- Bikes Peds

| | Royal St From North | | | Lincoln St From East | | | Lincoln St From West | | | Exclu. Total | Inclu. Total | Int. Total |
|-------------|------------------------|-------|------|-------------------------|-------|------|-------------------------|------|------|--------------|--------------|------------|
| Start Time | Left | Right | Peds | Thru | Right | Peds | Left | Thru | Peds | | | |
| 04:00 PM | 0 | 0 | 6 | 2 | 0 | 0 | 0 | 1 | 0 | 6 | 3 | 9 |
| 04:15 PM | 0 | 2 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 5 | 6 |
| 04:30 PM | 0 | 0 | 5 | 0 | 0 | 1 | 0 | 1 | 0 | 6 | 1 | 7 |
| 04:45 PM | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 3 | 5 | 1 | 6 |
| Total | 0 | 2 | 13 | 4 | 1 | 2 | 1 | 2 | 3 | 18 | 10 | 28 |
| 05:00 PM | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 |
| 05:15 PM | 0 | 0 | 7 | 0 | 0 | 1 | 1 | 0 | 0 | 8 | 1 | 9 |
| 05:30 PM | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 3 | 9 | 0 | 9 |
| 05:45 PM | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 0 | 1 | 5 | 0 | 5 |
| Total | 0 | 0 | 19 | 0 | 0 | 2 | 1 | 0 | 4 | 25 | 1 | 26 |
| Grand Total | 0 | 2 | 32 | 4 | 1 | 4 | 2 | 2 | 7 | 43 | 11 | 54 |
| Apprch % | 0 | 100 | | 80 | 20 | | 50 | 50 | | | | |
| Total % | 0 | 18.2 | | 36.4 | 9.1 | | 18.2 | 18.2 | | 79.6 | 20.4 | |

Accurate Counts

978-664-2565

File Name : 35860003

Site Code : 35860003

Start Date : 4/9/2019

Page No : 14

N/S Street : Royal Street
E/W Street: Lincoln Street
City/State : Allston, MA
Weather : Cloudy

| | Royal St From North | | | Lincoln St From East | | | Lincoln St From West | | | |
|--|------------------------|-------|------------|-------------------------|-------|------------|-------------------------|------|------------|------------|
| Start Time | Left | Right | App. Total | Thru | Right | App. Total | Left | Thru | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:00 PM | | | | | | | | | | |
| 04:00 PM | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 1 | 1 | 3 |
| 04:15 PM | 0 | 2 | 2 | 1 | 1 | 2 | 1 | 0 | 1 | 5 |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| 04:45 PM | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 |
| Total Volume | 0 | 2 | 2 | 4 | 1 | 5 | 1 | 2 | 3 | 10 |
| % App. Total | 0 | 100 | | 80 | 20 | | 33.3 | 66.7 | | |
| PHF | .000 | .250 | .250 | .500 | .250 | .625 | .250 | .500 | .750 | .500 |

Accurate Counts

978-664-2565

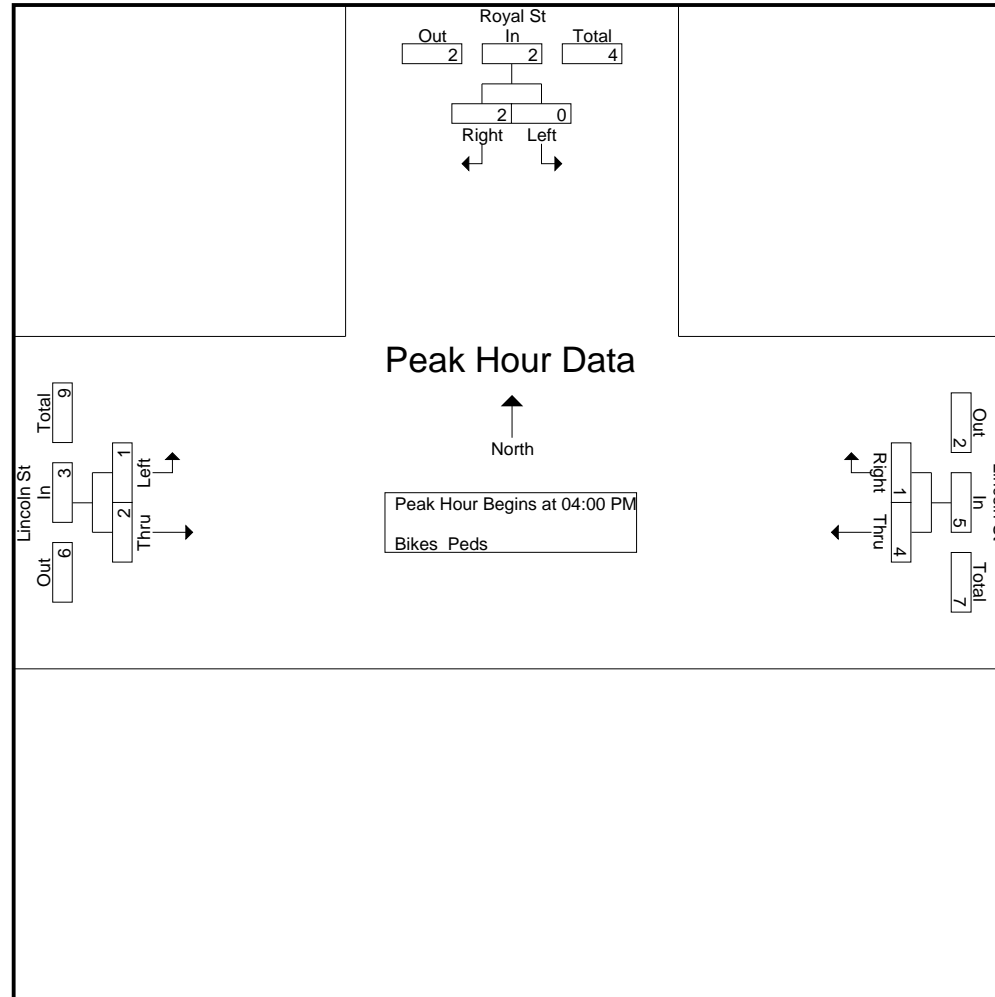
File Name : 35860003

Site Code : 35860003

Start Date : 4/9/2019

Page No : 15

N/S Street : Royal Street
E/W Street: Lincoln Street
City/State : Allston, MA
Weather : Cloudy



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

| | 04:00 PM | | | 04:00 PM | | | 04:00 PM | | |
|--------------|----------|-----|---|----------|----|---|----------|------|---|
| +0 mins. | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 1 | 1 |
| +15 mins. | 0 | 2 | 2 | 1 | 1 | 2 | 1 | 0 | 1 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| +45 mins. | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 |
| Total Volume | 0 | 2 | 2 | 4 | 1 | 5 | 1 | 2 | 3 |
| % App. Total | 0 | 100 | | 80 | 20 | | 33.3 | 66.7 | |

Accurate Counts
978-664-2565

PHF

.000

.250

.250

.500

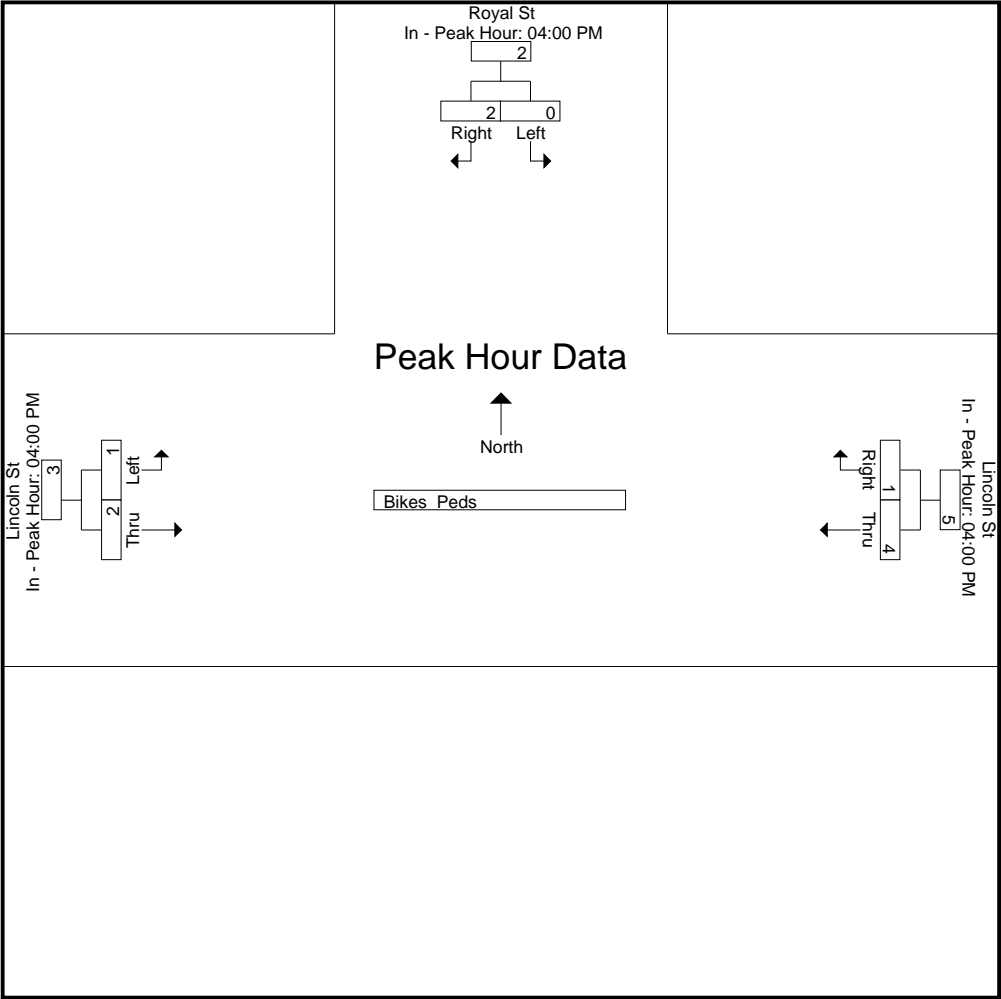
.250

.625

.250

.500

.750



Accurate Counts

978-664-2565

N/S Street : Myrick St / Royal St
E/W Street: Coolidge Road
City/State : Allston, MA
Weather : Cloudy

File Name : 35860004
Site Code : 35860004
Start Date : 4/9/2019
Page No : 1

Groups Printed- Cars - Trucks

| | Myrick St From North | | | Coolidge Rd From East | | | Royal St From South | | | Coolidge Rd From West | | | |
|-------------|-------------------------|------|-------|--------------------------|------|-------|------------------------|------|-------|--------------------------|------|-------|------------|
| Start Time | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Int. Total |
| 07:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 4 | 0 | 4 | 0 | 11 |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 8 | 0 | 7 | 0 | 19 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7 | 0 | 6 | 0 | 15 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 11 | 0 | 7 | 0 | 23 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 30 | 0 | 24 | 0 | 68 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 6 | 0 | 13 | 0 | 23 |
| 08:15 AM | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 4 | 1 | 8 | 0 | 20 |
| 08:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 7 | 1 | 7 | 0 | 18 |
| 08:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 4 | 0 | 2 | 0 | 12 |
| Total | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 18 | 21 | 2 | 30 | 0 | 73 |
| Grand Total | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 32 | 51 | 2 | 54 | 0 | 141 |
| Apprch % | 100 | 0 | 0 | 0 | 0 | 100 | 0 | 38.6 | 61.4 | 3.6 | 96.4 | 0 | |
| Total % | 0.7 | 0 | 0 | 0 | 0 | 0.7 | 0 | 22.7 | 36.2 | 1.4 | 38.3 | 0 | |
| Cars | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 31 | 51 | 2 | 54 | 0 | 140 |
| % Cars | 100 | 0 | 0 | 0 | 0 | 100 | 0 | 96.9 | 100 | 100 | 100 | 0 | 99.3 |
| Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| % Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3.1 | 0 | 0 | 0 | 0 | 0.7 |

Accurate Counts

978-664-2565

File Name : 35860004

Site Code : 35860004

Start Date : 4/9/2019

Page No : 2

N/S Street : Myrick St / Royal St

E/W Street: Coolidge Road

City/State : Allston, MA

Weather : Cloudy

| | Myrick St From North | | | | Coolidge Rd From East | | | | Royal St From South | | | | Coolidge Rd From West | | | | |
|--|-------------------------|------|-------|------------|--------------------------|------|-------|------------|------------------------|------|-------|------------|--------------------------|------|-------|------------|------------|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:45 AM | | | | | | | | | | | | | | | | | |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 11 | 16 | 0 | 7 | 0 | 7 | 23 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 3 | 6 | 9 | 0 | 13 | 0 | 13 | 23 |
| 08:15 AM | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 6 | 4 | 10 | 1 | 8 | 0 | 9 | 20 |
| 08:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 7 | 10 | 1 | 7 | 0 | 8 | 18 |
| Total Volume | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 17 | 28 | 45 | 2 | 35 | 0 | 37 | 84 |
| % App. Total | 100 | 0 | 0 | | 0 | 0 | 100 | | 0 | 37.8 | 62.2 | | 5.4 | 94.6 | 0 | | |
| PHF | .250 | .000 | .000 | .250 | .000 | .000 | .250 | .250 | .000 | .708 | .636 | .703 | .500 | .673 | .000 | .712 | .913 |
| Cars | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 16 | 28 | 44 | 2 | 35 | 0 | 37 | 83 |
| % Cars | 100 | 0 | 0 | 100 | 0 | 0 | 100 | 100 | 0 | 94.1 | 100 | 97.8 | 100 | 100 | 0 | 100 | 98.8 |
| Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| % Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5.9 | 0 | 2.2 | 0 | 0 | 0 | 0 | 1.2 |

Accurate Counts

978-664-2565

File Name : 35860004

Site Code : 35860004

Start Date : 4/9/2019

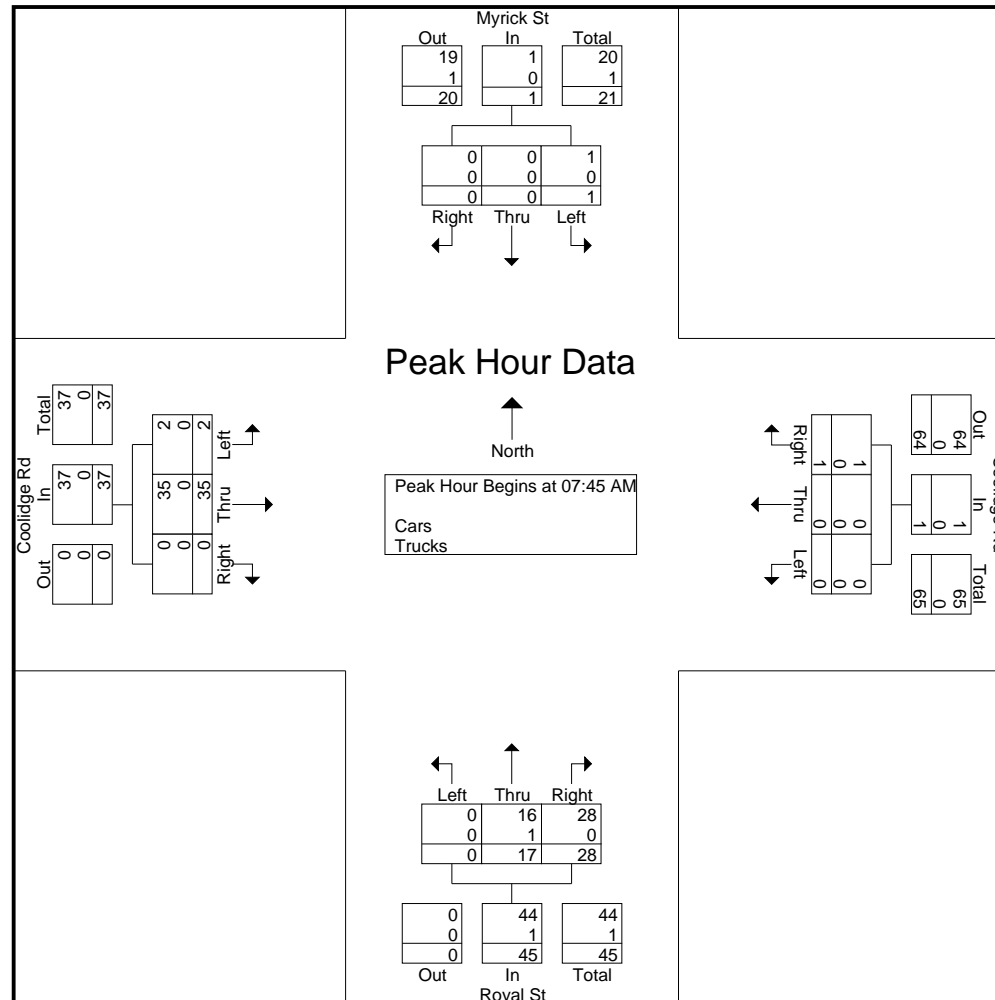
Page No : 3

N/S Street : Myrick St / Royal St

E/W Street: Coolidge Road

City/State : Allston, MA

Weather : Cloudy



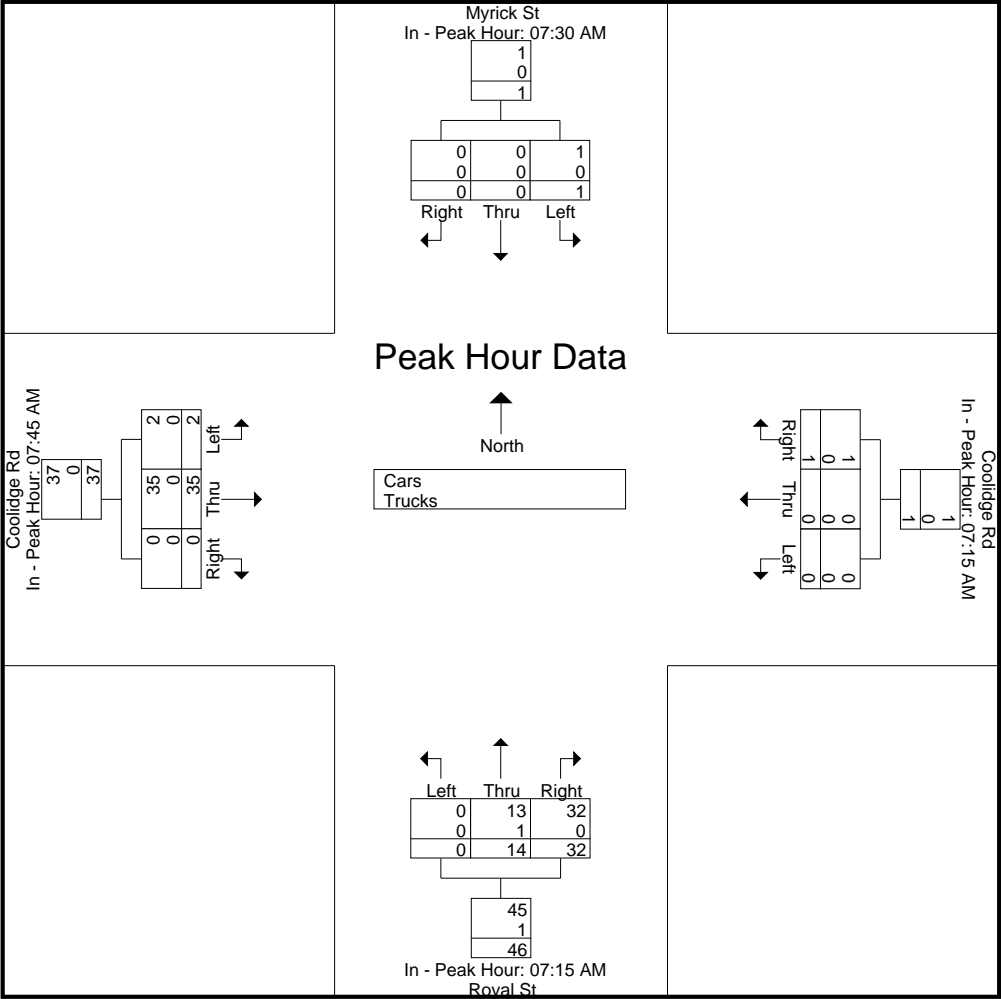
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

| | 07:30 AM | | | | 07:15 AM | | | | 07:15 AM | | | | 07:45 AM | | | |
|--------------|----------|---|---|---|----------|---|---|---|----------|----|----|----|----------|----|---|----|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 8 | 12 | 0 | 7 | 0 | 7 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7 | 9 | 0 | 13 | 0 | 13 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 11 | 16 | 1 | 8 | 0 | 9 |
| +45 mins. | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 3 | 6 | 9 | 1 | 7 | 0 | 8 |
| Total Volume | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 14 | 32 | 46 | 2 | 35 | 0 | 37 |

Accurate Counts
978-664-2565

| | | | | | | | | | | | | | | | | |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| % App. Total | 100 | 0 | 0 | | 0 | 0 | 100 | | 0 | 30.4 | 69.6 | | 5.4 | 94.6 | 0 | |
| PHF | .250 | .000 | .000 | .250 | .000 | .000 | .250 | .250 | .000 | .700 | .727 | .719 | .500 | .673 | .000 | .712 |
| Cars | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 13 | 32 | 45 | 2 | 35 | 0 | 37 |
| % Cars | 100 | 0 | 0 | 100 | 0 | 0 | 100 | 100 | 0 | 92.9 | 100 | 97.8 | 100 | 100 | 0 | 100 |
| Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| % Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7.1 | 0 | 2.2 | 0 | 0 | 0 | 0 |



Accurate Counts

978-664-2565

N/S Street : Myrick St / Royal St
E/W Street: Coolidge Road
City/State : Allston, MA
Weather : Cloudy

File Name : 35860004
Site Code : 35860004
Start Date : 4/9/2019
Page No : 5

Groups Printed- Cars

| | Myrick St From North | | | Coolidge Rd From East | | | Royal St From South | | | Coolidge Rd From West | | | |
|-------------|-------------------------|------|-------|--------------------------|------|-------|------------------------|------|-------|--------------------------|------|-------|------------|
| Start Time | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Int. Total |
| 07:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 4 | 0 | 4 | 0 | 11 |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 8 | 0 | 7 | 0 | 19 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7 | 0 | 6 | 0 | 15 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 11 | 0 | 7 | 0 | 22 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 30 | 0 | 24 | 0 | 67 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 6 | 0 | 13 | 0 | 23 |
| 08:15 AM | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 4 | 1 | 8 | 0 | 20 |
| 08:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 7 | 1 | 7 | 0 | 18 |
| 08:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 4 | 0 | 2 | 0 | 12 |
| Total | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 18 | 21 | 2 | 30 | 0 | 73 |
| Grand Total | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 31 | 51 | 2 | 54 | 0 | 140 |
| Apprch % | 100 | 0 | 0 | 0 | 0 | 100 | 0 | 37.8 | 62.2 | 3.6 | 96.4 | 0 | |
| Total % | 0.7 | 0 | 0 | 0 | 0 | 0.7 | 0 | 22.1 | 36.4 | 1.4 | 38.6 | 0 | |

Accurate Counts

978-664-2565

File Name : 35860004

Site Code : 35860004

Start Date : 4/9/2019

Page No : 6

N/S Street : Myrick St / Royal St

E/W Street: Coolidge Road

City/State : Allston, MA

Weather : Cloudy

| | Myrick St From North | | | | Coolidge Rd From East | | | | Royal St From South | | | | Coolidge Rd From West | | | | |
|--|-------------------------|------|-------|------------|--------------------------|------|-------|------------|------------------------|------|-------|------------|--------------------------|------|-------|------------|------------|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:45 AM | | | | | | | | | | | | | | | | | |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 11 | 15 | 0 | 7 | 0 | 7 | 22 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 3 | 6 | 9 | 0 | 13 | 0 | 13 | 23 |
| 08:15 AM | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 6 | 4 | 10 | 1 | 8 | 0 | 9 | 20 |
| 08:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 7 | 10 | 1 | 7 | 0 | 8 | 18 |
| Total Volume | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 16 | 28 | 44 | 2 | 35 | 0 | 37 | 83 |
| % App. Total | 100 | 0 | 0 | | 0 | 0 | 100 | | 0 | 36.4 | 63.6 | | 5.4 | 94.6 | 0 | | |
| PHF | .250 | .000 | .000 | .250 | .000 | .000 | .250 | .250 | .000 | .667 | .636 | .733 | .500 | .673 | .000 | .712 | .902 |

Accurate Counts

978-664-2565

File Name : 35860004

Site Code : 35860004

Start Date : 4/9/2019

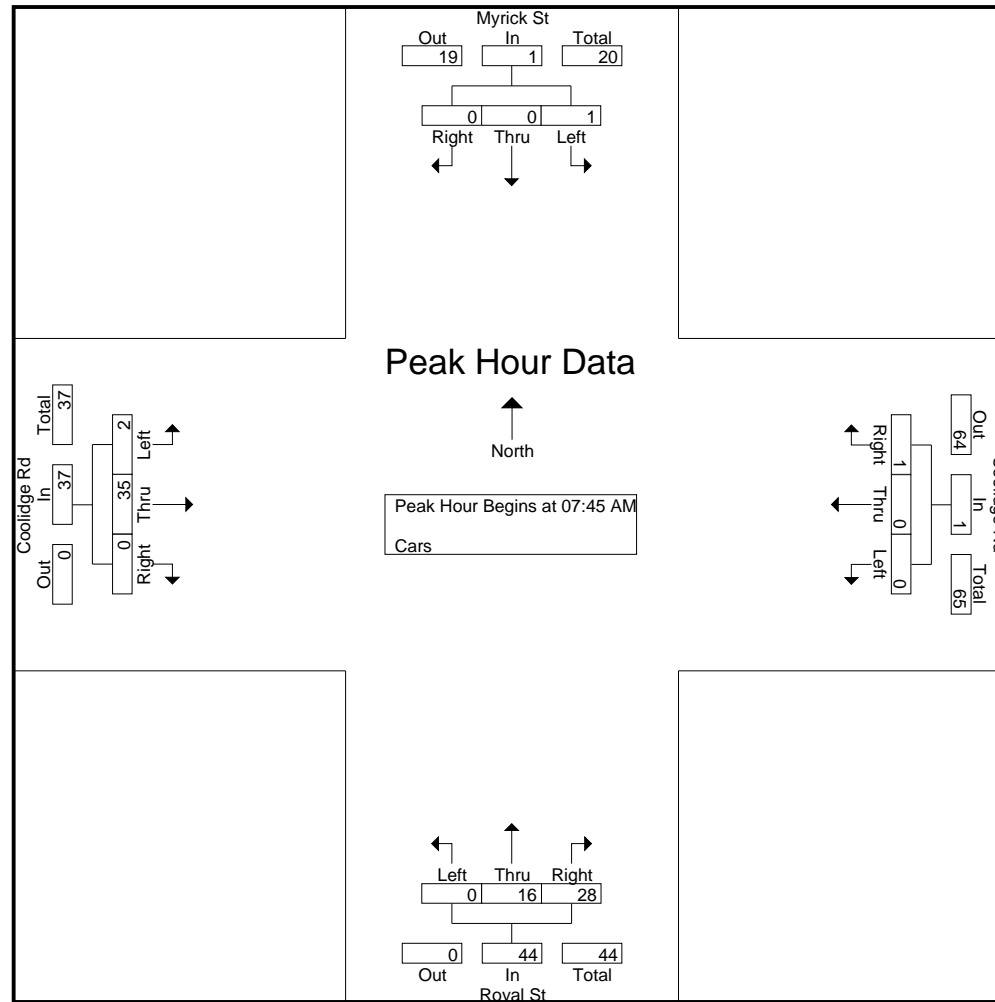
Page No : 7

N/S Street : Myrick St / Royal St

E/W Street: Coolidge Road

City/State : Allston, MA

Weather : Cloudy



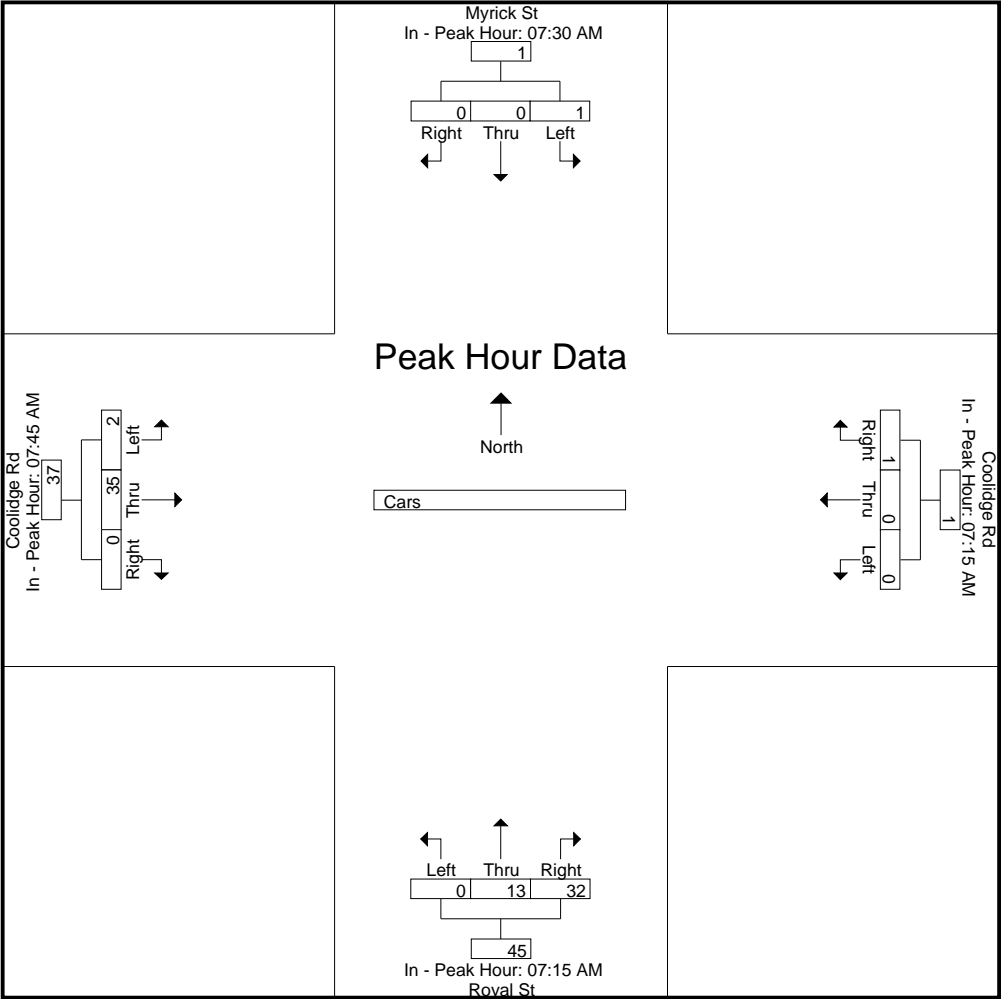
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

| | 07:30 AM | | | | 07:15 AM | | | | 07:15 AM | | | | 07:45 AM | | | |
|--------------|----------|---|---|---|----------|---|-----|---|----------|------|------|----|----------|------|---|----|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 8 | 12 | 0 | 7 | 0 | 7 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7 | 9 | 0 | 13 | 0 | 13 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 11 | 15 | 1 | 8 | 0 | 9 |
| +45 mins. | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 3 | 6 | 9 | 1 | 7 | 0 | 8 |
| Total Volume | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 13 | 32 | 45 | 2 | 35 | 0 | 37 |
| % App. Total | 100 | 0 | 0 | | 0 | 0 | 100 | | 0 | 28.9 | 71.1 | | 5.4 | 94.6 | 0 | |

Accurate Counts
978-664-2565

| | | | | | | | | | | | | | | | | |
|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| PHF | .250 | .000 | .000 | .250 | .000 | .000 | .250 | .250 | .000 | .813 | .727 | .750 | .500 | .673 | .000 | .712 |
|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|



Accurate Counts

978-664-2565

N/S Street : Myrick St / Royal St
E/W Street: Coolidge Road
City/State : Allston, MA
Weather : Cloudy

File Name : 35860004
Site Code : 35860004
Start Date : 4/9/2019
Page No : 9

Groups Printed- Trucks

| | Myrick St From North | | | Coolidge Rd From East | | | Royal St From South | | | Coolidge Rd From West | | | |
|-------------|-------------------------|------|-------|--------------------------|------|-------|------------------------|------|-------|--------------------------|------|-------|------------|
| Start Time | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Int. Total |
| 07:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:45 AM | 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 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| Apprch % | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | |
| Total % | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | |

Accurate Counts

978-664-2565

File Name : 35860004

Site Code : 35860004

Start Date : 4/9/2019

Page No : 10

N/S Street : Myrick St / Royal St

E/W Street: Coolidge Road

City/State : Allston, MA

Weather : Cloudy

| | Myrick St From North | | | | Coolidge Rd From East | | | | Royal St From South | | | | Coolidge Rd From West | | | | |
|--|-------------------------|------|-------|------------|--------------------------|------|-------|------------|------------------------|------|-------|------------|--------------------------|------|-------|------------|------------|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:00 AM | | | | | | | | | | | | | | | | | |
| 07:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| % App. Total | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 100 | 0 | | 0 | 0 | 0 | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .250 | .000 | .250 | .000 | .000 | .000 | .000 | .250 |

Accurate Counts

978-664-2565

File Name : 35860004

Site Code : 35860004

Start Date : 4/9/2019

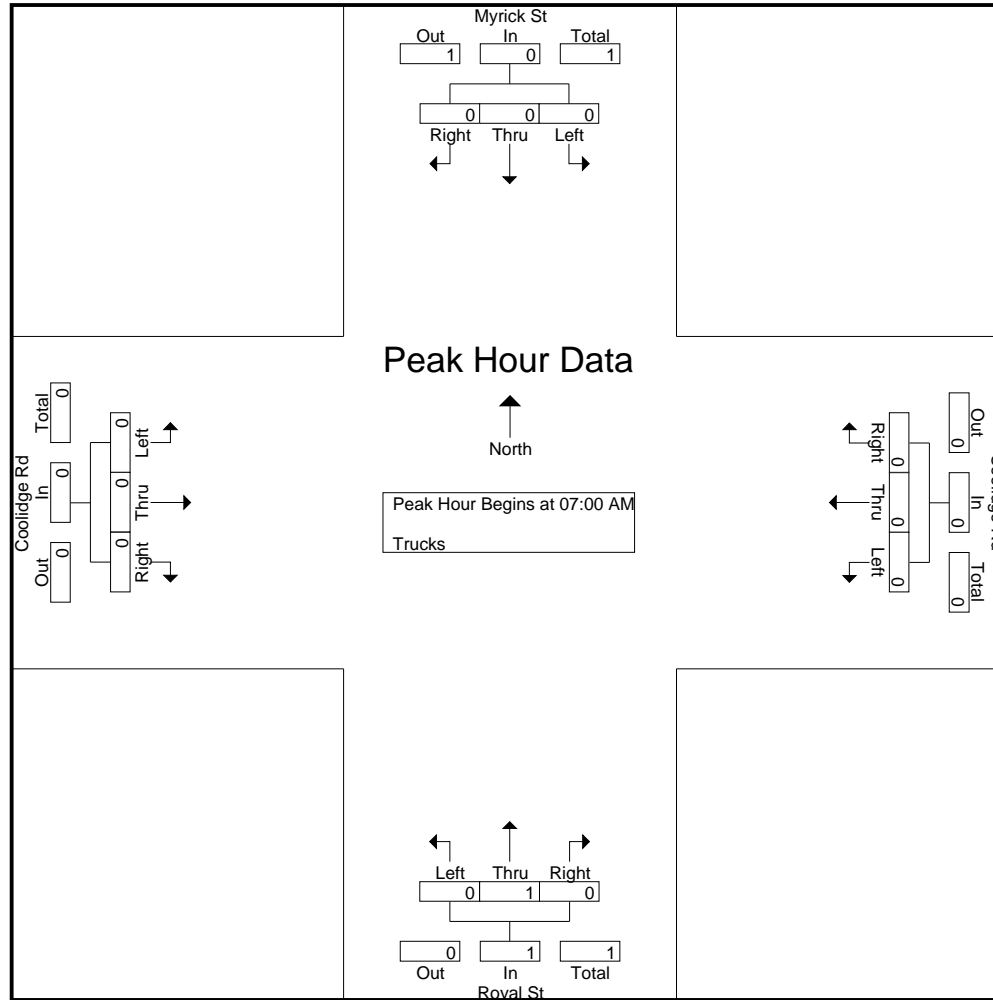
Page No : 11

N/S Street : Myrick St / Royal St

E/W Street: Coolidge Road

City/State : Allston, MA

Weather : Cloudy



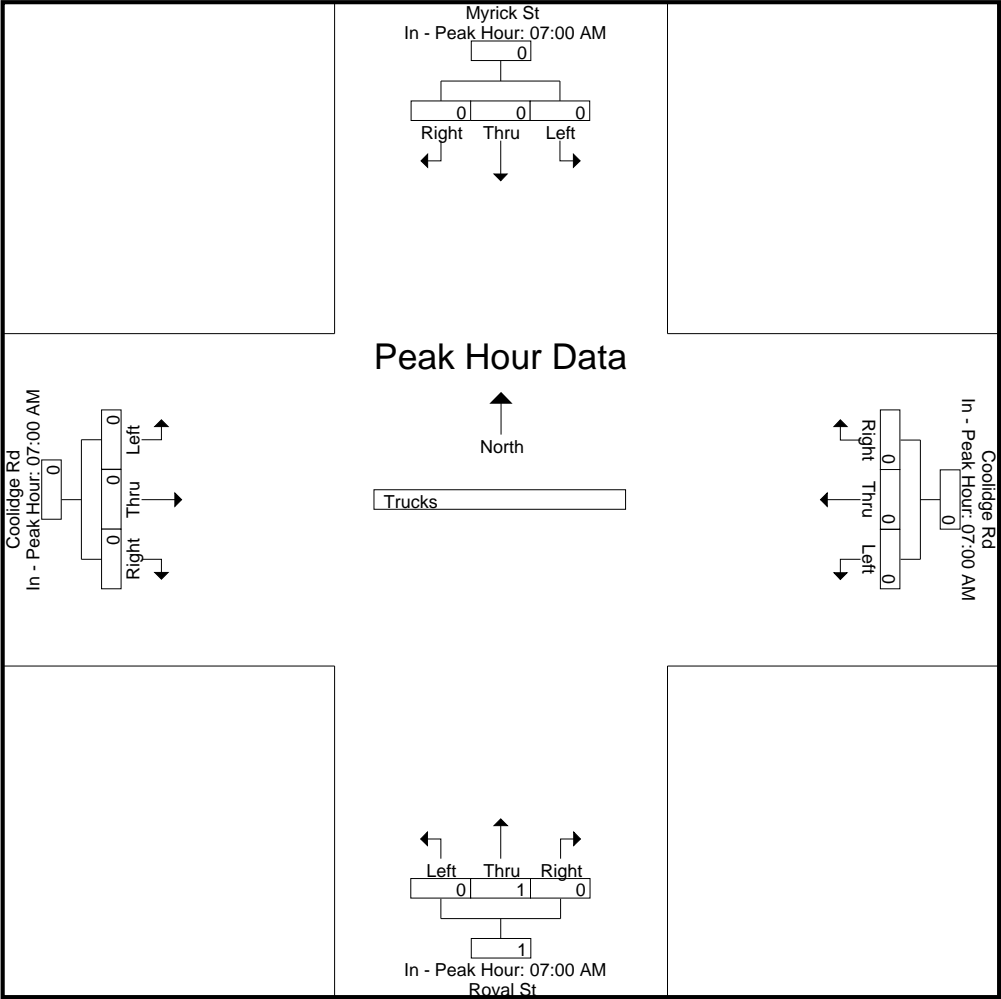
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

| | 07:00 AM | | | | 07:00 AM | | | | 07:00 AM | | | | 07:00 AM | | | |
|--------------|----------|---|---|---|----------|---|---|---|----------|---|---|---|----------|---|---|---|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 |

Accurate Counts
978-664-2565

| | | | | | | | | | | | | | | | | |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| % App. Total | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 100 | 0 | | 0 | 0 | 0 | |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .250 | .000 | .250 | .000 | .000 | .000 | .000 |



Accurate Counts

978-664-2565

File Name : 35860004

Site Code : 35860004

Start Date : 4/9/2019

Page No : 13

N/S Street : Myrick St / Royal St

E/W Street: Coolidge Road

City/State : Allston, MA

Weather : Cloudy

Groups Printed- Bikes Peds

| | Myrick St From North | | | | Coolidge Rd From East | | | | Royal St From South | | | | Coolidge Rd From West | | | | Exclu. Total | Inclu. Total | Int. Total |
|-------------|-------------------------|------|-------|------|--------------------------|------|-------|------|------------------------|------|-------|------|--------------------------|------|-------|------|--------------|--------------|------------|
| Start Time | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | | | |
| 07:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 6 | 0 | 6 |
| 07:15 AM | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 1 | 8 | 0 | 8 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 5 | 0 | 5 |
| 07:45 AM | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| Total | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 3 | 21 | 0 | 21 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 3 | 1 | 4 |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 5 | 9 | 1 | 10 |
| 08:30 AM | 0 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 0 | 1 | 0 | 0 | 6 | 4 | 10 |
| 08:45 AM | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 2 | 0 | 2 | 0 | 2 | 1 | 0 | 0 | 2 | 6 | 5 | 11 |
| Total | 0 | 0 | 1 | 3 | 1 | 2 | 0 | 7 | 0 | 2 | 2 | 7 | 1 | 2 | 0 | 7 | 24 | 11 | 35 |
| Grand Total | 0 | 0 | 1 | 5 | 1 | 2 | 0 | 14 | 0 | 2 | 2 | 16 | 1 | 2 | 0 | 10 | 45 | 11 | 56 |
| Apprch % | 0 | 0 | 100 | | 33.3 | 66.7 | 0 | | 0 | 50 | 50 | | 33.3 | 66.7 | 0 | | | | |
| Total % | 0 | 0 | 9.1 | | 9.1 | 18.2 | 0 | | 0 | 18.2 | 18.2 | | 9.1 | 18.2 | 0 | | 80.4 | 19.6 | |

Accurate Counts

978-664-2565

File Name : 35860004

Site Code : 35860004

Start Date : 4/9/2019

Page No : 14

N/S Street : Myrick St / Royal St

E/W Street: Coolidge Road

City/State : Allston, MA

Weather : Cloudy

| | Myrick St From North | | | | Coolidge Rd From East | | | | Royal St From South | | | | Coolidge Rd From West | | | | |
|--|-------------------------|------|-------|------------|--------------------------|------|-------|------------|------------------------|------|-------|------------|--------------------------|------|-------|------------|------------|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 08:00 AM | | | | | | | | | | | | | | | | | |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| 08:30 AM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 2 | 2 | 0 | 1 | 0 | 1 | 4 |
| 08:45 AM | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 2 | 1 | 0 | 0 | 1 | 5 |
| Total Volume | 0 | 0 | 1 | 1 | 1 | 2 | 0 | 3 | 0 | 2 | 2 | 4 | 1 | 2 | 0 | 3 | 11 |
| % App. Total | 0 | 0 | 100 | | 33.3 | 66.7 | 0 | | 0 | 50 | 50 | | 33.3 | 66.7 | 0 | | |
| PHF | .000 | .000 | .250 | .250 | .250 | .500 | .000 | .750 | .000 | .250 | .250 | .500 | .250 | .500 | .000 | .750 | .550 |

Accurate Counts

978-664-2565

File Name : 35860004

Site Code : 35860004

Start Date : 4/9/2019

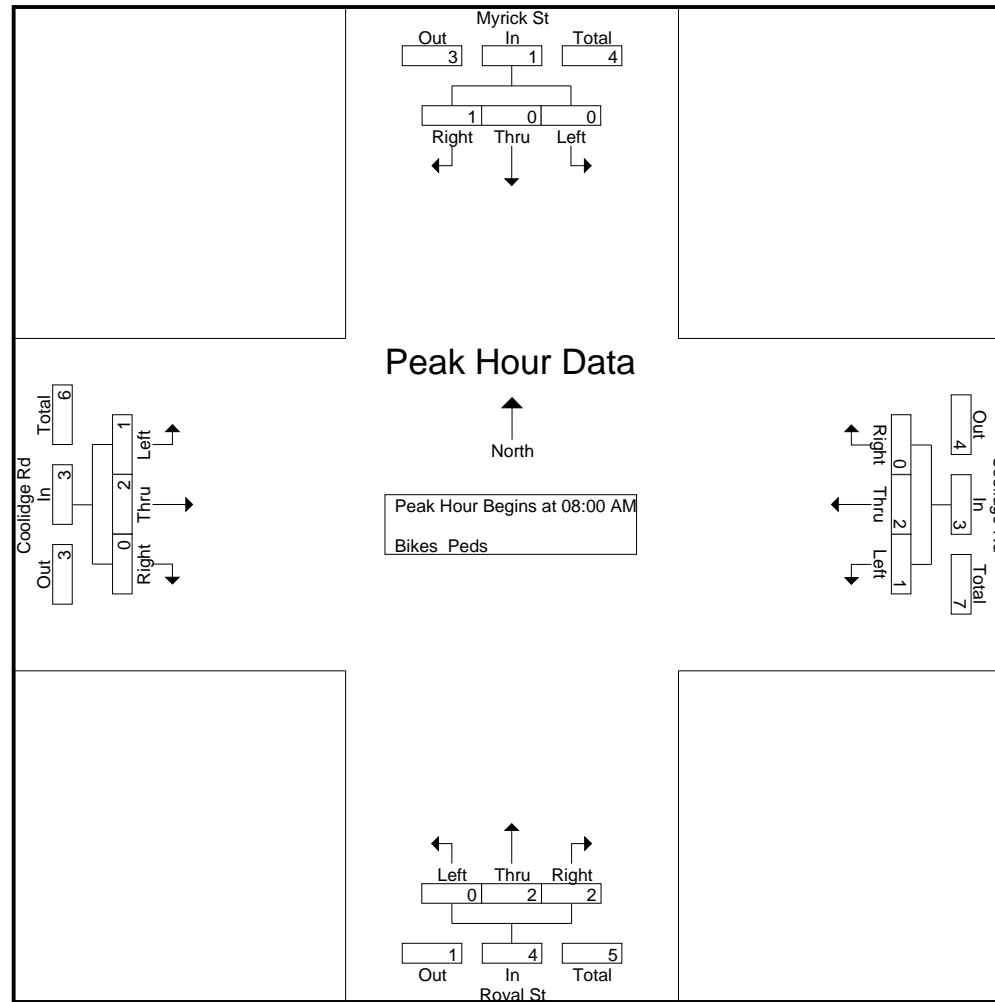
Page No : 15

N/S Street : Myrick St / Royal St

E/W Street: Coolidge Road

City/State : Allston, MA

Weather : Cloudy



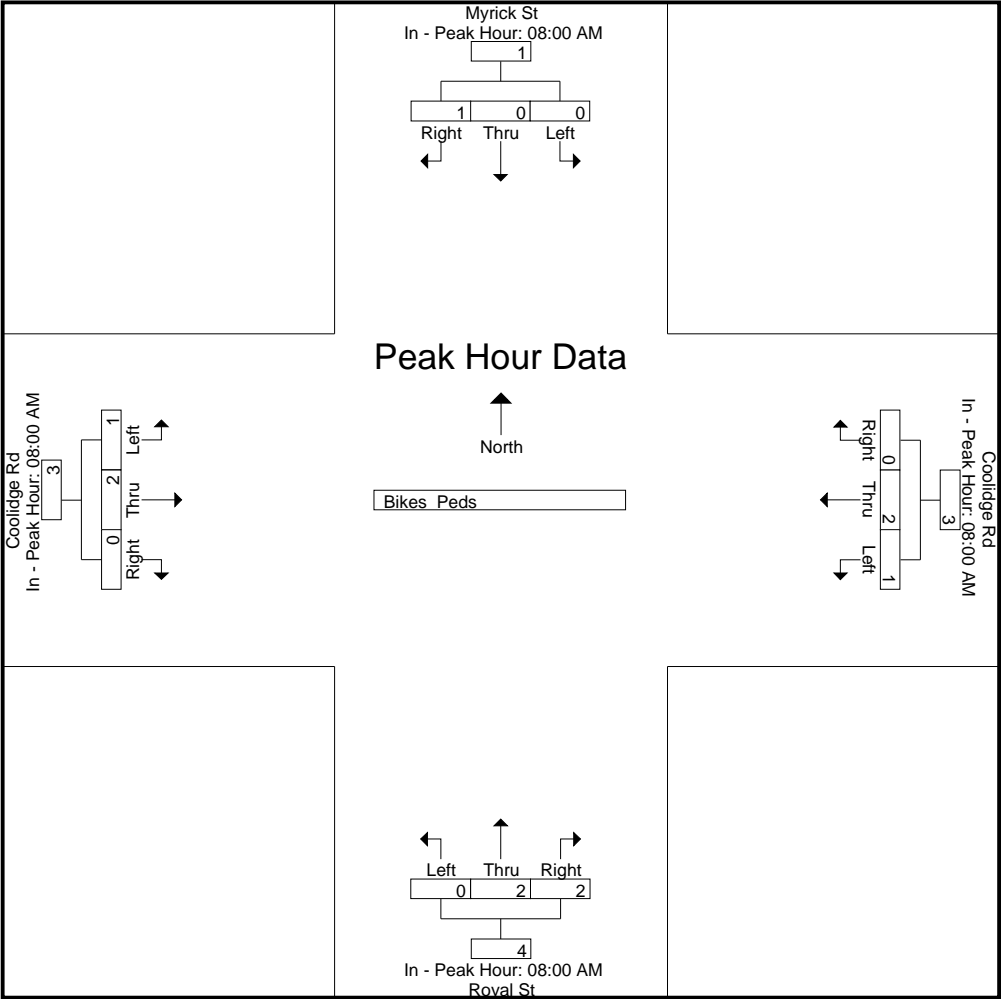
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

| | 08:00 AM | | | | 08:00 AM | | | | 08:00 AM | | | | 08:00 AM | | | |
|--------------|----------|---|-----|---|----------|------|---|---|----------|----|----|---|----------|------|---|---|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| +30 mins. | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 2 | 2 | 0 | 1 | 0 | 1 |
| +45 mins. | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 2 | 1 | 0 | 0 | 1 |
| Total Volume | 0 | 0 | 1 | 1 | 1 | 2 | 0 | 3 | 0 | 2 | 2 | 4 | 1 | 2 | 0 | 3 |
| % App. Total | 0 | 0 | 100 | | 33.3 | 66.7 | 0 | | 0 | 50 | 50 | | 33.3 | 66.7 | 0 | |

Accurate Counts
978-664-2565

| | | | | | | | | | | | | | | | | |
|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| PHF | .000 | .000 | .250 | .250 | .250 | .500 | .000 | .750 | .000 | .250 | .250 | .500 | .250 | .500 | .000 | .750 |
|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|



Accurate Counts

978-664-2565

N/S Street : Myrick St / Royal St
E/W Street: Coolidge Road
City/State : Allston, MA
Weather : Cloudy

File Name : 35860004
Site Code : 35860004
Start Date : 4/9/2019
Page No : 1

Groups Printed- Cars - Trucks

| | Myrick St From North | | | Coolidge Rd From East | | | Royal St From South | | | Coolidge Rd From West | | | |
|-------------|-------------------------|------|-------|--------------------------|------|-------|------------------------|------|-------|--------------------------|------|-------|------------|
| Start Time | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Int. Total |
| 04:00 PM | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 8 | 0 | 4 | 0 | 19 |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 7 | 1 | 5 | 0 | 19 |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 5 | 1 | 5 | 0 | 15 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 7 | 2 | 7 | 0 | 24 |
| Total | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | 27 | 4 | 21 | 0 | 77 |
| 05:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7 | 1 | 7 | 0 | 17 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 12 | 1 | 5 | 0 | 24 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 9 | 0 | 7 | 0 | 25 |
| 05:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 15 | 1 | 6 | 0 | 28 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | 43 | 3 | 25 | 0 | 94 |
| Grand Total | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 47 | 70 | 7 | 46 | 0 | 171 |
| Apprch % | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 40.2 | 59.8 | 13.2 | 86.8 | 0 | |
| Total % | 0.6 | 0 | 0 | 0 | 0 | 0 | 0 | 27.5 | 40.9 | 4.1 | 26.9 | 0 | |
| Cars | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 47 | 69 | 7 | 46 | 0 | 170 |
| % Cars | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 98.6 | 100 | 100 | 0 | 99.4 |
| Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| % Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1.4 | 0 | 0 | 0 | 0.6 |

978-664-2565

Page No : 2

Weather : Cloudy

[illegible]

Accurate Counts

978-664-2565

File Name : 35860004

Site Code : 35860004

Start Date : 4/9/2019

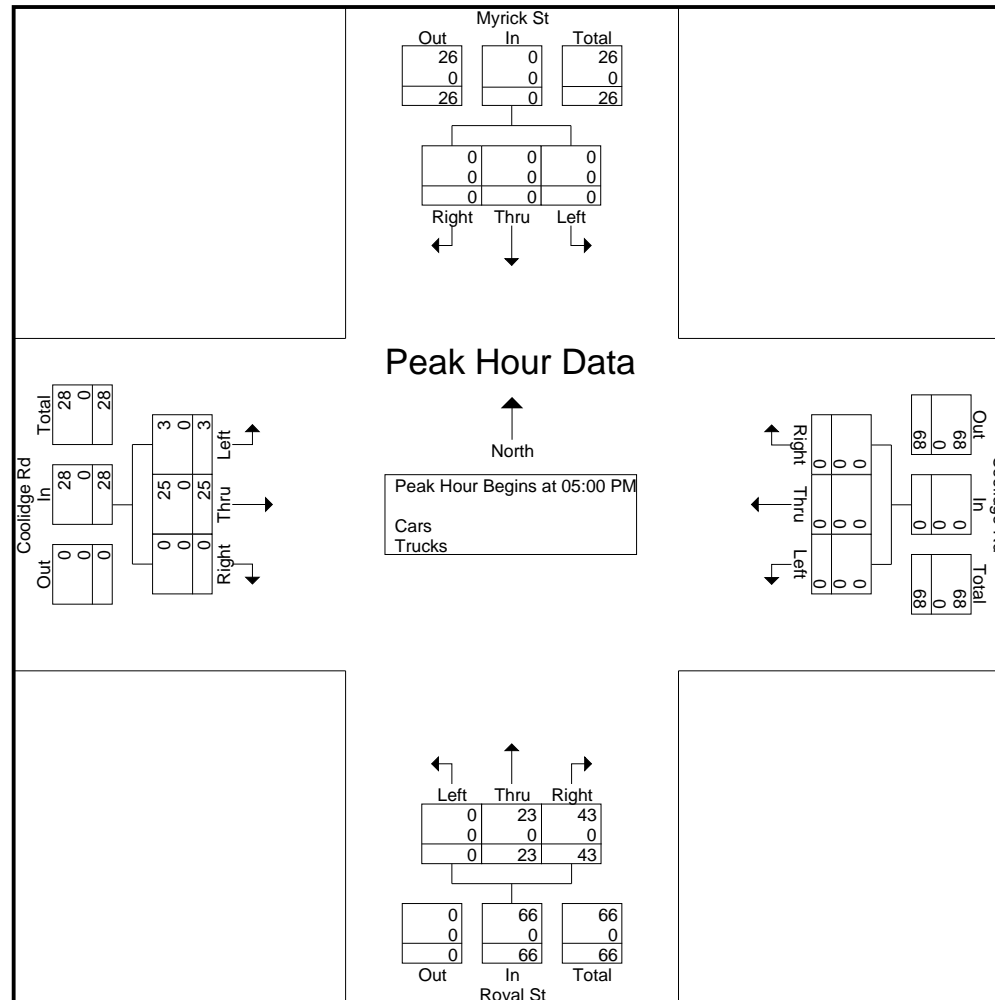
Page No : 3

N/S Street : Myrick St / Royal St

E/W Street: Coolidge Road

City/State : Allston, MA

Weather : Cloudy



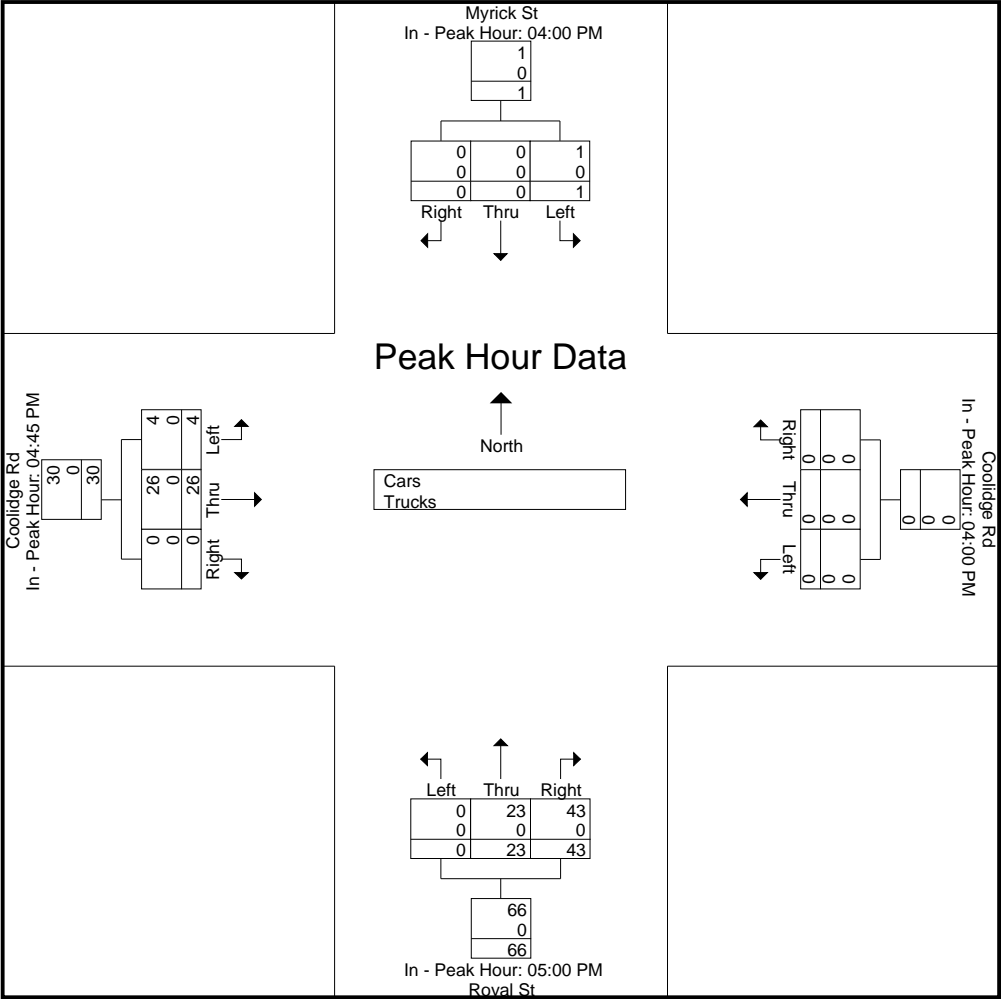
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

| | 04:00 PM | | | | 04:00 PM | | | | 05:00 PM | | | | 04:45 PM | | | |
|--------------|----------|---|---|---|----------|---|---|---|----------|------|------|----|----------|------|---|----|
| +0 mins. | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 7 | 9 | 2 | 7 | 0 | 9 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 12 | 18 | 1 | 7 | 0 | 8 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 9 | 18 | 1 | 5 | 0 | 6 |
| +45 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 15 | 21 | 0 | 7 | 0 | 7 |
| Total Volume | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 23 | 43 | 66 | 4 | 26 | 0 | 30 |
| % App. Total | 100 | 0 | 0 | | 0 | 0 | 0 | | 0 | 34.8 | 65.2 | | 13.3 | 86.7 | 0 | |

Accurate Counts
978-664-2565

| PHF | .250 | .000 | .000 | .250 | .000 | .000 | .000 | .000 | .000 | .639 | .717 | .786 | .500 | .929 | .000 | .833 |
|----------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Cars | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 23 | 43 | 66 | 4 | 26 | 0 | 30 |
| % Cars | 100 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 100 | 100 | 100 | 100 | 100 | 0 | 100 |
| Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



Accurate Counts

978-664-2565

N/S Street : Myrick St / Royal St
E/W Street: Coolidge Road
City/State : Allston, MA
Weather : Cloudy

File Name : 35860004
Site Code : 35860004
Start Date : 4/9/2019
Page No : 5

Groups Printed- Cars

| | Myrick St From North | | | Coolidge Rd From East | | | Royal St From South | | | Coolidge Rd From West | | | |
|-------------|-------------------------|------|-------|--------------------------|------|-------|------------------------|------|-------|--------------------------|------|-------|------------|
| Start Time | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Int. Total |
| 04:00 PM | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 8 | 0 | 4 | 0 | 19 |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 7 | 1 | 5 | 0 | 19 |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 1 | 5 | 0 | 14 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 7 | 2 | 7 | 0 | 24 |
| Total | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | 26 | 4 | 21 | 0 | 76 |
| 05:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7 | 1 | 7 | 0 | 17 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 12 | 1 | 5 | 0 | 24 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 9 | 0 | 7 | 0 | 25 |
| 05:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 15 | 1 | 6 | 0 | 28 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | 43 | 3 | 25 | 0 | 94 |
| Grand Total | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 47 | 69 | 7 | 46 | 0 | 170 |
| Apprch % | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 40.5 | 59.5 | 13.2 | 86.8 | 0 | |
| Total % | 0.6 | 0 | 0 | 0 | 0 | 0 | 0 | 27.6 | 40.6 | 4.1 | 27.1 | 0 | |

Accurate Counts

978-664-2565

File Name : 35860004

Site Code : 35860004

Start Date : 4/9/2019

Page No : 6

N/S Street : Myrick St / Royal St

E/W Street: Coolidge Road

City/State : Allston, MA

Weather : Cloudy

| | Myrick St From North | | | | Coolidge Rd From East | | | | Royal St From South | | | | Coolidge Rd From West | | | | |
|--|-------------------------|------|-------|------------|--------------------------|------|-------|------------|------------------------|------|-------|------------|--------------------------|------|-------|------------|------------|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 05:00 PM | | | | | | | | | | | | | | | | | |
| 05:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7 | 9 | 1 | 7 | 0 | 8 | 17 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 12 | 18 | 1 | 5 | 0 | 6 | 24 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 9 | 18 | 0 | 7 | 0 | 7 | 25 |
| 05:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 15 | 21 | 1 | 6 | 0 | 7 | 28 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | 43 | 66 | 3 | 25 | 0 | 28 | 94 |
| % App. Total | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 34.8 | 65.2 | | 10.7 | 89.3 | 0 | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .639 | .717 | .786 | .750 | .893 | .000 | .875 | .839 |

Accurate Counts

978-664-2565

File Name : 35860004

Site Code : 35860004

Start Date : 4/9/2019

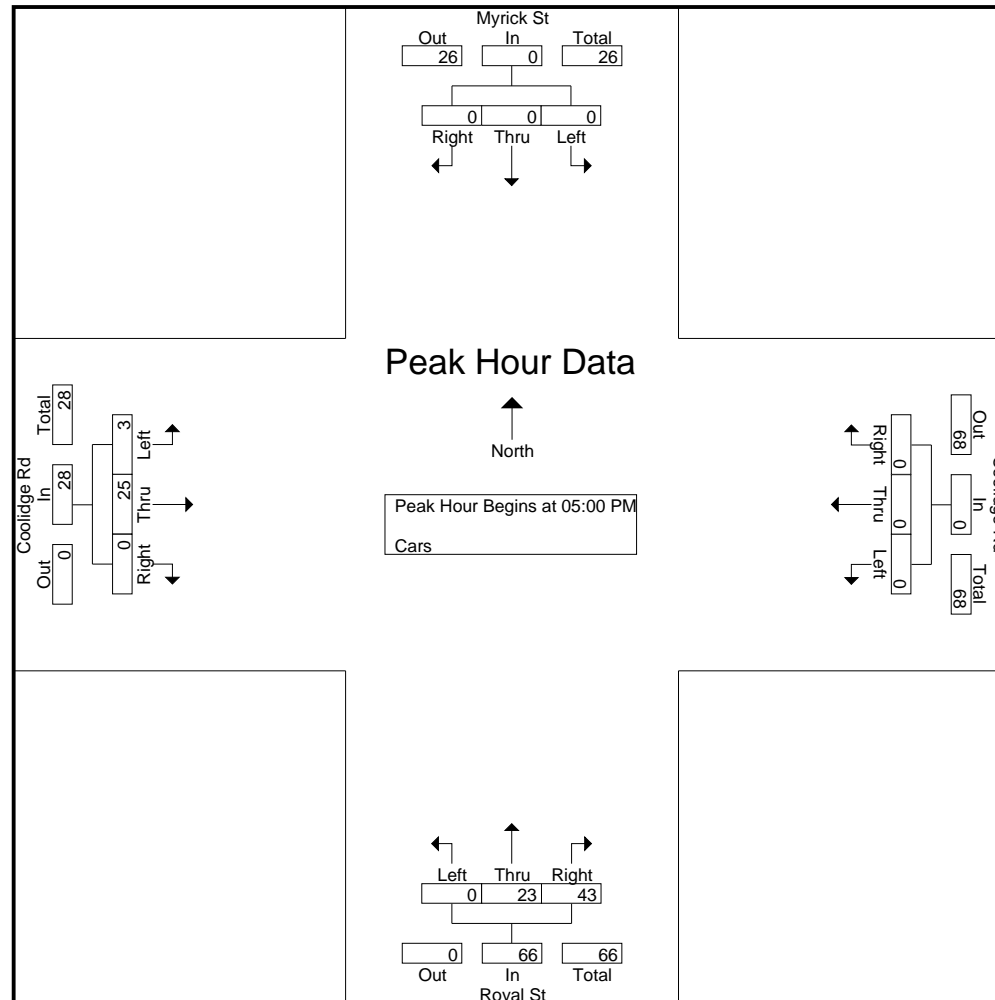
Page No : 7

N/S Street : Myrick St / Royal St

E/W Street: Coolidge Road

City/State : Allston, MA

Weather : Cloudy



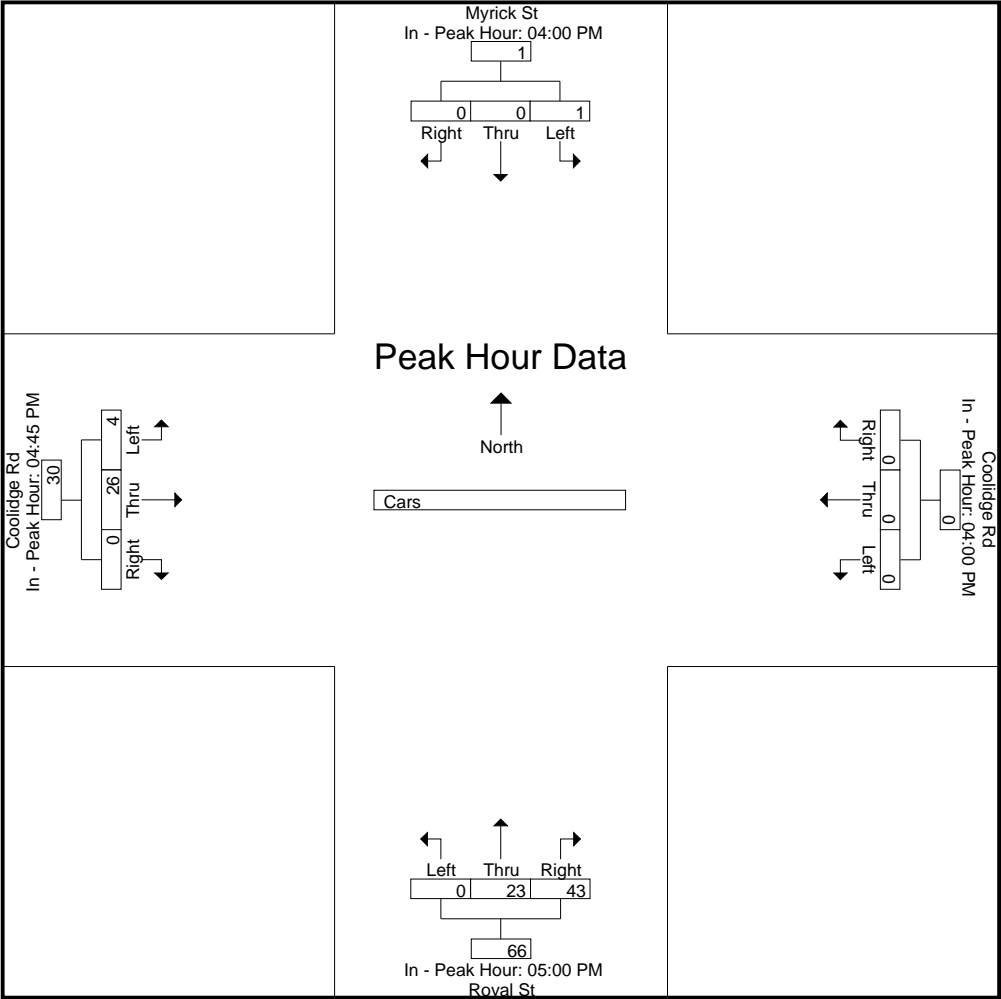
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

| | 04:00 PM | | | | 04:00 PM | | | | 05:00 PM | | | | 04:45 PM | | | |
|--------------|----------|---|---|---|----------|---|---|---|----------|------|------|----|----------|------|---|----|
| +0 mins. | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 7 | 9 | 2 | 7 | 0 | 9 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 12 | 18 | 1 | 7 | 0 | 8 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 9 | 18 | 1 | 5 | 0 | 6 |
| +45 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 15 | 21 | 0 | 7 | 0 | 7 |
| Total Volume | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 23 | 43 | 66 | 4 | 26 | 0 | 30 |
| % App. Total | 100 | 0 | 0 | | 0 | 0 | 0 | | 0 | 34.8 | 65.2 | | 13.3 | 86.7 | 0 | |

Accurate Counts
978-664-2565

| | | | | | | | | | | | | | | | | | |
|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| PHF | .250 | .000 | .000 | .250 | .000 | .000 | .000 | .000 | .000 | .000 | .639 | .717 | .786 | .500 | .929 | .000 | .833 |
|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|



Accurate Counts

978-664-2565

N/S Street : Myrick St / Royal St
E/W Street: Coolidge Road
City/State : Allston, MA
Weather : Cloudy

File Name : 35860004
Site Code : 35860004
Start Date : 4/9/2019
Page No : 9

Groups Printed- Trucks

| | Myrick St From North | | | Coolidge Rd From East | | | Royal St From South | | | Coolidge Rd From West | | | |
|-------------|-------------------------|------|-------|--------------------------|------|-------|------------------------|------|-------|--------------------------|------|-------|------------|
| Start Time | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Int. Total |
| 04:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| 05:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:45 PM | 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 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| Apprch % | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | |
| Total % | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | |

Accurate Counts

978-664-2565

File Name : 35860004

Site Code : 35860004

Start Date : 4/9/2019

Page No : 10

N/S Street : Myrick St / Royal St

E/W Street: Coolidge Road

City/State : Allston, MA

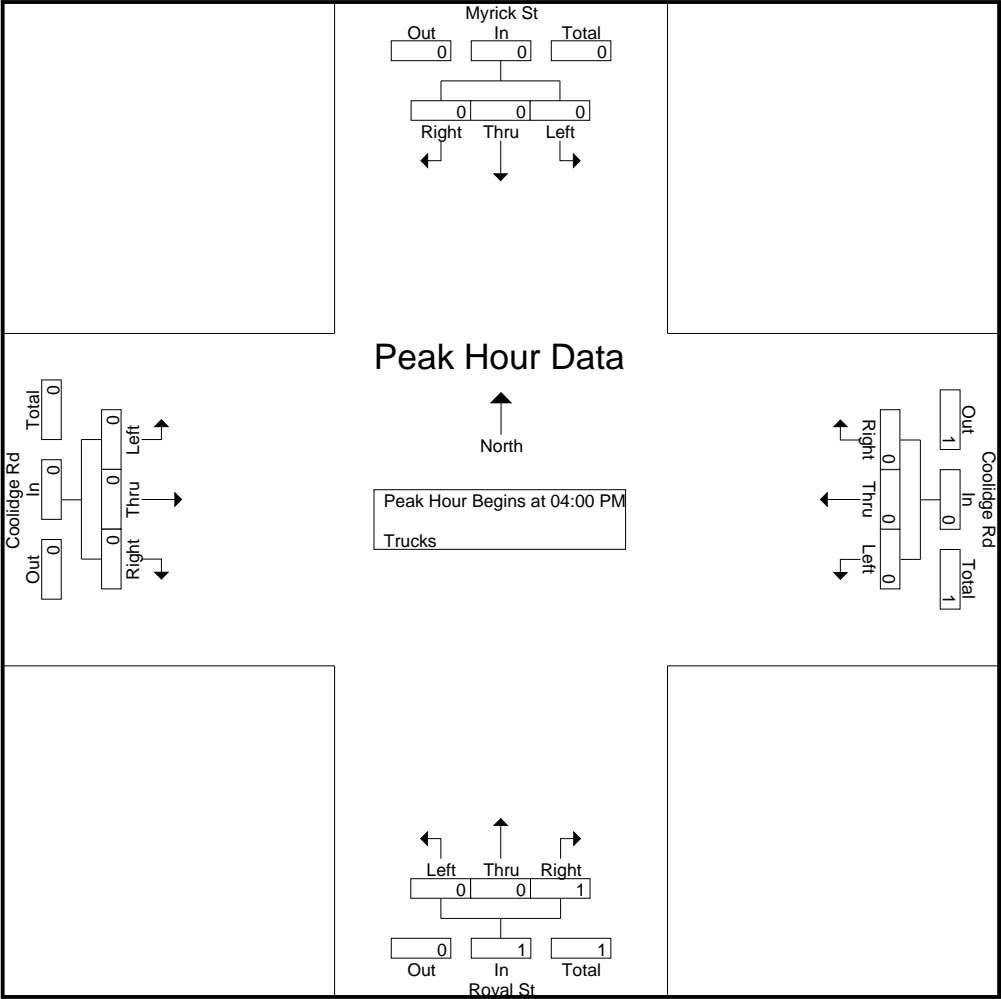
Weather : Cloudy

| | Myrick St From North | | | | Coolidge Rd From East | | | | Royal St From South | | | | Coolidge Rd From West | | | | |
|--|-------------------------|------|-------|------------|--------------------------|------|-------|------------|------------------------|------|-------|------------|--------------------------|------|-------|------------|------------|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:00 PM | | | | | | | | | | | | | | | | | |
| 04:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 |
| 04:45 PM | 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 | 1 | 1 | 0 | 0 | 0 | 0 | 1 |
| % App. Total | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 100 | | 0 | 0 | 0 | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .250 | .250 | .000 | .000 | .000 | .000 | .250 |

Accurate Counts
978-664-2565

File Name : 35860004
Site Code : 35860004
Start Date : 4/9/2019
Page No : 11

N/S Street : Myrick St / Royal St
E/W Street: Coolidge Road
City/State : Allston, MA
Weather : Cloudy



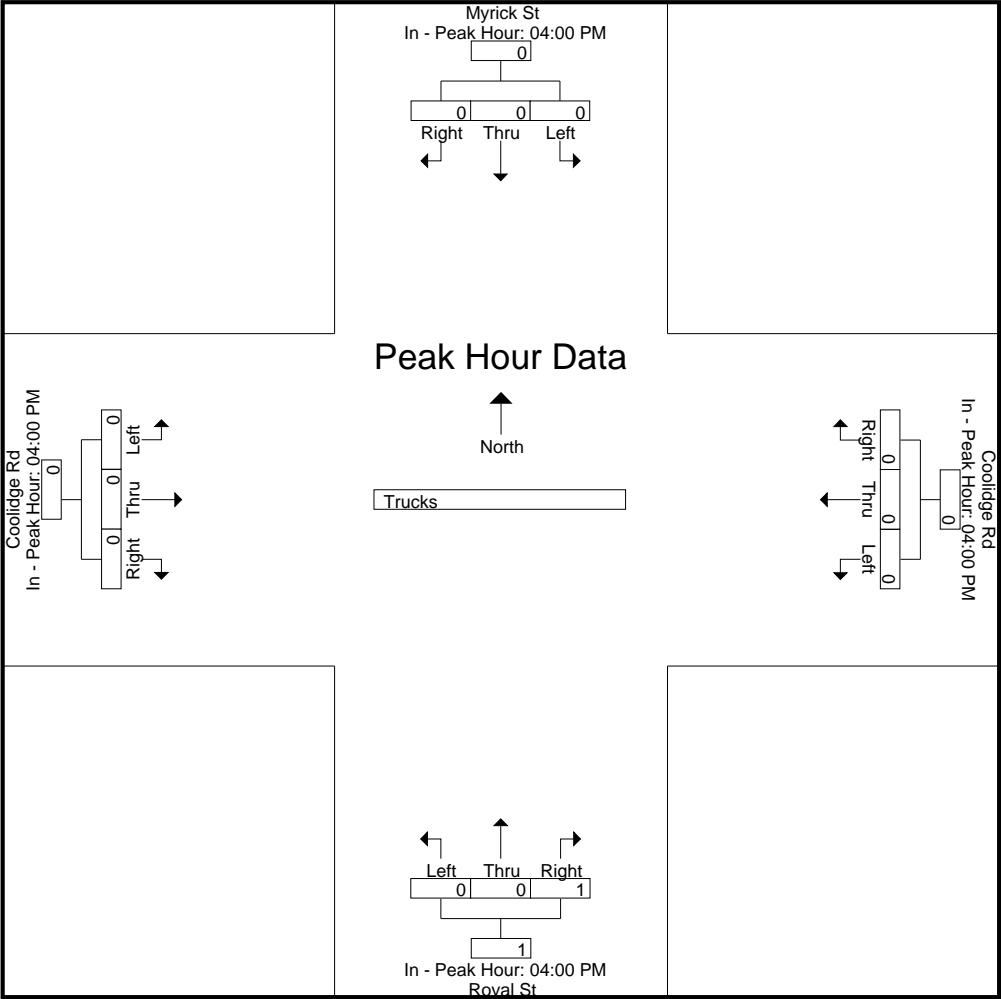
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

| | 04:00 PM | | | | 04:00 PM | | | | 04:00 PM | | | | 04:00 PM | | | |
|--------------|----------|---|---|---|----------|---|---|---|----------|---|---|---|----------|---|---|---|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| +45 mins. | 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 | 1 | 1 | 0 | 0 | 0 | 0 |

Accurate Counts
978-664-2565

| | | | | | | | | | | | | | | | | |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| % App. Total | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 100 | | 0 | 0 | 0 | |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .250 | .250 | .000 | .000 | .000 | .000 |



Accurate Counts

978-664-2565

File Name : 35860004

Site Code : 35860004

Start Date : 4/9/2019

Page No : 13

N/S Street : Myrick St / Royal St

E/W Street: Coolidge Road

City/State : Allston, MA

Weather : Cloudy

Groups Printed- Bikes Peds

| | Myrick St From North | | | | Coolidge Rd From East | | | | Royal St From South | | | | Coolidge Rd From West | | | | Exclu. Total | Inclu. Total | Int. Total |
|-------------|-------------------------|------|-------|------|--------------------------|------|-------|------|------------------------|------|-------|------|--------------------------|------|-------|------|--------------|--------------|------------|
| Start Time | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | | | |
| 04:00 PM | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 3 | 0 | 3 |
| 04:15 PM | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 6 | 1 | 7 |
| 04:30 PM | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 3 | 2 | 5 |
| 04:45 PM | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 4 | 0 | 4 |
| Total | 0 | 1 | 0 | 8 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 6 | 1 | 0 | 0 | 1 | 16 | 3 | 19 |
| 05:00 PM | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 6 | 0 | 6 |
| 05:15 PM | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 3 | 1 | 4 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 3 | 1 | 4 |
| 05:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 4 | 11 | 0 | 11 |
| Total | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 8 | 0 | 1 | 0 | 6 | 0 | 1 | 0 | 7 | 23 | 2 | 25 |
| Grand Total | 0 | 1 | 0 | 10 | 0 | 0 | 0 | 9 | 0 | 2 | 0 | 12 | 1 | 1 | 0 | 8 | 39 | 5 | 44 |
| Apprch % | 0 | 100 | 0 | | 0 | 0 | 0 | | 0 | 100 | 0 | | 50 | 50 | 0 | | | | |
| Total % | 0 | 20 | 0 | | 0 | 0 | 0 | | 0 | 40 | 0 | | 20 | 20 | 0 | | 88.6 | 11.4 | |

Accurate Counts

978-664-2565

File Name : 35860004

Site Code : 35860004

Start Date : 4/9/2019

Page No : 14

N/S Street : Myrick St / Royal St

E/W Street: Coolidge Road

City/State : Allston, MA

Weather : Cloudy

| | Myrick St From North | | | | Coolidge Rd From East | | | | Royal St From South | | | | Coolidge Rd From West | | | | |
|--|-------------------------|------|-------|------------|--------------------------|------|-------|------------|------------------------|------|-------|------------|--------------------------|------|-------|------------|------------|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:00 PM | | | | | | | | | | | | | | | | | |
| 04:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:15 PM | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 2 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 3 |
| % App. Total | 0 | 100 | 0 | | 0 | 0 | 0 | | 0 | 100 | 0 | | 100 | 0 | 0 | | |
| PHF | .000 | .250 | .000 | .250 | .000 | .000 | .000 | .000 | .000 | .250 | .000 | .250 | .250 | .000 | .000 | .250 | .375 |

Accurate Counts

978-664-2565

File Name : 35860004

Site Code : 35860004

Start Date : 4/9/2019

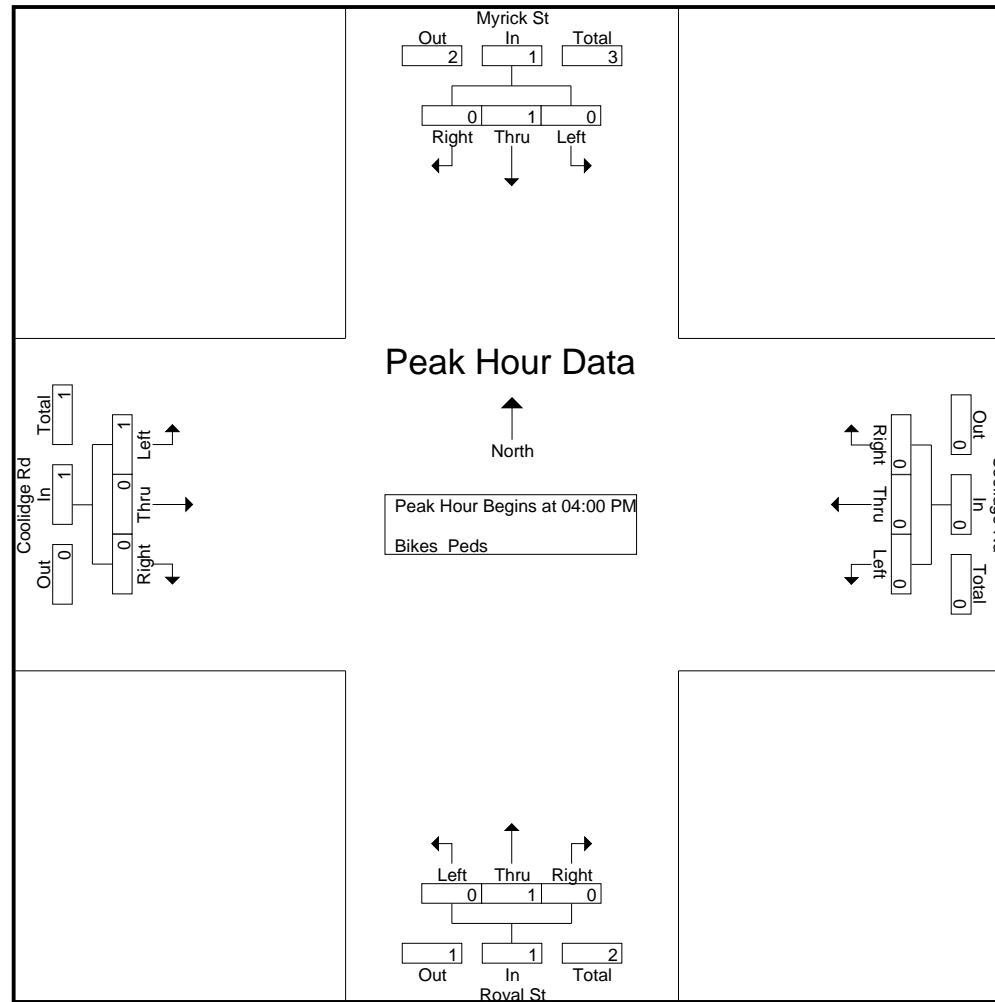
Page No : 15

N/S Street : Myrick St / Royal St

E/W Street: Coolidge Road

City/State : Allston, MA

Weather : Cloudy



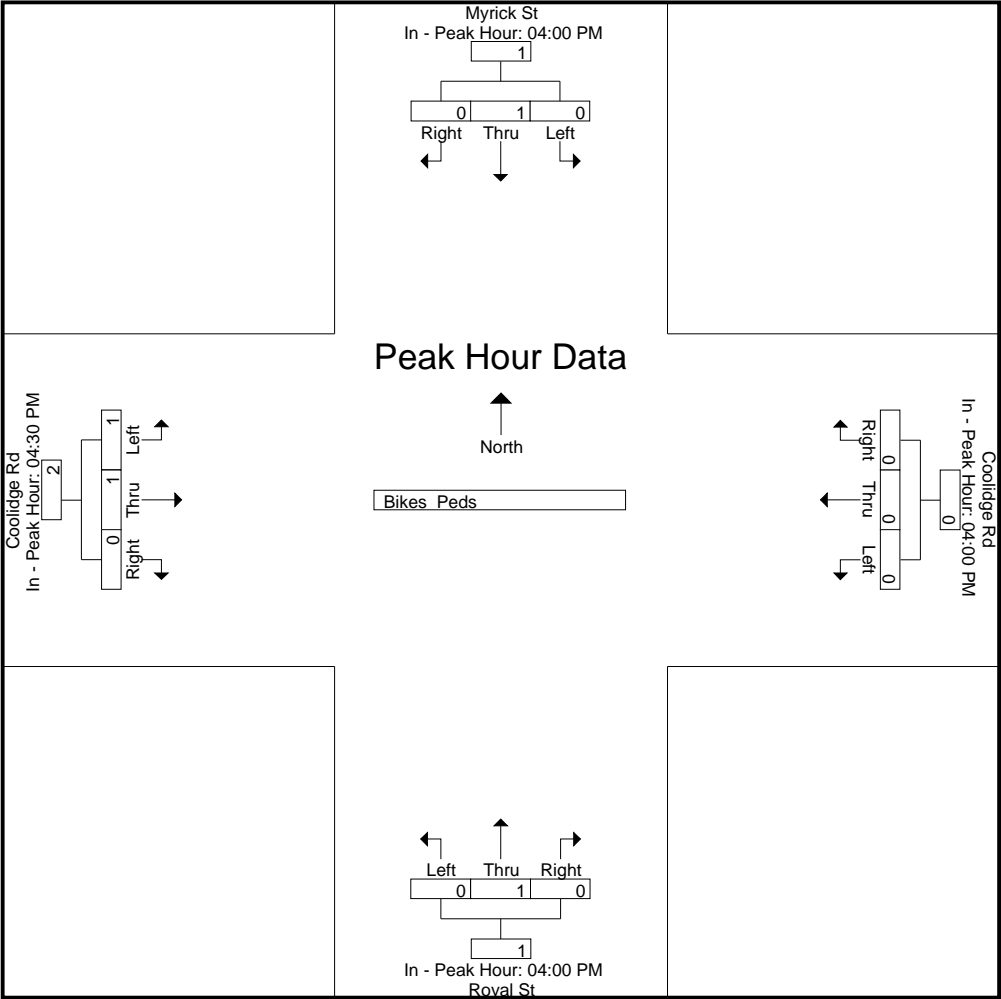
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

| | 04:00 PM | | | | 04:00 PM | | | | 04:00 PM | | | | 04:30 PM | | | |
|--------------|----------|-----|---|---|----------|---|---|---|----------|-----|---|---|----------|----|---|---|
| +0 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| +15 mins. | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| +45 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Total Volume | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 2 |
| % App. Total | 0 | 100 | 0 | | 0 | 0 | 0 | | 0 | 100 | 0 | | 50 | 50 | 0 | |

Accurate Counts
978-664-2565

| | | | | | | | | | | | | | | | | |
|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| PHF | .000 | .250 | .000 | .250 | .000 | .000 | .000 | .000 | .000 | .250 | .000 | .250 | .250 | .250 | .000 | .500 |
|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|



| | Lincoln St & Cambridge St | | | | Lincoln St & Empire St | | | | Lincoln St & Royal St | | | | Coolidge Rd & Royal St/Myrick St | | | | | 15 Minute Totals | Hourly Totals | MAX HRLY |
|------------|---------------------------|---------------|--|--|------------------------|---------------|--|--|-----------------------|---------------|--|--|----------------------------------|---------------|--|--|--|------------------|---------------|----------|
| Start Time | 15-Minute Totals | Hourly Totals | | | 15-Minute Totals | Hourly Totals | | | 15-Minute Totals | Hourly Totals | | | 15-Minute Totals | Hourly Totals | | | | | | |
| 07:00 AM | 604 | | | | 99 | | | | 90 | | | | 11 | | | | | 804 | | |
| 07:15 AM | 678 | | | | 127 | | | | 112 | | | | 19 | | | | | 936 | | |
| 07:30 AM | 689 | | | | 167 | | | | 158 | | | | 15 | | | | | 1029 | | |
| 07:45 AM | 707 | 2678 | | | 134 | 527 | | | 126 | 486 | | | 23 | 68 | | | | 990 | 3759 | |
| 08:00 AM | 715 | 2789 | | | 155 | 583 | | | 149 | 545 | | | 23 | 80 | | | | 1042 | 3997 | |
| 08:15 AM | 687 | 2798 | | | 151 | 607 | | | 139 | 572 | | | 20 | 81 | | | | 997 | 4058 | |
| 08:30 AM | 687 | 2796 | | | 163 | 603 | | | 156 | 570 | | | 18 | 84 | | | | 1024 | 4053 | |
| 08:45 AM | 657 | 2746 | | | 156 | 625 | | | 153 | 597 | | | 12 | 73 | | | | 978 | 4041 | 4058 |
| 09:00 AM | 0 | 2031 | | | 0 | 470 | | | 0 | 448 | | | 0 | 50 | | | | 0 | 2999 | |
| 09:15 AM | 0 | 1344 | | | 0 | 319 | | | 0 | 309 | | | 0 | 30 | | | | 0 | 2002 | |
| 09:30 AM | 0 | 657 | | | 0 | 156 | | | 0 | 153 | | | 0 | 12 | | | | 0 | 978 | |
| 09:45 AM | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | | 0 | 0 | |
| 10:00 AM | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | | 0 | 0 | |
| 10:15 AM | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | | 0 | 0 | |
| 10:30 AM | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | | 0 | 0 | |
| 10:45 AM | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | | 0 | 0 | |
| 11:00 AM | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | | 0 | 0 | |
| 11:15 AM | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | | 0 | 0 | |
| 11:30 AM | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | | 0 | 0 | |
| 11:45 AM | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | | 0 | 0 | |
| 12:00 PM | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | | 0 | 0 | |
| 12:15 PM | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | | 0 | 0 | |
| 12:30 PM | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | | 0 | 0 | |
| 12:45 PM | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | | 0 | 0 | |
| 01:00 PM | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | | 0 | 0 | |
| 01:15 PM | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | | 0 | 0 | |
| 01:30 PM | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | | 0 | 0 | |
| 01:45 PM | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | | 0 | 0 | |
| 02:00 PM | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | | 0 | 0 | |
| 02:15 PM | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | | 0 | 0 | |
| 02:30 PM | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | | 0 | 0 | |
| 02:45 PM | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | | 0 | 0 | |
| 03:00 PM | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | | 0 | 0 | |
| 03:15 PM | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | | 0 | 0 | |
| 03:30 PM | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | | 0 | 0 | |
| 03:45 PM | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | | 0 | 0 | |
| 04:00 PM | 650 | 650 | | | 130 | 130 | | | 120 | 120 | | | 19 | 19 | | | | 919 | 919 | |
| 04:15 PM | 684 | 1334 | | | 149 | 279 | | | 139 | 259 | | | 19 | 38 | | | | 991 | 1910 | |
| 04:30 PM | 650 | 1984 | | | 150 | 429 | | | 142 | 401 | | | 15 | 53 | | | | 957 | 2867 | |
| 04:45 PM | 674 | 2658 | | | 156 | 585 | | | 153 | 554 | | | 24 | 77 | | | | 1007 | 3874 | |
| 05:00 PM | 700 | 2708 | | | 154 | 609 | | | 144 | 578 | | | 17 | 75 | | | | 1015 | 3970 | |
| 05:15 PM | 747 | 2771 | | | 196 | 656 | | | 194 | 633 | | | 24 | 80 | | | | 1161 | 4140 | |
| 05:30 PM | 772 | 2893 | | | 174 | 680 | | | 172 | 663 | | | 25 | 90 | | | | 1143 | 4326 | |
| 05:45 PM | 700 | 2919 | | | 186 | 710 | | | 179 | 689 | | | 28 | 94 | | | | 1093 | 4412 | 4412 |

| Start Time | Lincoln St From North | | | | Cambridge St From East | | | | Drwy From South | | | | Cambridge St From West | | | | 15 Minute Totals | Hourly Totals |
|------------|--------------------------|------|-------|------|---------------------------|------|-------|------|--------------------|------|-------|------|---------------------------|------|-------|------|---------------------|------------------|
| | Left | Thru | Right | Peds | Left | Thru | Right | U-TR | Left | Thru | Right | Peds | Left | Thru | Right | U-TR | | |
| 07:00 AM | 33 | 0 | 9 | 0 | | 3 | 216 | 23 | 6 | | 0 | 0 | 1 | 0 | | 10 | 303 | 604 |
| 07:15 AM | 44 | 1 | 18 | 0 | | 0 | 227 | 36 | 3 | | 0 | 0 | 0 | 0 | | 10 | 339 | 678 |
| 07:30 AM | 46 | 0 | 21 | 0 | 67 | 0 | 192 | 42 | 3 | 237 | 0 | 0 | 0 | 0 | 0 | 21 | 363 | 689 |
| 07:45 AM | 39 | 1 | 18 | 0 | 58 | 3 | 189 | 33 | 8 | 233 | 0 | 0 | 1 | 0 | 1 | 18 | 392 | 707 |
| 08:00 AM | 56 | 0 | 17 | 0 | 73 | 1 | 209 | 42 | 3 | 255 | 0 | 0 | 1 | 0 | 1 | 13 | 367 | 715 |
| 08:15 AM | 46 | 0 | 21 | 0 | 67 | 1 | 224 | 34 | 4 | 263 | 0 | 0 | 1 | 0 | 1 | 23 | 332 | 687 |
| 08:30 AM | 47 | 0 | 16 | 0 | | 1 | 229 | 46 | 4 | | 0 | 0 | 1 | 0 | | 25 | 316 | 687 |
| 08:45 AM | 33 | 0 | 21 | 0 | | 1 | 231 | 46 | 3 | | 0 | 0 | 2 | 0 | | 15 | 305 | 657 |
| 09:00 AM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| 09:15 AM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| 09:30 AM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| 09:45 AM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| 10:00 AM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| 10:15 AM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| 10:30 AM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| 10:45 AM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| 11:00 AM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| 11:15 AM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| 11:30 AM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| 11:45 AM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| 12:00 PM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| 12:15 PM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| 12:30 PM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| 12:45 PM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| 01:00 PM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| 01:15 PM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| 01:30 PM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| 01:45 PM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| 02:00 PM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| 02:15 PM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| 02:30 PM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| 02:45 PM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| 03:00 PM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| 03:15 PM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| 03:30 PM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| 03:45 PM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| 04:00 PM | 41 | 0 | 17 | 0 | | 0 | 231 | 24 | 6 | | 0 | 1 | 1 | 0 | | 33 | 295 | 650 |
| 04:15 PM | 33 | 0 | 15 | 0 | | 0 | 260 | 49 | 6 | | 0 | 0 | 0 | 0 | | 30 | 290 | 684 |
| 04:30 PM | 33 | 0 | 17 | 0 | | 0 | 262 | 51 | 1 | | 0 | 0 | 0 | 0 | | 29 | 255 | 650 |
| 04:45 PM | 29 | 0 | 19 | 0 | | 1 | 276 | 37 | 3 | | 0 | 1 | 0 | 0 | | 28 | 278 | 674 |
| 05:00 PM | 45 | 0 | 15 | 0 | 60 | 0 | 311 | 29 | 6 | 346 | 0 | 0 | 0 | 0 | 0 | 27 | 266 | 700 |
| 05:15 PM | 40 | 0 | 18 | 0 | 58 | 0 | 280 | 48 | 4 | 332 | 0 | 0 | 0 | 0 | 0 | 42 | 313 | 747 |
| 05:30 PM | 37 | 0 | 10 | 0 | 47 | 0 | 271 | 56 | 3 | 330 | 0 | 0 | 0 | 0 | 0 | 35 | 358 | 772 |
| 05:45 PM | 31 | 0 | 11 | 0 | 42 | 0 | 248 | 59 | 2 | 309 | 0 | 0 | 0 | 0 | 0 | 36 | 309 | 700 |

West of Cambridge St & Lincoln St

| EB | WB | Two Way Volume |
|------|-----|----------------|
| 1542 | 891 | 2433 |

East of Cambridge St & Lincoln St

| EB | WB | Two Way Volume |
|------|-----|----------------|
| 1644 | 988 | 2632 |

1395 1164 2559

1399 1317 2716

| Start Time | Lincoln St From North | | | | Cambridge St From East | | | | Drwy From South | | | | Cambridge St From West | | | |
|-------------------|--------------------------|---------|-------|------|---------------------------|------|-------|------|--------------------|---------|---------|---------|---------------------------|------|-------|------|
| | Left | Thru | Right | Peds | Left | Thru | Right | U-TR | Left | Thru | Right | Peds | Left | Thru | Right | U-TR |
| 7:30-8:30 | | | | | | | | | | | | | | | | |
| Hourly Volume | 187 | 1 | 77 | 0 | 5 | 814 | 151 | 18 | 0 | 0 | 3 | 0 | 75 | 1454 | 5 | 8 |
| PHF (by Approach) | | | | 0.91 | | | | 0.94 | | | | 0.75 | | | | 0.93 |
| %HV | 0.5% | 0.0% | 1.3% | | 20.0% | 4.7% | 1.2% | | #DIV/0! | #DIV/0! | 0.0% | | 4.0% | 1.9% | 0.0% | |
| 5:00-6:00 | | | | | | | | | | | | | | | | |
| Hourly Volume | 153 | 0 | 54 | 0 | 0 | 1110 | 192 | 15 | 0 | 0 | 0 | 0 | 140 | 1246 | 0 | 9 |
| PHF (by Approach) | | | | 0.86 | | | | 0.95 | | | | #DIV/0! | | | | 0.88 |
| %HV | | #DIV/0! | 1.9% | | #DIV/0! | 1.4% | 0.0% | | #DIV/0! | #DIV/0! | #DIV/0! | | 0.7% | 2.1% | 0.0% | |

| Start Time | Empire St From East | | | | Lincoln St From South | | | | Lincoln St From West | | | 15 Minute Totals | Hourly Totals |
|------------|------------------------|------|------|----|--------------------------|-------|------|----|-------------------------|-------|------|---------------------|------------------|
| | Left | Thru | Peds | | Left | Right | Peds | | Thru | Right | Peds | | |
| 07:00 AM | 9 | 22 | 0 | | 33 | 0 | 0 | | 0 | 35 | 0 | 99 | |
| 07:15 AM | 11 | 18 | 0 | | 46 | 0 | 0 | | 0 | 52 | 0 | 127 | |
| 07:30 AM | 5 | 32 | 0 | 37 | 65 | 0 | 0 | 65 | 0 | 65 | 0 | 167 | |
| 07:45 AM | 8 | 18 | 0 | 26 | 56 | 0 | 0 | 56 | 0 | 52 | 0 | 134 | 527 |
| 08:00 AM | 6 | 32 | 0 | 38 | 54 | 0 | 0 | 54 | 0 | 63 | 0 | 155 | 583 |
| 08:15 AM | 6 | 23 | 0 | 29 | 58 | 0 | 0 | 58 | 0 | 64 | 0 | 151 | 607 |
| 08:30 AM | 6 | 35 | 0 | | 66 | 0 | 0 | | 0 | 56 | 0 | 163 | 603 |
| 08:45 AM | 8 | 34 | 0 | | 66 | 0 | 0 | | 0 | 48 | 0 | 156 | 625 |
| 09:00 AM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 470 |
| 09:15 AM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 319 |
| 09:30 AM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 156 |
| 09:45 AM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 10:00 AM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 10:15 AM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 10:30 AM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 10:45 AM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 11:00 AM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 11:15 AM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 11:30 AM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 11:45 AM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 12:00 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 12:15 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 12:30 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 12:45 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 01:00 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 01:15 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 01:30 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 01:45 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 02:00 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 02:15 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 02:30 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 02:45 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 03:00 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 03:15 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 03:30 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 03:45 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 04:00 PM | 5 | 12 | 0 | | 60 | 0 | 2 | | 1 | 52 | 0 | 130 | 130 |
| 04:15 PM | 8 | 33 | 0 | | 73 | 0 | 1 | | 0 | 35 | 0 | 149 | 279 |
| 04:30 PM | 8 | 24 | 0 | | 73 | 0 | 0 | | 0 | 45 | 0 | 150 | 429 |
| 04:45 PM | 8 | 39 | 0 | | 68 | 0 | 1 | | 0 | 41 | 0 | 156 | 585 |
| 05:00 PM | 3 | 29 | 0 | 32 | 58 | 0 | 0 | 58 | 0 | 64 | 1 | 154 | 609 |
| 05:15 PM | 10 | 52 | 0 | 62 | 91 | 0 | 0 | 91 | 0 | 43 | 0 | 196 | 656 |
| 05:30 PM | 3 | 35 | 0 | 38 | 90 | 0 | 0 | 90 | 0 | 46 | 0 | 174 | 680 |
| 05:45 PM | 5 | 53 | 0 | 58 | 95 | 0 | 0 | 95 | 0 | 33 | 0 | 186 | 710 |

| Start Time | Empire St From East | | | | Lincoln St From South | | | | Lincoln St From West | | |
|-------------------|------------------------|------|------|--|--------------------------|---------|------|--|-------------------------|-------|------|
| | Left | Thru | Peds | | Left | Right | Peds | | Thru | Right | Peds |
| 7:30-8:30 | | | | | | | | | | | |
| Hourly Volume | 25 | 105 | 0 | | 233 | 0 | 0 | | 0 | 244 | 0 |
| PHF (by Approach) | | | 0.86 | | | | 0.90 | | | | 0.94 |
| %HV | 8.0% | 1.9% | | | 6.9% | #DIV/0! | | | #DIV/0! | 2.5% | |
| 5:00-6:00 | | | | | | | | | | | |
| Hourly Volume | 21 | 169 | 0 | | 334 | 0 | 0 | | 0 | 186 | 1 |
| PHF (by Approach) | | | 0.77 | | | | 0.88 | | | | 0.73 |
| %HV | 0.0% | 0.0% | | | 1.2% | #DIV/0! | | | #DIV/0! | 2.2% | |

| | Empire St From East | | | | Lincoln St From South | | | | Lincoln St From West | | |
|------------|------------------------|------|------|--|--------------------------|-------|------|--|-------------------------|-------|------|
| Start Time | Left | Thru | Peds | | Left | Right | Peds | | Thru | Right | Peds |
| 07:00 AM | 0 | 0 | 1 | | 0 | 0 | 4 | | 0 | 0 | 0 |
| 07:15 AM | 0 | 0 | 2 | | 0 | 0 | 1 | | 0 | 0 | 0 |
| 07:30 AM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 1 |
| 07:45 AM | 1 | 0 | 1 | | 0 | 0 | 3 | | 0 | 1 | 0 |
| 08:00 AM | 0 | 0 | 0 | | 1 | 0 | 1 | | 0 | 1 | 0 |
| 08:15 AM | 0 | 1 | 0 | | 0 | 0 | 1 | | 0 | 1 | 1 |
| 08:30 AM | 1 | 0 | 1 | | 1 | 0 | 5 | | 0 | 0 | 0 |
| 08:45 AM | 1 | 0 | 1 | | 2 | 0 | 2 | | 0 | 0 | 0 |
| 09:00 AM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 09:15 AM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 09:30 AM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 09:45 AM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 10:00 AM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 10:15 AM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 10:30 AM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 10:45 AM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 11:00 AM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 11:15 AM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 11:30 AM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 11:45 AM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 12:00 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 12:15 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 12:30 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 12:45 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 01:00 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 01:15 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 01:30 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 01:45 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 02:00 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 02:15 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 02:30 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 02:45 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 03:00 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 03:15 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 03:30 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 03:45 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 04:00 PM | 0 | 0 | 4 | | 0 | 0 | 3 | | 0 | 0 | 0 |
| 04:15 PM | 0 | 2 | 1 | | 1 | 0 | 3 | | 0 | 0 | 0 |
| 04:30 PM | 0 | 0 | 2 | | 0 | 1 | 2 | | 0 | 0 | 2 |
| 04:45 PM | 0 | 0 | 1 | | 1 | 0 | 1 | | 0 | 0 | 0 |
| 05:00 PM | 0 | 0 | 2 | | 0 | 1 | 1 | | 0 | 0 | 2 |
| 05:15 PM | 0 | 0 | 1 | | 0 | 0 | 2 | | 0 | 0 | 0 |
| 05:30 PM | 0 | 0 | 1 | | 0 | 0 | 1 | | 0 | 0 | 1 |
| 05:45 PM | 0 | 0 | 1 | | 0 | 0 | 0 | | 0 | 0 | 0 |

[illegible]

| Start Time | Royal St From North | | | | Lincoln St From East | | | | Lincoln St From West | | | 15 Minute Totals | Hourly Totals | West of Lincoln St & Royal St | | |
|------------|------------------------|-------|------|---|-------------------------|-------|------|-----|-------------------------|------|------|---------------------|------------------|-------------------------------|-----|-------------------|
| | Left | Right | Peds | | Thru | Right | Peds | | Left | Thru | Peds | | | EB | WB | Two Way Volume |
| 07:00 AM | 0 | 0 | 0 | | 56 | 0 | 0 | | 1 | 33 | 0 | | 90 | | | |
| 07:15 AM | 0 | 0 | 0 | | 60 | 1 | 0 | | 1 | 50 | 0 | | 112 | | | |
| 07:30 AM | 1 | 0 | 0 | 1 | 89 | 2 | 0 | 91 | 1 | 65 | 0 | 66 | 158 | 240 | 323 | 563 |
| 07:45 AM | 0 | 1 | 0 | 1 | 70 | 3 | 0 | 73 | 0 | 52 | 0 | 52 | 126 | | | 486 |
| 08:00 AM | 0 | 0 | 0 | 0 | 86 | 2 | 0 | 88 | 1 | 60 | 0 | 61 | 149 | | | 545 |
| 08:15 AM | 0 | 0 | 0 | 0 | 78 | 0 | 0 | 78 | 2 | 59 | 0 | 61 | 139 | | | 572 |
| 08:30 AM | 0 | 0 | 0 | | 98 | 3 | 0 | | 0 | 55 | 0 | | 156 | | | 570 |
| 08:45 AM | 0 | 0 | 0 | | 101 | 0 | 0 | | 2 | 50 | 0 | | 153 | | | 597 |
| 09:00 AM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | | | 448 |
| 09:15 AM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | | | 309 |
| 09:30 AM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | | | 153 |
| 09:45 AM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | | | 0 |
| 10:00 AM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | | | 0 |
| 10:15 AM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | | | 0 |
| 10:30 AM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | | | 0 |
| 10:45 AM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | | | 0 |
| 11:00 AM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | | | 0 |
| 11:15 AM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | | | 0 |
| 11:30 AM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | | | 0 |
| 11:45 AM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | | | 0 |
| 12:00 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | | | 0 |
| 12:15 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | | | 0 |
| 12:30 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | | | 0 |
| 12:45 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | | | 0 |
| 01:00 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | | | 0 |
| 01:15 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | | | 0 |
| 01:30 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | | | 0 |
| 01:45 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | | | 0 |
| 02:00 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | | | 0 |
| 02:15 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | | | 0 |
| 02:30 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | | | 0 |
| 02:45 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | | | 0 |
| 03:00 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | | | 0 |
| 03:15 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | | | 0 |
| 03:30 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | | | 0 |
| 03:45 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | | | 0 |
| 04:00 PM | 0 | 0 | 0 | | 64 | 7 | 0 | | 1 | 48 | 0 | | 120 | | | 120 |
| 04:15 PM | 0 | 0 | 0 | | 96 | 5 | 0 | | 2 | 36 | 0 | | 139 | | | 259 |
| 04:30 PM | 0 | 0 | 0 | | 92 | 7 | 0 | | 0 | 43 | 0 | | 142 | | | 401 |
| 04:45 PM | 0 | 0 | 0 | | 104 | 7 | 0 | | 1 | 41 | 0 | | 153 | | | 554 |
| 05:00 PM | 0 | 0 | 0 | 0 | 81 | 1 | 0 | 82 | 0 | 62 | 0 | 62 | 144 | 195 | 470 | 665 |
| 05:15 PM | 0 | 0 | 0 | 0 | 135 | 8 | 0 | 143 | 6 | 45 | 0 | 51 | 194 | | | 633 |
| 05:30 PM | 0 | 0 | 0 | 0 | 116 | 8 | 0 | 124 | 5 | 43 | 0 | 48 | 172 | | | 663 |
| 05:45 PM | 0 | 0 | 0 | 0 | 138 | 7 | 0 | 145 | 1 | 33 | 0 | 34 | 179 | | | 689 |

| Start Time | Royal St From North | | | | Lincoln St From East | | | | Lincoln St From West | | | |
|-------------------|------------------------|---------|---------|--|-------------------------|-------|------|--|-------------------------|------|------|--|
| | Left | Right | Peds | | Thru | Right | Peds | | Left | Thru | Peds | |
| 7:30-8:30 | | | | | | | | | | | | |
| Hourly Volume | 1 | 1 | 0 | | 323 | 7 | 0 | | 4 | 236 | 0 | |
| PHF (by Approach) | | | 0.50 | | | | 0.91 | | | | 0.91 | |
| %HV | 0.0% | 100.0% | | | 5.0% | 0.0% | | | 0.0% | 2.5% | | |
| 5:00-6:00 | | | | | | | | | | | | |
| Hourly Volume | 0 | 0 | 0 | | 470 | 24 | 0 | | 12 | 183 | 0 | |
| PHF (by Approach) | | | #DIV/0! | | | | 0.85 | | | | 0.79 | |
| %HV | #DIV/0! | #DIV/0! | | | 0.2% | 0.0% | | | 0.0% | 2.2% | | |

| | Royal St From North | | | | Lincoln St From East | | | | Lincoln St From West | | |
|------------|------------------------|-------|------|--|-------------------------|-------|------|--|-------------------------|------|------|
| Start Time | Left | Right | Peds | | Thru | Right | Peds | | Left | Thru | Peds |
| 07:00 AM | 0 | 0 | 1 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 07:15 AM | 0 | 0 | 2 | | 1 | 0 | 0 | | 0 | 0 | 0 |
| 07:30 AM | 0 | 0 | 1 | | 0 | 0 | 1 | | 0 | 1 | 0 |
| 07:45 AM | 0 | 0 | 2 | | 1 | 0 | 1 | | 0 | 1 | 0 |
| 08:00 AM | 1 | 0 | 1 | | 0 | 0 | 1 | | 0 | 0 | 1 |
| 08:15 AM | 0 | 0 | 7 | | 1 | 0 | 0 | | 0 | 0 | 1 |
| 08:30 AM | 0 | 1 | 2 | | 0 | 0 | 3 | | 0 | 0 | 0 |
| 08:45 AM | 0 | 1 | 3 | | 1 | 0 | 2 | | 0 | 0 | 0 |
| 09:00 AM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 09:15 AM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 09:30 AM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 09:45 AM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 10:00 AM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 10:15 AM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 10:30 AM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 10:45 AM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 11:00 AM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 11:15 AM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 11:30 AM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 11:45 AM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 12:00 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 12:15 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 12:30 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 12:45 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 01:00 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 01:15 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 01:30 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 01:45 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 02:00 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 02:15 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 02:30 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 02:45 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 03:00 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 03:15 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 03:30 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 03:45 PM | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 04:00 PM | 0 | 0 | 6 | | 2 | 0 | 0 | | 0 | 1 | 0 |
| 04:15 PM | 0 | 2 | 1 | | 1 | 1 | 0 | | 1 | 0 | 0 |
| 04:30 PM | 0 | 0 | 5 | | 0 | 0 | 1 | | 0 | 1 | 0 |
| 04:45 PM | 0 | 0 | 1 | | 1 | 0 | 1 | | 0 | 0 | 3 |
| 05:00 PM | 0 | 0 | 3 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| 05:15 PM | 0 | 0 | 7 | | 0 | 0 | 1 | | 1 | 0 | 0 |
| 05:30 PM | 0 | 0 | 6 | | 0 | 0 | 0 | | 0 | 0 | 3 |
| 05:45 PM | 0 | 0 | 3 | | 0 | 0 | 1 | | 0 | 0 | |

[illegible]


















| Start Time | Myrick St From North | | | | | Coolidge Rd From East | | | | | Royal St From South | | | | | Coolidge Rd From West | | | | 15 Minute Totals | Hourly Totals |
|------------|-------------------------|------|-------|------|---|--------------------------|------|-------|------|---|------------------------|------|-------|------|----|--------------------------|------|-------|------|---------------------|------------------|
| | Left | Thru | Right | Peds | | Left | Thru | Right | Peds | | Left | Thru | Right | Peds | | Left | Thru | Right | Peds | | |
| 07:00 AM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 3 | 4 | 0 | | 0 | 4 | 0 | 0 | 11 | |
| 07:15 AM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 4 | 8 | 0 | | 0 | 7 | 0 | 0 | 19 | |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7 | 0 | 9 | 0 | 6 | 0 | 0 | 15 | |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 11 | 0 | 16 | 0 | 7 | 0 | 0 | 23 | 68 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 3 | 6 | 0 | 9 | 0 | 13 | 0 | 0 | 23 | 80 |
| 08:15 AM | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 4 | 0 | 10 | 1 | 8 | 0 | 0 | 20 | 81 |
| 08:30 AM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 3 | 7 | 0 | | 1 | 7 | 0 | 0 | 18 | 84 |
| 08:45 AM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 6 | 4 | 0 | | 0 | 2 | 0 | 0 | 12 | 73 |
| 09:00 AM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 50 |
| 09:15 AM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 30 |
| 09:30 AM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 12 |
| 09:45 AM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 |
| 10:00 AM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 |
| 10:15 AM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 |
| 10:30 AM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 |
| 10:45 AM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:00 AM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:15 AM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:30 AM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:45 AM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:00 PM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:15 PM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:30 PM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:45 PM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 |
| 01:00 PM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 |
| 01:15 PM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 |
| 01:30 PM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 |
| 01:45 PM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 |
| 02:00 PM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 |
| 02:15 PM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 |
| 02:30 PM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 |
| 02:45 PM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:00 PM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:15 PM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:30 PM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:45 PM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:00 PM | 1 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 6 | 8 | 0 | | 0 | 4 | 0 | 0 | 19 | 19 |
| 04:15 PM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 6 | 7 | 0 | 1 | 5 | 0 | 0 | 0 | 19 | 38 |
| 04:30 PM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 4 | 5 | 0 | 1 | 5 | 0 | 0 | 0 | 15 | 53 |
| 04:45 PM | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 8 | 7 | 0 | 2 | 7 | 0 | 0 | 0 | 24 | 77 |
| 05:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7 | 0 | 9 | 1 | 7 | 0 | 0 | 17 | 75 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 12 | 0 | 18 | 1 | 5 | 0 | 0 | 24 | 80 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 9 | 0 | 18 | 0 | 7 | 0 | 0 | 25 | 90 |
| 05:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 15 | 0 | 21 | 1 | 6 | 0 | 0 | 28 | 94 |

| Start Time | Myrick St From North | | | | | Coolidge Rd From East | | | | | Royal St From South | | | | | Coolidge Rd From West | | | | |
|-------------------|-------------------------|---------|---------|---------|--|--------------------------|---------|---------|---------|--|------------------------|------|-------|------|--|--------------------------|------|---------|------|------|
| | Left | Thru | Right | Peds | | Left | Thru | Right | Peds | | Left | Thru | Right | Peds | | Left | Thru | Right | Peds | |
| 7:30-8:30 | | | | | | | | | | | | | | | | | | | | |
| Hourly Volume | 1 | 0 | 0 | 0 | | 0 | 0 | 1 | 0 | | 0 | 16 | 28 | 0 | | 1 | 34 | 0 | 0 | |
| PHF (by Approach) | | | | 0.25 | | | | | 0.25 | | | | | 0.69 | | | | | | 0.67 |
| %HV | 0.0% | #DIV/0! | #DIV/0! | | | #DIV/0! | #DIV/0! | 0.0% | | | #DIV/0! | 6.3% | 0.0% | | | 0.0% | 0.0% | #DIV/0! | | |
| 5:00-6:00 | | | | | | | | | | | | | | | | | | | | |
| Hourly Volume | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 23 | 43 | 0 | | 3 | 25 | 0 | 0 | |
| PHF (by Approach) | | | | #DIV/0! | | | | | #DIV/0! | | | | | 0.79 | | | | | | 0.88 |
| %HV | #DIV/0! | #DIV/0! | #DIV/0! | | | #DIV/0! | #DIV/0! | #DIV/0! | | | #DIV/0! | 0.0% | 0.0% | | | 0.0% | 0.0% | #DIV/0! | | |

Capacity Analyses

Lanes, Volumes, Timings
1: Cambridge St & Lincoln St

05/28/2019

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBL | NBT | NBR | SBL |
| Lane Configurations | |  |  | | |  |  | | |  | | |
| Traffic Volume (vph) | 8 | 75 | 1454 | 5 | 18 | 5 | 814 | 151 | 0 | 0 | 3 | 187 |
| Future Volume (vph) | 8 | 75 | 1454 | 5 | 18 | 5 | 814 | 151 | 0 | 0 | 3 | 187 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 10 | 10 | 11 | 11 | 10 | 10 | 11 | 11 | 11 | 11 | 11 | 11 |
| Storage Length (ft) | | 130 | | 0 | | 135 | | 0 | 0 | | 0 | 0 |
| Storage Lanes | | 1 | | 0 | | 1 | | 0 | 0 | | 0 | 0 |
| Taper Length (ft) | | 25 | | | | 25 | | | 25 | | | 25 |
| Lane Util. Factor | 0.95 | 1.00 | 0.95 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | 1.00 | | | | 0.99 | | | 0.98 | | |
| Frt | | | | | | | 0.976 | | | 0.865 | | |
| Flt Protected | | 0.950 | | | | 0.950 | | | | | | |
| Satd. Flow (prot) | 0 | 1464 | 3079 | 0 | 0 | 1456 | 2916 | 0 | 0 | 1407 | 0 | 0 |
| Flt Permitted | | 0.950 | | | | 0.950 | | | | | | |
| Satd. Flow (perm) | 0 | 1464 | 3079 | 0 | 0 | 1456 | 2916 | 0 | 0 | 1407 | 0 | 0 |
| Right Turn on Red | | | | Yes | | | | Yes | | | Yes | |
| Satd. Flow (RTOR) | | | | | | | 23 | | | 139 | | |
| Link Speed (mph) | | | 25 | | | | 25 | | | 25 | | |
| Link Distance (ft) | | | 937 | | | | 490 | | | 338 | | |
| Travel Time (s) | | | 25.6 | | | | 13.4 | | | 9.2 | | |
| Confl. Peds. (#/hr) | | | | 8 | | | | 8 | | | 3 | 3 |
| Confl. Bikes (#/hr) | | | | 14 | | | | 5 | | | | |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.94 | 0.94 | 0.94 | 0.94 | 0.75 | 0.75 | 0.75 | 0.91 |
| Heavy Vehicles (%) | 0% | 4% | 2% | 0% | 0% | 20% | 5% | 1% | 0% | 0% | 0% | 1% |
| Adj. Flow (vph) | 9 | 81 | 1563 | 5 | 19 | 5 | 866 | 161 | 0 | 0 | 4 | 205 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 90 | 1568 | 0 | 0 | 24 | 1027 | 0 | 0 | 4 | 0 | 0 |
| Turn Type | Prot | Prot | NA | | Prot | Prot | NA | | | NA | | Perm |
| Protected Phases | 5 | 5 | 2 | | 1 | 1 | 6 | | | 4 | | |
| Permitted Phases | | | | | | | | | 4 | | | 4 |
| Detector Phase | 5 | 5 | 2 | | 1 | 1 | 6 | | 4 | 4 | | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 10.0 | | 4.0 | 4.0 | 10.0 | | 8.0 | 8.0 | | 8.0 |
| Minimum Split (s) | 10.0 | 10.0 | 15.5 | | 9.5 | 9.5 | 26.5 | | 32.0 | 32.0 | | 32.0 |
| Total Split (s) | 23.0 | 23.0 | 59.0 | | 14.0 | 14.0 | 50.0 | | 37.0 | 37.0 | | 37.0 |
| Total Split (%) | 20.9% | 20.9% | 53.6% | | 12.7% | 12.7% | 45.5% | | 33.6% | 33.6% | | 33.6% |
| Yellow Time (s) | 3.5 | 3.5 | 4.5 | | 3.0 | 3.0 | 4.5 | | 4.0 | 4.0 | | 4.0 |
| All-Red Time (s) | 2.5 | 2.5 | 1.0 | | 2.5 | 2.5 | 1.0 | | 3.0 | 3.0 | | 3.0 |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | | 0.0 | 0.0 | | | 0.0 | | |
| Total Lost Time (s) | | 6.0 | 5.5 | | | 5.5 | 5.5 | | | 7.0 | | |
| Lead/Lag | Lead | Lead | Lag | | Lead | Lead | Lag | | | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | | Yes | Yes | Yes | | | | | |
| Recall Mode | None | None | C-Max | | None | None | C-Max | | None | None | | None |
| Act Effect Green (s) | | 11.1 | 66.9 | | | 6.3 | 59.9 | | | 22.9 | | |
| Actuated g/C Ratio | | 0.10 | 0.61 | | | 0.06 | 0.54 | | | 0.21 | | |
| v/c Ratio | | 0.61 | 0.84 | | | 0.29 | 0.64 | | | 0.01 | | |
| Control Delay | | 64.0 | 25.6 | | | 57.8 | 22.7 | | | 0.0 | | |
| Queue Delay | | 0.0 | 0.0 | | | 0.0 | 0.0 | | | 0.0 | | |
| Total Delay | | 64.0 | 25.6 | | | 57.8 | 22.7 | | | 0.0 | | |

Lanes, Volumes, Timings

1: Cambridge St & Lincoln St

05/28/2019



| Lane Group | SBT | SBR |
|-------------------------|-------|-------|
| Lane Configurations | ↔ | ↗ |
| Traffic Volume (vph) | 1 | 77 |
| Future Volume (vph) | 1 | 77 |
| Ideal Flow (vphpl) | 1900 | 1900 |
| Lane Width (ft) | 11 | 10 |
| Storage Length (ft) | | 0 |
| Storage Lanes | | 1 |
| Taper Length (ft) | | |
| Lane Util. Factor | 1.00 | 1.00 |
| Ped Bike Factor | 1.00 | 0.98 |
| Frt | | 0.850 |
| Flt Protected | 0.953 | |
| Satd. Flow (prot) | 1560 | 1343 |
| Flt Permitted | 0.725 | |
| Satd. Flow (perm) | 1182 | 1323 |
| Right Turn on Red | | Yes |
| Satd. Flow (RTOR) | | 139 |
| Link Speed (mph) | 25 | |
| Link Distance (ft) | 188 | |
| Travel Time (s) | 5.1 | |
| Confl. Peds. (#/hr) | | |
| Confl. Bikes (#/hr) | | 4 |
| Peak Hour Factor | 0.91 | 0.91 |
| Heavy Vehicles (%) | 0% | 1% |
| Adj. Flow (vph) | 1 | 85 |
| Shared Lane Traffic (%) | | |
| Lane Group Flow (vph) | 206 | 85 |
| Turn Type | NA | Perm |
| Protected Phases | 4 | |
| Permitted Phases | | 4 |
| Detector Phase | 4 | 4 |
| Switch Phase | | |
| Minimum Initial (s) | 8.0 | 8.0 |
| Minimum Split (s) | 32.0 | 32.0 |
| Total Split (s) | 37.0 | 37.0 |
| Total Split (%) | 33.6% | 33.6% |
| Yellow Time (s) | 4.0 | 4.0 |
| All-Red Time (s) | 3.0 | 3.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 |
| Total Lost Time (s) | 7.0 | 7.0 |
| Lead/Lag | | |
| Lead-Lag Optimize? | | |
| Recall Mode | None | None |
| Act Effect Green (s) | 22.9 | 22.9 |
| Actuated g/C Ratio | 0.21 | 0.21 |
| v/c Ratio | 0.84 | 0.22 |
| Control Delay | 68.7 | 2.3 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 68.7 | 2.3 |

Lanes, Volumes, Timings

1: Cambridge St & Lincoln St

05/28/2019



| Lane Group | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBL | NBT | NBR | SBL |
|-------------------------|-----|------|------|-----|-----|------|------|-----|-----|------|-----|-----|
| LOS | | E | C | | | E | C | | | A | | |
| Approach Delay | | | 27.7 | | | | 23.5 | | | | | |
| Approach LOS | | | C | | | | C | | | | | |
| Queue Length 50th (ft) | | 62 | 488 | | | 17 | 266 | | | 0 | | |
| Queue Length 95th (ft) | | 110 | #773 | | | 44 | 426 | | | 0 | | |
| Internal Link Dist (ft) | | | 857 | | | | 410 | | | 258 | | |
| Turn Bay Length (ft) | | 130 | | | | 135 | | | | | | |
| Base Capacity (vph) | | 226 | 1873 | | | 112 | 1598 | | | 484 | | |
| Starvation Cap Reductn | | 0 | 0 | | | 0 | 0 | | | 0 | | |
| Spillback Cap Reductn | | 0 | 0 | | | 0 | 0 | | | 0 | | |
| Storage Cap Reductn | | 0 | 0 | | | 0 | 0 | | | 0 | | |
| Reduced v/c Ratio | | 0.40 | 0.84 | | | 0.21 | 0.64 | | | 0.01 | | |

Intersection Summary

Area Type: CBD

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 7 (6%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 28.2

Intersection LOS: C

Intersection Capacity Utilization 81.4%

ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Cambridge St & Lincoln St



Lanes, Volumes, Timings
1: Cambridge St & Lincoln St

05/28/2019



| Lane Group | SBT | SBR |
|-------------------------|------|------|
| LOS | E | A |
| Approach Delay | 49.3 | |
| Approach LOS | D | |
| Queue Length 50th (ft) | 139 | 0 |
| Queue Length 95th (ft) | 213 | 8 |
| Internal Link Dist (ft) | 108 | |
| Turn Bay Length (ft) | | |
| Base Capacity (vph) | 322 | 461 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.64 | 0.18 |
| Intersection Summary | | |




HCM 6th TWSC

2: Lincoln St & Empire St

05/28/2019

Intersection

Int Delay, s/veh 2.6

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|--------------------------|---|------|---|------|------|---|
| Lane Configurations |  | |  | | |  |
| Traffic Vol, veh/h | 25 | 105 | 233 | 0 | 0 | 244 |
| Future Vol, veh/h | 25 | 105 | 233 | 0 | 0 | 244 |
| Conflicting Peds, #/hr | 5 | 0 | 0 | 1 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | Free |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 86 | 86 | 90 | 90 | 94 | 94 |
| Heavy Vehicles, % | 8 | 2 | 7 | 0 | 0 | 3 |
| Mvmt Flow | 29 | 122 | 259 | 0 | 0 | 260 |

| Major/Minor | Minor1 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 524 | 259 | 0 |
| Stage 1 | 259 | - | - |
| Stage 2 | 265 | - | - |
| Critical Hdwy | 6.48 | 6.22 | - |
| Critical Hdwy Stg 1 | 5.48 | - | - |
| Critical Hdwy Stg 2 | 5.48 | - | - |
| Follow-up Hdwy | 3.572 | 3.318 | - |
| Pot Cap-1 Maneuver | 503 | 780 | - |
| Stage 1 | 771 | - | - |
| Stage 2 | 766 | - | - |
| Platoon blocked, % | | - | - |
| Mov Cap-1 Maneuver | 501 | 780 | - |
| Mov Cap-2 Maneuver | 501 | - | - |
| Stage 1 | 771 | - | - |
| Stage 2 | 763 | - | - |

| Approach | WB | NB | SB |
|----------------------|------|----|----|
| HCM Control Delay, s | 11.5 | 0 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBTWBLn1 | SBT |
|-----------------------|----------|-----|
| Capacity (veh/h) | - 705 | - |
| HCM Lane V/C Ratio | - 0.214 | - |
| HCM Control Delay (s) | - 11.5 | - |
| HCM Lane LOS | - B | - |
| HCM 95th %tile Q(veh) | - 0.8 | - |

HCM Unsignalized Intersection Capacity Analysis

3: Lincoln St./Empire St

05/28/2019



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|-----------------------------------|------|-------|------|----------------------|------|------|
| Lane Configurations | | ↰ | ↰ | | | |
| Traffic Volume (veh/h) | 4 | 236 | 323 | 7 | 0 | 0 |
| Future Volume (Veh/h) | 4 | 236 | 323 | 7 | 0 | 0 |
| Sign Control | | Free | Free | | Stop | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.50 | 0.50 |
| Hourly flow rate (vph) | 4 | 259 | 355 | 8 | 0 | 0 |
| Pedestrians | | 2 | 3 | | 11 | |
| Lane Width (ft) | | 11.0 | 11.0 | | 0.0 | |
| Walking Speed (ft/s) | | 3.5 | 3.5 | | 3.5 | |
| Percent Blockage | | 0 | 0 | | 0 | |
| Right turn flare (veh) | | | | | | |
| Median type | | None | None | | | |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | 618 | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 374 | | | | 640 | 372 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 374 | | | | 640 | 372 |
| tC, single (s) | 4.1 | | | | 6.4 | 7.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 2.2 | | | | 3.5 | 4.2 |
| p0 queue free % | 100 | | | | 100 | 100 |
| cM capacity (veh/h) | 1196 | | | | 440 | 501 |
| Direction, Lane # | EB 1 | WB 1 | | | | |
| Volume Total | 263 | 363 | | | | |
| Volume Left | 4 | 0 | | | | |
| Volume Right | 0 | 8 | | | | |
| cSH | 1196 | 1700 | | | | |
| Volume to Capacity | 0.00 | 0.21 | | | | |
| Queue Length 95th (ft) | 0 | 0 | | | | |
| Control Delay (s) | 0.2 | 0.0 | | | | |
| Lane LOS | A | | | | | |
| Approach Delay (s) | 0.2 | 0.0 | | | | |
| Approach LOS | | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | 0.1 | | | | |
| Intersection Capacity Utilization | | 30.0% | | ICU Level of Service | | A |
| Analysis Period (min) | | 15 | | | | |

HCM 6th AWSC
4: Royal St/Myrick St & Coolidge Rd

05/28/2019

| Intersection | | | | | | | | | | | | |
|---------------------------|-----|--|--|--|--|--|--|--|--|--|--|--|
| Intersection Delay, s/veh | 7.1 | | | | | | | | | | | |
| Intersection LOS | A | | | | | | | | | | | |


















| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations | | ↰ | | | | | | ↱ | | | | |
| Traffic Vol, veh/h | 1 | 34 | 0 | 0 | 0 | 0 | 0 | 16 | 28 | 0 | 0 | 0 |
| Future Vol, veh/h | 1 | 34 | 0 | 0 | 0 | 0 | 0 | 16 | 28 | 0 | 0 | 0 |
| Peak Hour Factor | 0.67 | 0.67 | 0.67 | 0.25 | 0.25 | 0.25 | 0.69 | 0.69 | 0.69 | 0.25 | 0.25 | 0.25 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 |
| Mvmt Flow | 1 | 51 | 0 | 0 | 0 | 0 | 0 | 23 | 41 | 0 | 0 | 0 |
| Number of Lanes | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |

| Approach | EB | NB |
|----------------------------|-----|----|
| Opposing Approach | | |
| Opposing Lanes | 0 | 0 |
| Conflicting Approach Left | | EB |
| Conflicting Lanes Left | 0 | 1 |
| Conflicting Approach Right | NB | |
| Conflicting Lanes Right | 1 | 0 |
| HCM Control Delay | 7.3 | 7 |
| HCM LOS | A | A |

| Lane | NBLn1 | EBLn1 |
|------------------------|-------|-------|
| Vol Left, % | 0% | 3% |
| Vol Thru, % | 36% | 97% |
| Vol Right, % | 64% | 0% |
| Sign Control | Stop | Stop |
| Traffic Vol by Lane | 44 | 35 |
| LT Vol | 0 | 1 |
| Through Vol | 16 | 34 |
| RT Vol | 28 | 0 |
| Lane Flow Rate | 64 | 52 |
| Geometry Grp | 1 | 1 |
| Degree of Util (X) | 0.066 | 0.058 |
| Departure Headway (Hd) | 3.71 | 4.018 |
| Convergence, Y/N | Yes | Yes |
| Cap | 965 | 893 |
| Service Time | 1.734 | 2.035 |
| HCM Lane V/C Ratio | 0.066 | 0.058 |
| HCM Control Delay | 7 | 7.3 |
| HCM Lane LOS | A | A |
| HCM 95th-tile Q | 0.2 | 0.2 |

Lanes, Volumes, Timings
1: Cambridge St & Lincoln St

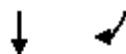
05/29/2019

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBL | NBT | NBR | SBL |
| Lane Configurations | |  |  | | |  |  | | |  | | |
| Traffic Volume (vph) | 9 | 140 | 1246 | 0 | 15 | 0 | 1110 | 192 | 0 | 0 | 0 | 153 |
| Future Volume (vph) | 9 | 140 | 1246 | 0 | 15 | 0 | 1110 | 192 | 0 | 0 | 0 | 153 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 11 | 11 | 11 | 12 | 11 | 11 | 11 | 11 | 11 | 11 | 11 |
| Storage Length (ft) | | 130 | | 0 | | 135 | | 0 | 0 | | 0 | 0 |
| Storage Lanes | | 1 | | 0 | | 1 | | 0 | 0 | | 0 | 0 |
| Taper Length (ft) | | 25 | | | | 25 | | | 25 | | | 25 |
| Lane Util. Factor | 0.95 | 1.00 | 0.95 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | 0.98 | | | | | |
| Frt | | | | | | | 0.978 | | | | | |
| Flt Protected | | 0.950 | | | | 0.950 | | | | | | |
| Satd. Flow (prot) | 0 | 1556 | 3079 | 0 | 0 | 1570 | 2987 | 0 | 0 | 1653 | 0 | 0 |
| Flt Permitted | | 0.950 | | | | 0.950 | | | | | | |
| Satd. Flow (perm) | 0 | 1556 | 3079 | 0 | 0 | 1570 | 2987 | 0 | 0 | 1653 | 0 | 0 |
| Right Turn on Red | | | | Yes | | | | Yes | | | Yes | |
| Satd. Flow (RTOR) | | | | | | | 21 | | | | | |
| Link Speed (mph) | | | 25 | | | | 25 | | | 25 | | |
| Link Distance (ft) | | | 937 | | | | 490 | | | 338 | | |
| Travel Time (s) | | | 25.6 | | | | 13.4 | | | 9.2 | | |
| Confl. Peds. (#/hr) | | | | 11 | | | | 38 | 5 | | 4 | 4 |
| Confl. Bikes (#/hr) | | | | 11 | | | | 15 | | | | |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.95 | 0.95 | 0.95 | 0.95 | 0.25 | 0.25 | 0.25 | 0.86 |
| Heavy Vehicles (%) | 0% | 1% | 2% | 0% | 0% | 0% | 1% | 0% | 0% | 0% | 0% | 1% |
| Adj. Flow (vph) | 10 | 159 | 1416 | 0 | 16 | 0 | 1168 | 202 | 0 | 0 | 0 | 178 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 169 | 1416 | 0 | 0 | 16 | 1370 | 0 | 0 | 0 | 0 | 0 |
| Turn Type | Prot | Prot | NA | | custom | Prot | NA | | | | | Perm |
| Protected Phases | 5 | 5 | 2 | | 1 | 1 | 6 | | | 4 | | |
| Permitted Phases | | | | | 1 | | | | 4 | | | 4 |
| Detector Phase | 5 | 5 | 2 | | 1 | 1 | 6 | | 4 | 4 | | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 10.0 | | 4.0 | 4.0 | 10.0 | | 8.0 | 8.0 | | 8.0 |
| Minimum Split (s) | 10.0 | 10.0 | 15.5 | | 9.5 | 9.5 | 26.5 | | 32.0 | 32.0 | | 32.0 |
| Total Split (s) | 27.0 | 27.0 | 62.0 | | 15.0 | 15.0 | 50.0 | | 33.0 | 33.0 | | 33.0 |
| Total Split (%) | 24.5% | 24.5% | 56.4% | | 13.6% | 13.6% | 45.5% | | 30.0% | 30.0% | | 30.0% |
| Yellow Time (s) | 3.5 | 3.5 | 4.5 | | 3.0 | 3.0 | 4.5 | | 4.0 | 4.0 | | 4.0 |
| All-Red Time (s) | 2.5 | 2.5 | 1.0 | | 2.5 | 2.5 | 1.0 | | 3.0 | 3.0 | | 3.0 |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | | 0.0 | 0.0 | | | 0.0 | | |
| Total Lost Time (s) | | 6.0 | 5.5 | | | 5.5 | 5.5 | | | 7.0 | | |
| Lead/Lag | Lead | Lead | Lag | | Lead | Lead | Lag | | | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | | Yes | Yes | Yes | | | | | |
| Recall Mode | None | None | C-Max | | None | None | C-Max | | None | None | | None |
| Act Effect Green (s) | | 15.9 | 72.9 | | | 5.7 | 56.0 | | | | | |
| Actuated g/C Ratio | | 0.14 | 0.66 | | | 0.05 | 0.51 | | | | | |
| v/c Ratio | | 0.75 | 0.69 | | | 0.20 | 0.89 | | | | | |
| Control Delay | | 65.4 | 16.6 | | | 54.8 | 35.1 | | | | | |
| Queue Delay | | 0.0 | 0.0 | | | 0.0 | 0.0 | | | | | |
| Total Delay | | 65.4 | 16.6 | | | 54.8 | 35.1 | | | | | |

Lanes, Volumes, Timings

1: Cambridge St & Lincoln St

05/29/2019



| Lane Group | SBT | SBR |
|-------------------------|-------|-------|
| Lane Configurations | ↔ | ↗ |
| Traffic Volume (vph) | 0 | 54 |
| Future Volume (vph) | 0 | 54 |
| Ideal Flow (vphpl) | 1900 | 1900 |
| Lane Width (ft) | 11 | 11 |
| Storage Length (ft) | | 0 |
| Storage Lanes | | 1 |
| Taper Length (ft) | | |
| Lane Util. Factor | 1.00 | 1.00 |
| Ped Bike Factor | 0.99 | 0.98 |
| Frt | | 0.850 |
| Flt Protected | 0.950 | |
| Satd. Flow (prot) | 1555 | 1378 |
| Flt Permitted | 0.757 | |
| Satd. Flow (perm) | 1232 | 1352 |
| Right Turn on Red | | Yes |
| Satd. Flow (RTOR) | | 139 |
| Link Speed (mph) | 25 | |
| Link Distance (ft) | 188 | |
| Travel Time (s) | 5.1 | |
| Confl. Peds. (#/hr) | | 5 |
| Confl. Bikes (#/hr) | | |
| Peak Hour Factor | 0.86 | 0.86 |
| Heavy Vehicles (%) | 0% | 2% |
| Adj. Flow (vph) | 0 | 63 |
| Shared Lane Traffic (%) | | |
| Lane Group Flow (vph) | 178 | 63 |
| Turn Type | NA | Perm |
| Protected Phases | 4 | |
| Permitted Phases | | 4 |
| Detector Phase | 4 | 4 |
| Switch Phase | | |
| Minimum Initial (s) | 8.0 | 8.0 |
| Minimum Split (s) | 32.0 | 32.0 |
| Total Split (s) | 33.0 | 33.0 |
| Total Split (%) | 30.0% | 30.0% |
| Yellow Time (s) | 4.0 | 4.0 |
| All-Red Time (s) | 3.0 | 3.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 |
| Total Lost Time (s) | 7.0 | 7.0 |
| Lead/Lag | | |
| Lead-Lag Optimize? | | |
| Recall Mode | None | None |
| Act Effct Green (s) | 19.6 | 19.6 |
| Actuated g/C Ratio | 0.18 | 0.18 |
| v/c Ratio | 0.81 | 0.18 |
| Control Delay | 69.4 | 1.1 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 69.4 | 1.1 |

Lanes, Volumes, Timings

1: Cambridge St & Lincoln St

05/29/2019



| Lane Group | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBL | NBT | NBR | SBL |
|-------------------------|-----|------|------|-----|-----|------|------|-----|-----|-----|-----|-----|
| LOS | | E | B | | | D | D | | | | | |
| Approach Delay | | | 21.8 | | | | 35.3 | | | | | |
| Approach LOS | | | C | | | | D | | | | | |
| Queue Length 50th (ft) | | 116 | 255 | | | 11 | 445 | | | | | |
| Queue Length 95th (ft) | | 177 | 524 | | | 34 | #724 | | | | | |
| Internal Link Dist (ft) | | | 857 | | | | 410 | | | 258 | | |
| Turn Bay Length (ft) | | 130 | | | | 135 | | | | | | |
| Base Capacity (vph) | | 297 | 2040 | | | 135 | 1531 | | | | | |
| Starvation Cap Reductn | | 0 | 0 | | | 0 | 0 | | | | | |
| Spillback Cap Reductn | | 0 | 0 | | | 0 | 0 | | | | | |
| Storage Cap Reductn | | 0 | 0 | | | 0 | 0 | | | | | |
| Reduced v/c Ratio | | 0.57 | 0.69 | | | 0.12 | 0.89 | | | | | |

Intersection Summary

Area Type: CBD

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 29.9

Intersection LOS: C

Intersection Capacity Utilization 82.8%

ICU Level of Service E

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Cambridge St & Lincoln St



Lanes, Volumes, Timings
1: Cambridge St & Lincoln St




05/29/2019



| Lane Group | SBT | SBR |
|-------------------------|------|------|
| LOS | E | A |
| Approach Delay | 51.5 | |
| Approach LOS | D | |
| Queue Length 50th (ft) | 121 | 0 |
| Queue Length 95th (ft) | 179 | 0 |
| Internal Link Dist (ft) | 108 | |
| Turn Bay Length (ft) | | |
| Base Capacity (vph) | 291 | 425 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.61 | 0.15 |
| Intersection Summary | | |

HCM 6th TWSC
2: Lincoln St & Empire St

05/28/2019

| Intersection | | | | | | |
|--------------------------|---|--------|---|------|------|---|
| Int Delay, s/veh | 4 | | | | | |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations |  | |  | | |  |
| Traffic Vol, veh/h | 21 | 169 | 334 | 0 | 0 | 186 |
| Future Vol, veh/h | 21 | 169 | 334 | 0 | 0 | 186 |
| Conflicting Peds, #/hr | 4 | 0 | 0 | 5 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | Free |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 77 | 77 | 88 | 88 | 73 | 73 |
| Heavy Vehicles, % | 0 | 0 | 1 | 0 | 0 | 2 |
| Mvmt Flow | 27 | 219 | 380 | 0 | 0 | 255 |
| Major/Minor | Minor1 | Major1 | Major2 | | | |
| Conflicting Flow All | 639 | 380 | 0 | - | - | - |
| Stage 1 | 380 | - | - | - | - | - |
| Stage 2 | 259 | - | - | - | - | - |
| Critical Hdwy | 6.4 | 6.2 | - | - | - | - |
| Critical Hdwy Stg 1 | 5.4 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.4 | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3 | - | - | - | - |
| Pot Cap-1 Maneuver | 443 | 671 | - | 0 | 0 | - |
| Stage 1 | 696 | - | - | 0 | 0 | - |
| Stage 2 | 789 | - | - | 0 | 0 | - |
| Platoon blocked, % | | | - | | | - |
| Mov Cap-1 Maneuver | 442 | 671 | - | - | - | - |
| Mov Cap-2 Maneuver | 442 | - | - | - | - | - |
| Stage 1 | 696 | - | - | - | - | - |
| Stage 2 | 787 | - | - | - | - | - |
| Approach | WB | NB | SB | | | |
| HCM Control Delay, s | 14.2 | 0 | 0 | | | |
| HCM LOS | B | | | | | |
| Minor Lane/Major Mvmt | NBTWBLn1 | | SBT | | | |
| Capacity (veh/h) | - 635 | | - | | | |
| HCM Lane V/C Ratio | - 0.389 | | - | | | |
| HCM Control Delay (s) | - 14.2 | | - | | | |
| HCM Lane LOS | - B | | - | | | |
| HCM 95th %tile Q(veh) | - 1.8 | | - | | | |

HCM Unsignalized Intersection Capacity Analysis

3: Lincoln St./Empire St

05/28/2019



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|-----------------------------------|------|-------|------|----------------------|------|------|
| Lane Configurations | | ↩ | ↩ | | | |
| Traffic Volume (veh/h) | 12 | 183 | 470 | 24 | 0 | 0 |
| Future Volume (Veh/h) | 12 | 183 | 470 | 24 | 0 | 0 |
| Sign Control | | Free | Free | | Stop | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.79 | 0.79 | 0.85 | 0.85 | 0.25 | 0.25 |
| Hourly flow rate (vph) | 15 | 232 | 553 | 28 | 0 | 0 |
| Pedestrians | | 4 | 2 | | 19 | |
| Lane Width (ft) | | 11.0 | 11.0 | | 0.0 | |
| Walking Speed (ft/s) | | 3.5 | 3.5 | | 3.5 | |
| Percent Blockage | | 0 | 0 | | 0 | |
| Right turn flare (veh) | | | | | | |
| Median type | | None | None | | | |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | 618 | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 600 | | | | 850 | 590 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 600 | | | | 850 | 590 |
| 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) | 987 | | | | 328 | 509 |
| Direction, Lane # | EB 1 | WB 1 | | | | |
| Volume Total | 247 | 581 | | | | |
| Volume Left | 15 | 0 | | | | |
| Volume Right | 0 | 28 | | | | |
| cSH | 987 | 1700 | | | | |
| Volume to Capacity | 0.02 | 0.34 | | | | |
| Queue Length 95th (ft) | 1 | 0 | | | | |
| Control Delay (s) | 0.7 | 0.0 | | | | |
| Lane LOS | A | | | | | |
| Approach Delay (s) | 0.7 | 0.0 | | | | |
| Approach LOS | | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | 0.2 | | | | |
| Intersection Capacity Utilization | | 40.4% | | ICU Level of Service | | A |
| Analysis Period (min) | | 15 | | | | |

HCM 6th AWSC
4: Royal St/Myrick St & Coolidge Rd

05/28/2019

| Intersection | | | | | | | | | | | | |
|---------------------------|---|--|--|--|--|--|--|--|--|--|--|--|
| Intersection Delay, s/veh | 7 | | | | | | | | | | | |
| Intersection LOS | A | | | | | | | | | | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations | | ↰ | | | | | | ↱ | | | | |
| Traffic Vol, veh/h | 3 | 25 | 0 | 0 | 0 | 0 | 0 | 23 | 43 | 0 | 0 | 0 |
| Future Vol, veh/h | 3 | 25 | 0 | 0 | 0 | 0 | 0 | 23 | 43 | 0 | 0 | 0 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.25 | 0.25 | 0.25 | 0.79 | 0.79 | 0.79 | 0.25 | 0.25 | 0.25 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mvmt Flow | 3 | 28 | 0 | 0 | 0 | 0 | 0 | 29 | 54 | 0 | 0 | 0 |
| Number of Lanes | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |

| Approach | EB | NB |
|----------------------------|-----|-----|
| Opposing Approach | | |
| Opposing Lanes | 0 | 0 |
| Conflicting Approach Left | | EB |
| Conflicting Lanes Left | 0 | 1 |
| Conflicting Approach Right | NB | |
| Conflicting Lanes Right | 1 | 0 |
| HCM Control Delay | 7.2 | 6.9 |
| HCM LOS | A | A |

| Lane | NBLn1 | EBLn1 |
|------------------------|-------|-------|
| Vol Left, % | 0% | 11% |
| Vol Thru, % | 35% | 89% |
| Vol Right, % | 65% | 0% |
| Sign Control | Stop | Stop |
| Traffic Vol by Lane | 66 | 28 |
| LT Vol | 0 | 3 |
| Through Vol | 23 | 25 |
| RT Vol | 43 | 0 |
| Lane Flow Rate | 84 | 32 |
| Geometry Grp | 1 | 1 |
| Degree of Util (X) | 0.083 | 0.036 |
| Departure Headway (Hd) | 3.564 | 4.067 |
| Convergence, Y/N | Yes | Yes |
| Cap | 1007 | 882 |
| Service Time | 1.58 | 2.085 |
| HCM Lane V/C Ratio | 0.083 | 0.036 |
| HCM Control Delay | 6.9 | 7.2 |
| HCM Lane LOS | A | A |
| HCM 95th-tile Q | 0.3 | 0.1 |

Lanes, Volumes, Timings

1: Cambridge St & Lincoln St

05/28/2019



| Lane Group | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBL | NBT | NBR | SBL |
|-------------------------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 8 | 77 | 1634 | 5 | 18 | 5 | 924 | 155 | 0 | 0 | 3 | 192 |
| Future Volume (vph) | 8 | 77 | 1634 | 5 | 18 | 5 | 924 | 155 | 0 | 0 | 3 | 192 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 10 | 10 | 11 | 11 | 10 | 10 | 11 | 11 | 11 | 11 | 11 | 11 |
| Storage Length (ft) | | 130 | | 0 | | 135 | | 0 | 0 | | 0 | 0 |
| Storage Lanes | | 1 | | 0 | | 1 | | 0 | 0 | | 0 | 0 |
| Taper Length (ft) | | 25 | | | | 25 | | | 25 | | | 25 |
| Lane Util. Factor | 0.95 | 1.00 | 0.95 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | 1.00 | | | | 0.99 | | | 0.98 | | |
| Frt | | | | | | | 0.978 | | | 0.865 | | |
| Flt Protected | | 0.950 | | | | 0.950 | | | | | | |
| Satd. Flow (prot) | 0 | 1463 | 3079 | 0 | 0 | 1456 | 2922 | 0 | 0 | 1407 | 0 | 0 |
| Flt Permitted | | 0.950 | | | | 0.950 | | | | | | |
| Satd. Flow (perm) | 0 | 1463 | 3079 | 0 | 0 | 1456 | 2922 | 0 | 0 | 1407 | 0 | 0 |
| Right Turn on Red | | | | Yes | | | | Yes | | | Yes | |
| Satd. Flow (RTOR) | | | | | | | 21 | | | 139 | | |
| Link Speed (mph) | | | 25 | | | | 25 | | | 25 | | |
| Link Distance (ft) | | | 937 | | | | 490 | | | 338 | | |
| Travel Time (s) | | | 25.6 | | | | 13.4 | | | 9.2 | | |
| Confl. Peds. (#/hr) | | | | 8 | | | | 8 | | | 3 | 3 |
| Confl. Bikes (#/hr) | | | | 14 | | | | 5 | | | | |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.94 | 0.94 | 0.94 | 0.94 | 0.75 | 0.75 | 0.75 | 0.91 |
| Heavy Vehicles (%) | 0% | 4% | 2% | 0% | 0% | 20% | 5% | 1% | 0% | 0% | 0% | 1% |
| Adj. Flow (vph) | 9 | 83 | 1757 | 5 | 19 | 5 | 983 | 165 | 0 | 0 | 4 | 211 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 92 | 1762 | 0 | 0 | 24 | 1148 | 0 | 0 | 4 | 0 | 0 |
| Turn Type | Prot | Prot | NA | | Prot | Prot | NA | | | NA | | Perm |
| Protected Phases | 5 | 5 | 2 | | 1 | 1 | 6 | | | 4 | | |
| Permitted Phases | | | | | | | | | 4 | | | 4 |
| Detector Phase | 5 | 5 | 2 | | 1 | 1 | 6 | | 4 | 4 | | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 10.0 | | 4.0 | 4.0 | 10.0 | | 8.0 | 8.0 | | 8.0 |
| Minimum Split (s) | 10.0 | 10.0 | 15.5 | | 9.5 | 9.5 | 26.5 | | 32.0 | 32.0 | | 32.0 |
| Total Split (s) | 23.0 | 23.0 | 59.0 | | 14.0 | 14.0 | 50.0 | | 37.0 | 37.0 | | 37.0 |
| Total Split (%) | 20.9% | 20.9% | 53.6% | | 12.7% | 12.7% | 45.5% | | 33.6% | 33.6% | | 33.6% |
| Yellow Time (s) | 3.5 | 3.5 | 4.5 | | 3.0 | 3.0 | 4.5 | | 4.0 | 4.0 | | 4.0 |
| All-Red Time (s) | 2.5 | 2.5 | 1.0 | | 2.5 | 2.5 | 1.0 | | 3.0 | 3.0 | | 3.0 |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | | 0.0 | 0.0 | | | 0.0 | | |
| Total Lost Time (s) | | 6.0 | 5.5 | | | 5.5 | 5.5 | | | 7.0 | | |
| Lead/Lag | Lead | Lead | Lag | | Lead | Lead | Lag | | | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | | Yes | Yes | Yes | | | | | |
| Recall Mode | None | None | C-Max | | None | None | C-Max | | None | None | | None |
| Act Effect Green (s) | | 11.3 | 66.5 | | | 6.3 | 59.4 | | | 23.3 | | |
| Actuated g/C Ratio | | 0.10 | 0.60 | | | 0.06 | 0.54 | | | 0.21 | | |
| v/c Ratio | | 0.61 | 0.95 | | | 0.29 | 0.72 | | | 0.01 | | |
| Control Delay | | 63.8 | 35.0 | | | 57.8 | 25.4 | | | 0.0 | | |
| Queue Delay | | 0.0 | 0.0 | | | 0.0 | 0.0 | | | 0.0 | | |
| Total Delay | | 63.8 | 35.0 | | | 57.8 | 25.4 | | | 0.0 | | |

Lanes, Volumes, Timings
1: Cambridge St & Lincoln St

05/28/2019

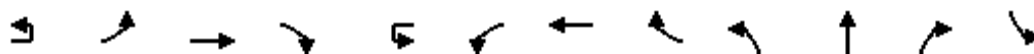


| Lane Group | SBT | SBR |
|-------------------------|-------|-------|
| Lane Configurations | ↔ | ↗ |
| Traffic Volume (vph) | 1 | 79 |
| Future Volume (vph) | 1 | 79 |
| Ideal Flow (vphpl) | 1900 | 1900 |
| Lane Width (ft) | 11 | 10 |
| Storage Length (ft) | | 0 |
| Storage Lanes | | 1 |
| Taper Length (ft) | | |
| Lane Util. Factor | 1.00 | 1.00 |
| Ped Bike Factor | 1.00 | 0.98 |
| Frt | | 0.850 |
| Flt Protected | 0.953 | |
| Satd. Flow (prot) | 1560 | 1343 |
| Flt Permitted | 0.725 | |
| Satd. Flow (perm) | 1182 | 1323 |
| Right Turn on Red | | Yes |
| Satd. Flow (RTOR) | | 139 |
| Link Speed (mph) | 25 | |
| Link Distance (ft) | 188 | |
| Travel Time (s) | 5.1 | |
| Confl. Peds. (#/hr) | | |
| Confl. Bikes (#/hr) | | 4 |
| Peak Hour Factor | 0.91 | 0.91 |
| Heavy Vehicles (%) | 0% | 1% |
| Adj. Flow (vph) | 1 | 87 |
| Shared Lane Traffic (%) | | |
| Lane Group Flow (vph) | 212 | 87 |
| Turn Type | NA | Perm |
| Protected Phases | 4 | |
| Permitted Phases | | 4 |
| Detector Phase | 4 | 4 |
| Switch Phase | | |
| Minimum Initial (s) | 8.0 | 8.0 |
| Minimum Split (s) | 32.0 | 32.0 |
| Total Split (s) | 37.0 | 37.0 |
| Total Split (%) | 33.6% | 33.6% |
| Yellow Time (s) | 4.0 | 4.0 |
| All-Red Time (s) | 3.0 | 3.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 |
| Total Lost Time (s) | 7.0 | 7.0 |
| Lead/Lag | | |
| Lead-Lag Optimize? | | |
| Recall Mode | None | None |
| Act Effect Green (s) | 23.3 | 23.3 |
| Actuated g/C Ratio | 0.21 | 0.21 |
| v/c Ratio | 0.85 | 0.22 |
| Control Delay | 69.6 | 2.4 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 69.6 | 2.4 |

Lanes, Volumes, Timings

1: Cambridge St & Lincoln St

05/28/2019



| Lane Group | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBL | NBT | NBR | SBL |
|-------------------------|-----|------|------|-----|-----|------|------|-----|-----|------|-----|-----|
| LOS | | E | C | | | E | C | | | A | | |
| Approach Delay | | | 36.4 | | | | 26.1 | | | | | |
| Approach LOS | | | D | | | | C | | | | | |
| Queue Length 50th (ft) | | 63 | ~696 | | | 17 | 324 | | | 0 | | |
| Queue Length 95th (ft) | | 112 | #924 | | | 44 | #550 | | | 0 | | |
| Internal Link Dist (ft) | | | 857 | | | | 410 | | | 258 | | |
| Turn Bay Length (ft) | | 130 | | | | 135 | | | | | | |
| Base Capacity (vph) | | 226 | 1862 | | | 112 | 1587 | | | 484 | | |
| Starvation Cap Reductn | | 0 | 0 | | | 0 | 0 | | | 0 | | |
| Spillback Cap Reductn | | 0 | 0 | | | 0 | 0 | | | 0 | | |
| Storage Cap Reductn | | 0 | 0 | | | 0 | 0 | | | 0 | | |
| Reduced v/c Ratio | | 0.41 | 0.95 | | | 0.21 | 0.72 | | | 0.01 | | |

Intersection Summary

Area Type: CBD

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 7 (6%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.95

Intersection Signal Delay: 34.0

Intersection LOS: C

Intersection Capacity Utilization 87.2%

ICU Level of Service E

Analysis Period (min) 15

~ 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.

Splits and Phases: 1: Cambridge St & Lincoln St



Lanes, Volumes, Timings
1: Cambridge St & Lincoln St

05/28/2019



| Lane Group | SBT | SBR |
|-------------------------|------|------|
| LOS | E | A |
| Approach Delay | 50.0 | |
| Approach LOS | D | |
| Queue Length 50th (ft) | 143 | 0 |
| Queue Length 95th (ft) | 220 | 10 |
| Internal Link Dist (ft) | 108 | |
| Turn Bay Length (ft) | | |
| Base Capacity (vph) | 322 | 461 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.66 | 0.19 |
| Intersection Summary | | |




HCM 6th TWSC

2: Lincoln St & Empire St

05/28/2019

Intersection

Int Delay, s/veh 2.7

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|--------------------------|---|------|---|------|------|---|
| Lane Configurations |  | |  | | |  |
| Traffic Vol, veh/h | 26 | 108 | 239 | 0 | 0 | 250 |
| Future Vol, veh/h | 26 | 108 | 239 | 0 | 0 | 250 |
| Conflicting Peds, #/hr | 5 | 0 | 0 | 1 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | Free |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 86 | 86 | 90 | 90 | 94 | 94 |
| Heavy Vehicles, % | 8 | 2 | 7 | 0 | 0 | 3 |
| Mvmt Flow | 30 | 126 | 266 | 0 | 0 | 266 |

| Major/Minor | Minor1 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 537 | 266 | 0 |
| Stage 1 | 266 | - | - |
| Stage 2 | 271 | - | - |
| Critical Hdwy | 6.48 | 6.22 | - |
| Critical Hdwy Stg 1 | 5.48 | - | - |
| Critical Hdwy Stg 2 | 5.48 | - | - |
| Follow-up Hdwy | 3.572 | 3.318 | - |
| Pot Cap-1 Maneuver | 495 | 773 | - |
| Stage 1 | 765 | - | - |
| Stage 2 | 761 | - | - |
| Platoon blocked, % | | - | - |
| Mov Cap-1 Maneuver | 493 | 773 | - |
| Mov Cap-2 Maneuver | 493 | - | - |
| Stage 1 | 765 | - | - |
| Stage 2 | 758 | - | - |

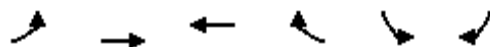
| Approach | WB | NB | SB |
|----------------------|------|----|----|
| HCM Control Delay, s | 11.7 | 0 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBTWBLn1 | SBT |
|-----------------------|----------|-----|
| Capacity (veh/h) | - 696 | - |
| HCM Lane V/C Ratio | - 0.224 | - |
| HCM Control Delay (s) | - 11.7 | - |
| HCM Lane LOS | - B | - |
| HCM 95th %tile Q(veh) | - 0.9 | - |

HCM Unsignalized Intersection Capacity Analysis

3: Lincoln St./Empire St

05/28/2019



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|-----------------------------------|------|-------|------|----------------------|------|------|
| Lane Configurations | | ↩ | ↩ | | | |
| Traffic Volume (veh/h) | 4 | 242 | 331 | 7 | 0 | 0 |
| Future Volume (Veh/h) | 4 | 242 | 331 | 7 | 0 | 0 |
| Sign Control | | Free | Free | | Stop | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.50 | 0.50 |
| Hourly flow rate (vph) | 4 | 266 | 364 | 8 | 0 | 0 |
| Pedestrians | | 2 | 3 | | 11 | |
| Lane Width (ft) | | 11.0 | 11.0 | | 0.0 | |
| Walking Speed (ft/s) | | 3.5 | 3.5 | | 3.5 | |
| Percent Blockage | | 0 | 0 | | 0 | |
| Right turn flare (veh) | | | | | | |
| Median type | | None | None | | | |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | 618 | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 383 | | | | 656 | 381 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 383 | | | | 656 | 381 |
| tC, single (s) | 4.1 | | | | 6.4 | 7.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 2.2 | | | | 3.5 | 4.2 |
| p0 queue free % | 100 | | | | 100 | 100 |
| cM capacity (veh/h) | 1187 | | | | 431 | 495 |
| Direction, Lane # | EB 1 | WB 1 | | | | |
| Volume Total | 270 | 372 | | | | |
| Volume Left | 4 | 0 | | | | |
| Volume Right | 0 | 8 | | | | |
| cSH | 1187 | 1700 | | | | |
| Volume to Capacity | 0.00 | 0.22 | | | | |
| Queue Length 95th (ft) | 0 | 0 | | | | |
| Control Delay (s) | 0.2 | 0.0 | | | | |
| Lane LOS | A | | | | | |
| Approach Delay (s) | 0.2 | 0.0 | | | | |
| Approach LOS | | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | 0.1 | | | | |
| Intersection Capacity Utilization | | 30.5% | | ICU Level of Service | | A |
| Analysis Period (min) | | 15 | | | | |

HCM 6th AWSC

4: Royal St/Myrick St & Coolidge Rd

05/28/2019

| Intersection | | | | | | | | | | | | |
|---------------------------|-----|--|--|--|--|--|--|--|--|--|--|--|
| Intersection Delay, s/veh | 7.1 | | | | | | | | | | | |
| Intersection LOS | A | | | | | | | | | | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations | | ↰ | | | | | | ↱ | | | | |
| Traffic Vol, veh/h | 1 | 35 | 0 | 0 | 0 | 0 | 0 | 16 | 29 | 0 | 0 | 0 |
| Future Vol, veh/h | 1 | 35 | 0 | 0 | 0 | 0 | 0 | 16 | 29 | 0 | 0 | 0 |
| Peak Hour Factor | 0.67 | 0.67 | 0.67 | 0.25 | 0.25 | 0.25 | 0.69 | 0.69 | 0.69 | 0.25 | 0.25 | 0.25 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 |
| Mvmt Flow | 1 | 52 | 0 | 0 | 0 | 0 | 0 | 23 | 42 | 0 | 0 | 0 |
| Number of Lanes | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |

| Approach | EB | NB |
|----------------------------|-----|----|
| Opposing Approach | | |
| Opposing Lanes | 0 | 0 |
| Conflicting Approach Left | | EB |
| Conflicting Lanes Left | 0 | 1 |
| Conflicting Approach Right | NB | |
| Conflicting Lanes Right | 1 | 0 |
| HCM Control Delay | 7.3 | 7 |
| HCM LOS | A | A |

| Lane | NBLn1 | EBLn1 |
|------------------------|-------|-------|
| Vol Left, % | 0% | 3% |
| Vol Thru, % | 36% | 97% |
| Vol Right, % | 64% | 0% |
| Sign Control | Stop | Stop |
| Traffic Vol by Lane | 45 | 36 |
| LT Vol | 0 | 1 |
| Through Vol | 16 | 35 |
| RT Vol | 29 | 0 |
| Lane Flow Rate | 65 | 54 |
| Geometry Grp | 1 | 1 |
| Degree of Util (X) | 0.067 | 0.06 |
| Departure Headway (Hd) | 3.709 | 4.02 |
| Convergence, Y/N | Yes | Yes |
| Cap | 965 | 892 |
| Service Time | 1.733 | 2.037 |
| HCM Lane V/C Ratio | 0.067 | 0.061 |
| HCM Control Delay | 7 | 7.3 |
| HCM Lane LOS | A | A |
| HCM 95th-tile Q | 0.2 | 0.2 |

Lanes, Volumes, Timings

1: Cambridge St & Lincoln St

05/28/2019

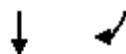


| Lane Group | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBL | NBT | NBR | SBL |
|-------------------------|-------|-------|-------|------|--------|-------|-------|------|-------|-------|------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 9 | 144 | 1420 | 0 | 15 | 0 | 1269 | 197 | 0 | 0 | 0 | 157 |
| Future Volume (vph) | 9 | 144 | 1420 | 0 | 15 | 0 | 1269 | 197 | 0 | 0 | 0 | 157 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 11 | 11 | 11 | 12 | 11 | 11 | 11 | 11 | 11 | 11 | 11 |
| Storage Length (ft) | | 130 | | 0 | | 135 | | 0 | 0 | | 0 | 0 |
| Storage Lanes | | 1 | | 0 | | 1 | | 0 | 0 | | 0 | 0 |
| Taper Length (ft) | | 25 | | | | 25 | | | 25 | | | 25 |
| Lane Util. Factor | 0.95 | 1.00 | 0.95 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | 0.98 | | | | | |
| Frt | | | | | | | 0.980 | | | | | |
| Flt Protected | | 0.950 | | | | 0.950 | | | | | | |
| Satd. Flow (prot) | 0 | 1556 | 3079 | 0 | 0 | 1570 | 2998 | 0 | 0 | 1653 | 0 | 0 |
| Flt Permitted | | 0.950 | | | | 0.950 | | | | | | |
| Satd. Flow (perm) | 0 | 1556 | 3079 | 0 | 0 | 1570 | 2998 | 0 | 0 | 1653 | 0 | 0 |
| Right Turn on Red | | | | Yes | | | | Yes | | | Yes | |
| Satd. Flow (RTOR) | | | | | | | 19 | | | | | |
| Link Speed (mph) | | | 25 | | | | 25 | | | 25 | | |
| Link Distance (ft) | | | 937 | | | | 490 | | | 338 | | |
| Travel Time (s) | | | 25.6 | | | | 13.4 | | | 9.2 | | |
| Confl. Peds. (#/hr) | | | | 11 | | | | 38 | 5 | | 4 | 4 |
| Confl. Bikes (#/hr) | | | | 11 | | | | 15 | | | | |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.95 | 0.95 | 0.95 | 0.95 | 0.25 | 0.25 | 0.25 | 0.86 |
| Heavy Vehicles (%) | 0% | 1% | 2% | 0% | 0% | 0% | 1% | 0% | 0% | 0% | 0% | 1% |
| Adj. Flow (vph) | 10 | 164 | 1614 | 0 | 16 | 0 | 1336 | 207 | 0 | 0 | 0 | 183 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 174 | 1614 | 0 | 0 | 16 | 1543 | 0 | 0 | 0 | 0 | 0 |
| Turn Type | Prot | Prot | NA | | custom | Prot | NA | | | | | Perm |
| Protected Phases | 5 | 5 | 2 | | 1 | 1 | 6 | | | 4 | | |
| Permitted Phases | | | | | 1 | | | | 4 | | | 4 |
| Detector Phase | 5 | 5 | 2 | | 1 | 1 | 6 | | 4 | 4 | | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 10.0 | | 4.0 | 4.0 | 10.0 | | 8.0 | 8.0 | | 8.0 |
| Minimum Split (s) | 10.0 | 10.0 | 15.5 | | 9.5 | 9.5 | 26.5 | | 32.0 | 32.0 | | 32.0 |
| Total Split (s) | 27.0 | 27.0 | 62.0 | | 15.0 | 15.0 | 50.0 | | 33.0 | 33.0 | | 33.0 |
| Total Split (%) | 24.5% | 24.5% | 56.4% | | 13.6% | 13.6% | 45.5% | | 30.0% | 30.0% | | 30.0% |
| Yellow Time (s) | 3.5 | 3.5 | 4.5 | | 3.0 | 3.0 | 4.5 | | 4.0 | 4.0 | | 4.0 |
| All-Red Time (s) | 2.5 | 2.5 | 1.0 | | 2.5 | 2.5 | 1.0 | | 3.0 | 3.0 | | 3.0 |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | | 0.0 | 0.0 | | | 0.0 | | |
| Total Lost Time (s) | | 6.0 | 5.5 | | | 5.5 | 5.5 | | | 7.0 | | |
| Lead/Lag | Lead | Lead | Lag | | Lead | Lead | Lag | | | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | | Yes | Yes | Yes | | | | | |
| Recall Mode | None | None | C-Max | | None | None | C-Max | | None | None | | None |
| Act Effect Green (s) | | 16.1 | 72.5 | | | 5.7 | 55.4 | | | | | |
| Actuated g/C Ratio | | 0.15 | 0.66 | | | 0.05 | 0.50 | | | | | |
| v/c Ratio | | 0.76 | 0.80 | | | 0.20 | 1.02 | | | | | |
| Control Delay | | 65.8 | 20.2 | | | 54.8 | 56.0 | | | | | |
| Queue Delay | | 0.0 | 0.0 | | | 0.0 | 0.0 | | | | | |
| Total Delay | | 65.8 | 20.2 | | | 54.8 | 56.0 | | | | | |

Lanes, Volumes, Timings

1: Cambridge St & Lincoln St

05/28/2019















| Lane Group | SBT | SBR |
|-------------------------|-------|-------|
| Lane Configurations | ↔ | ↗ |
| Traffic Volume (vph) | 0 | 55 |
| Future Volume (vph) | 0 | 55 |
| Ideal Flow (vphpl) | 1900 | 1900 |
| Lane Width (ft) | 11 | 11 |
| Storage Length (ft) | | 0 |
| Storage Lanes | | 1 |
| Taper Length (ft) | | |
| Lane Util. Factor | 1.00 | 1.00 |
| Ped Bike Factor | 0.99 | 0.98 |
| Frt | | 0.850 |
| Flt Protected | 0.950 | |
| Satd. Flow (prot) | 1555 | 1378 |
| Flt Permitted | 0.757 | |
| Satd. Flow (perm) | 1232 | 1352 |
| Right Turn on Red | | Yes |
| Satd. Flow (RTOR) | | 139 |
| Link Speed (mph) | 25 | |
| Link Distance (ft) | 188 | |
| Travel Time (s) | 5.1 | |
| Confl. Peds. (#/hr) | | 5 |
| Confl. Bikes (#/hr) | | |
| Peak Hour Factor | 0.86 | 0.86 |
| Heavy Vehicles (%) | 0% | 2% |
| Adj. Flow (vph) | 0 | 64 |
| Shared Lane Traffic (%) | | |
| Lane Group Flow (vph) | 183 | 64 |
| Turn Type | NA | Perm |
| Protected Phases | 4 | |
| Permitted Phases | | 4 |
| Detector Phase | 4 | 4 |
| Switch Phase | | |
| Minimum Initial (s) | 8.0 | 8.0 |
| Minimum Split (s) | 32.0 | 32.0 |
| Total Split (s) | 33.0 | 33.0 |
| Total Split (%) | 30.0% | 30.0% |
| Yellow Time (s) | 4.0 | 4.0 |
| All-Red Time (s) | 3.0 | 3.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 |
| Total Lost Time (s) | 7.0 | 7.0 |
| Lead/Lag | | |
| Lead-Lag Optimize? | | |
| Recall Mode | None | None |
| Act Effect Green (s) | 20.0 | 20.0 |
| Actuated g/C Ratio | 0.18 | 0.18 |
| v/c Ratio | 0.82 | 0.18 |
| Control Delay | 69.8 | 1.1 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 69.8 | 1.1 |

Lanes, Volumes, Timings

1: Cambridge St & Lincoln St

05/28/2019

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBL | NBT | NBR | SBL |
| LOS | | E | C | | | D | E | | | | | |
| Approach Delay | | | 24.6 | | | | 55.9 | | | | | |
| Approach LOS | | | C | | | | E | | | | | |
| Queue Length 50th (ft) | | 119 | 337 | | | 11 | ~616 | | | | | |
| Queue Length 95th (ft) | | 182 | #724 | | | 34 | #863 | | | | | |
| Internal Link Dist (ft) | | | 857 | | | | 410 | | | 258 | | |
| Turn Bay Length (ft) | | 130 | | | | 135 | | | | | | |
| Base Capacity (vph) | | 297 | 2030 | | | 135 | 1519 | | | | | |
| Starvation Cap Reductn | | 0 | 0 | | | 0 | 0 | | | | | |
| Spillback Cap Reductn | | 0 | 0 | | | 0 | 0 | | | | | |
| Storage Cap Reductn | | 0 | 0 | | | 0 | 0 | | | | | |
| Reduced v/c Ratio | | 0.59 | 0.80 | | | 0.12 | 1.02 | | | | | |

Intersection Summary

Area Type: CBD

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.02

Intersection Signal Delay: 40.1

Intersection LOS: D

Intersection Capacity Utilization 88.2%

ICU Level of Service E

Analysis Period (min) 15

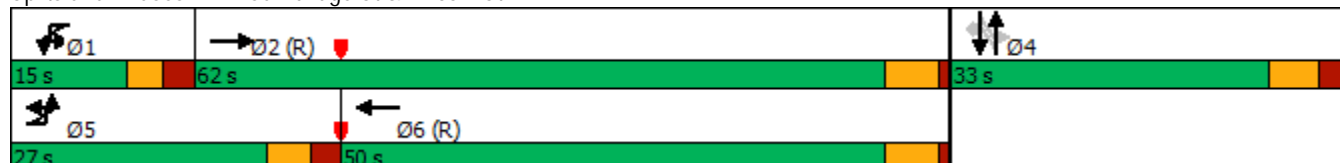
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

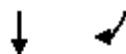
Queue shown is maximum after two cycles.

Splits and Phases: 1: Cambridge St & Lincoln St



Lanes, Volumes, Timings
1: Cambridge St & Lincoln St

05/28/2019






| Lane Group | SBT | SBR |
|-------------------------|------|------|
| LOS | E | A |
| Approach Delay | 52.0 | |
| Approach LOS | D | |
| Queue Length 50th (ft) | 124 | 0 |
| Queue Length 95th (ft) | 185 | 0 |
| Internal Link Dist (ft) | 108 | |
| Turn Bay Length (ft) | | |
| Base Capacity (vph) | 291 | 425 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.63 | 0.15 |
| Intersection Summary | | |

HCM 6th TWSC

2: Lincoln St & Empire St

05/28/2019

| Intersection | | | | | | |
|--------------------------|---|--------|---|------|------|---|
| Int Delay, s/veh | 4.1 | | | | | |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations |  | |  | | |  |
| Traffic Vol, veh/h | 22 | 173 | 342 | 0 | 0 | 191 |
| Future Vol, veh/h | 22 | 173 | 342 | 0 | 0 | 191 |
| Conflicting Peds, #/hr | 4 | 0 | 0 | 5 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | Free |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 77 | 77 | 88 | 88 | 73 | 73 |
| Heavy Vehicles, % | 0 | 0 | 1 | 0 | 0 | 2 |
| Mvmt Flow | 29 | 225 | 389 | 0 | 0 | 262 |
| Major/Minor | Minor1 | Major1 | Major2 | | | |
| Conflicting Flow All | 655 | 389 | 0 | - | - | - |
| Stage 1 | 389 | - | - | - | - | - |
| Stage 2 | 266 | - | - | - | - | - |
| Critical Hdwy | 6.4 | 6.2 | - | - | - | - |
| Critical Hdwy Stg 1 | 5.4 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.4 | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3 | - | - | - | - |
| Pot Cap-1 Maneuver | 434 | 664 | - | 0 | 0 | - |
| Stage 1 | 689 | - | - | 0 | 0 | - |
| Stage 2 | 783 | - | - | 0 | 0 | - |
| Platoon blocked, % | | | - | | | - |
| Mov Cap-1 Maneuver | 433 | 664 | - | - | - | - |
| Mov Cap-2 Maneuver | 433 | - | - | - | - | - |
| Stage 1 | 689 | - | - | - | - | - |
| Stage 2 | 781 | - | - | - | - | - |
| Approach | WB | NB | SB | | | |
| HCM Control Delay, s | 14.6 | 0 | 0 | | | |
| HCM LOS | B | | | | | |
| Minor Lane/Major Mvmt | NBTWBLn1 | | SBT | | | |
| Capacity (veh/h) | - 626 | | - | | | |
| HCM Lane V/C Ratio | - 0.405 | | - | | | |
| HCM Control Delay (s) | - 14.6 | | - | | | |
| HCM Lane LOS | - B | | - | | | |
| HCM 95th %tile Q(veh) | - 2 | | - | | | |

HCM Unsignalized Intersection Capacity Analysis

3: Lincoln St./Empire St

05/28/2019



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|-----------------------------------|------|-------|------|----------------------|------|------|
| Lane Configurations | | ↰ | ↰ | | | |
| Traffic Volume (veh/h) | 12 | 188 | 482 | 25 | 0 | 0 |
| Future Volume (Veh/h) | 12 | 188 | 482 | 25 | 0 | 0 |
| Sign Control | | Free | Free | | Stop | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.79 | 0.79 | 0.85 | 0.85 | 0.25 | 0.25 |
| Hourly flow rate (vph) | 15 | 238 | 567 | 29 | 0 | 0 |
| Pedestrians | | 4 | 2 | | 19 | |
| Lane Width (ft) | | 11.0 | 11.0 | | 0.0 | |
| Walking Speed (ft/s) | | 3.5 | 3.5 | | 3.5 | |
| Percent Blockage | | 0 | 0 | | 0 | |
| Right turn flare (veh) | | | | | | |
| Median type | | None | None | | | |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | 618 | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 615 | | | | 870 | 604 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 615 | | | | 870 | 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 | | | | 100 | 100 |
| cM capacity (veh/h) | 974 | | | | 319 | 500 |
| Direction, Lane # | EB 1 | WB 1 | | | | |
| Volume Total | 253 | 596 | | | | |
| Volume Left | 15 | 0 | | | | |
| Volume Right | 0 | 29 | | | | |
| cSH | 974 | 1700 | | | | |
| Volume to Capacity | 0.02 | 0.35 | | | | |
| Queue Length 95th (ft) | 1 | 0 | | | | |
| Control Delay (s) | 0.7 | 0.0 | | | | |
| Lane LOS | A | | | | | |
| Approach Delay (s) | 0.7 | 0.0 | | | | |
| Approach LOS | | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | 0.2 | | | | |
| Intersection Capacity Utilization | | 41.2% | | ICU Level of Service | | A |
| Analysis Period (min) | | 15 | | | | |

HCM 6th AWSC

4: Royal St/Myrick St & Coolidge Rd

05/28/2019

Intersection

Intersection Delay, s/veh

7

Intersection LOS

A

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations | | ↰ | | | | | | ↱ | | | | |
| Traffic Vol, veh/h | 3 | 26 | 0 | 0 | 0 | 0 | 0 | 24 | 44 | 0 | 0 | 0 |
| Future Vol, veh/h | 3 | 26 | 0 | 0 | 0 | 0 | 0 | 24 | 44 | 0 | 0 | 0 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.25 | 0.25 | 0.25 | 0.79 | 0.79 | 0.79 | 0.25 | 0.25 | 0.25 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mvmt Flow | 3 | 30 | 0 | 0 | 0 | 0 | 0 | 30 | 56 | 0 | 0 | 0 |
| Number of Lanes | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |

Approach

EB

NB

Opposing Approach

Opposing Lanes

0

0

Conflicting Approach Left

EB

Conflicting Lanes Left

0

1

Conflicting Approach Right

NB

Conflicting Lanes Right

1

0

HCM Control Delay

7.2

6.9

HCM LOS

A

A

| Lane | NBLn1 | EBLn1 |
|------------------------|-------|-------|
| Vol Left, % | 0% | 10% |
| Vol Thru, % | 35% | 90% |
| Vol Right, % | 65% | 0% |
| Sign Control | Stop | Stop |
| Traffic Vol by Lane | 68 | 29 |
| LT Vol | 0 | 3 |
| Through Vol | 24 | 26 |
| RT Vol | 44 | 0 |
| Lane Flow Rate | 86 | 33 |
| Geometry Grp | 1 | 1 |
| Degree of Util (X) | 0.085 | 0.037 |
| Departure Headway (Hd) | 3.569 | 4.072 |
| Convergence, Y/N | Yes | Yes |
| Cap | 1005 | 881 |
| Service Time | 1.584 | 2.088 |
| HCM Lane V/C Ratio | 0.086 | 0.037 |
| HCM Control Delay | 6.9 | 7.2 |
| HCM Lane LOS | A | A |
| HCM 95th-tile Q | 0.3 | 0.1 |

Lanes, Volumes, Timings

1: Cambridge St & Lincoln St

05/28/2019



| Lane Group | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBL | NBT | NBR | SBL |
|-------------------------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 8 | 78 | 1634 | 5 | 18 | 5 | 924 | 157 | 0 | 0 | 3 | 195 |
| Future Volume (vph) | 8 | 78 | 1634 | 5 | 18 | 5 | 924 | 157 | 0 | 0 | 3 | 195 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 10 | 10 | 11 | 11 | 10 | 10 | 11 | 11 | 11 | 11 | 11 | 11 |
| Storage Length (ft) | | 130 | | 0 | | 135 | | 0 | 0 | | 0 | 0 |
| Storage Lanes | | 1 | | 0 | | 1 | | 0 | 0 | | 0 | 0 |
| Taper Length (ft) | | 25 | | | | 25 | | | 25 | | | 25 |
| Lane Util. Factor | 0.95 | 1.00 | 0.95 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | 1.00 | | | | 0.99 | | | 0.98 | | |
| Frt | | | | | | | 0.978 | | | 0.865 | | |
| Flt Protected | | 0.950 | | | | 0.950 | | | | | | |
| Satd. Flow (prot) | 0 | 1463 | 3079 | 0 | 0 | 1456 | 2922 | 0 | 0 | 1407 | 0 | 0 |
| Flt Permitted | | 0.950 | | | | 0.950 | | | | | | |
| Satd. Flow (perm) | 0 | 1463 | 3079 | 0 | 0 | 1456 | 2922 | 0 | 0 | 1407 | 0 | 0 |
| Right Turn on Red | | | | Yes | | | | Yes | | | Yes | |
| Satd. Flow (RTOR) | | | | | | | 21 | | | 139 | | |
| Link Speed (mph) | | | 25 | | | | 25 | | | 25 | | |
| Link Distance (ft) | | | 937 | | | | 490 | | | 338 | | |
| Travel Time (s) | | | 25.6 | | | | 13.4 | | | 9.2 | | |
| Confl. Peds. (#/hr) | | | | 8 | | | | 8 | | | 3 | 3 |
| Confl. Bikes (#/hr) | | | | 14 | | | | 5 | | | | |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.94 | 0.94 | 0.94 | 0.94 | 0.75 | 0.75 | 0.75 | 0.91 |
| Heavy Vehicles (%) | 0% | 4% | 2% | 0% | 0% | 20% | 5% | 1% | 0% | 0% | 0% | 1% |
| Adj. Flow (vph) | 9 | 84 | 1757 | 5 | 19 | 5 | 983 | 167 | 0 | 0 | 4 | 214 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 93 | 1762 | 0 | 0 | 24 | 1150 | 0 | 0 | 4 | 0 | 0 |
| Turn Type | Prot | Prot | NA | | Prot | Prot | NA | | | NA | | Perm |
| Protected Phases | 5 | 5 | 2 | | 1 | 1 | 6 | | | 4 | | |
| Permitted Phases | | | | | | | | | 4 | | | 4 |
| Detector Phase | 5 | 5 | 2 | | 1 | 1 | 6 | | 4 | 4 | | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 10.0 | | 4.0 | 4.0 | 10.0 | | 8.0 | 8.0 | | 8.0 |
| Minimum Split (s) | 10.0 | 10.0 | 15.5 | | 9.5 | 9.5 | 26.5 | | 32.0 | 32.0 | | 32.0 |
| Total Split (s) | 23.0 | 23.0 | 59.0 | | 14.0 | 14.0 | 50.0 | | 37.0 | 37.0 | | 37.0 |
| Total Split (%) | 20.9% | 20.9% | 53.6% | | 12.7% | 12.7% | 45.5% | | 33.6% | 33.6% | | 33.6% |
| Yellow Time (s) | 3.5 | 3.5 | 4.5 | | 3.0 | 3.0 | 4.5 | | 4.0 | 4.0 | | 4.0 |
| All-Red Time (s) | 2.5 | 2.5 | 1.0 | | 2.5 | 2.5 | 1.0 | | 3.0 | 3.0 | | 3.0 |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | | 0.0 | 0.0 | | | 0.0 | | |
| Total Lost Time (s) | | 6.0 | 5.5 | | | 5.5 | 5.5 | | | 7.0 | | |
| Lead/Lag | Lead | Lead | Lag | | Lead | Lead | Lag | | | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | | Yes | Yes | Yes | | | | | |
| Recall Mode | None | None | C-Max | | None | None | C-Max | | None | None | | None |
| Act Effect Green (s) | | 11.3 | 66.3 | | | 6.3 | 59.1 | | | 23.5 | | |
| Actuated g/C Ratio | | 0.10 | 0.60 | | | 0.06 | 0.54 | | | 0.21 | | |
| v/c Ratio | | 0.62 | 0.95 | | | 0.29 | 0.73 | | | 0.01 | | |
| Control Delay | | 63.9 | 35.6 | | | 57.8 | 25.8 | | | 0.0 | | |
| Queue Delay | | 0.0 | 0.0 | | | 0.0 | 0.0 | | | 0.0 | | |
| Total Delay | | 63.9 | 35.6 | | | 57.8 | 25.8 | | | 0.0 | | |

Lanes, Volumes, Timings

1: Cambridge St & Lincoln St

05/28/2019















| Lane Group | SBT | SBR |
|-------------------------|-------|-------|
| Lane Configurations | ↔ | ↗ |
| Traffic Volume (vph) | 1 | 82 |
| Future Volume (vph) | 1 | 82 |
| Ideal Flow (vphpl) | 1900 | 1900 |
| Lane Width (ft) | 11 | 10 |
| Storage Length (ft) | | 0 |
| Storage Lanes | | 1 |
| Taper Length (ft) | | |
| Lane Util. Factor | 1.00 | 1.00 |
| Ped Bike Factor | 1.00 | 0.98 |
| Frt | | 0.850 |
| Flt Protected | 0.953 | |
| Satd. Flow (prot) | 1560 | 1343 |
| Flt Permitted | 0.725 | |
| Satd. Flow (perm) | 1182 | 1323 |
| Right Turn on Red | | Yes |
| Satd. Flow (RTOR) | | 139 |
| Link Speed (mph) | 25 | |
| Link Distance (ft) | 188 | |
| Travel Time (s) | 5.1 | |
| Confl. Peds. (#/hr) | | |
| Confl. Bikes (#/hr) | | 4 |
| Peak Hour Factor | 0.91 | 0.91 |
| Heavy Vehicles (%) | 0% | 1% |
| Adj. Flow (vph) | 1 | 90 |
| Shared Lane Traffic (%) | | |
| Lane Group Flow (vph) | 215 | 90 |
| Turn Type | NA | Perm |
| Protected Phases | 4 | |
| Permitted Phases | | 4 |
| Detector Phase | 4 | 4 |
| Switch Phase | | |
| Minimum Initial (s) | 8.0 | 8.0 |
| Minimum Split (s) | 32.0 | 32.0 |
| Total Split (s) | 37.0 | 37.0 |
| Total Split (%) | 33.6% | 33.6% |
| Yellow Time (s) | 4.0 | 4.0 |
| All-Red Time (s) | 3.0 | 3.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 |
| Total Lost Time (s) | 7.0 | 7.0 |
| Lead/Lag | | |
| Lead-Lag Optimize? | | |
| Recall Mode | None | None |
| Act Effect Green (s) | 23.5 | 23.5 |
| Actuated g/C Ratio | 0.21 | 0.21 |
| v/c Ratio | 0.85 | 0.23 |
| Control Delay | 69.6 | 2.8 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 69.6 | 2.8 |

Lanes, Volumes, Timings

1: Cambridge St & Lincoln St

05/28/2019

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBL | NBT | NBR | SBL |
| LOS | | E | D | | | E | C | | | A | | |
| Approach Delay | | | 37.0 | | | | 26.4 | | | | | |
| Approach LOS | | | D | | | | C | | | | | |
| Queue Length 50th (ft) | | 64 | ~700 | | | 17 | 327 | | | 0 | | |
| Queue Length 95th (ft) | | 114 | #924 | | | 44 | #554 | | | 0 | | |
| Internal Link Dist (ft) | | | 857 | | | | 410 | | | 258 | | |
| Turn Bay Length (ft) | | 130 | | | | 135 | | | | | | |
| Base Capacity (vph) | | 226 | 1855 | | | 112 | 1579 | | | 484 | | |
| Starvation Cap Reductn | | 0 | 0 | | | 0 | 0 | | | 0 | | |
| Spillback Cap Reductn | | 0 | 0 | | | 0 | 0 | | | 0 | | |
| Storage Cap Reductn | | 0 | 0 | | | 0 | 0 | | | 0 | | |
| Reduced v/c Ratio | | 0.41 | 0.95 | | | 0.21 | 0.73 | | | 0.01 | | |

Intersection Summary

Area Type: CBD

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 7 (6%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.95

Intersection Signal Delay: 34.4

Intersection LOS: C

Intersection Capacity Utilization 87.4%

ICU Level of Service E

Analysis Period (min) 15

~ 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.

Splits and Phases: 1: Cambridge St & Lincoln St



Lanes, Volumes, Timings
1: Cambridge St & Lincoln St

05/28/2019



| Lane Group | SBT | SBR |
|-------------------------|------|------|
| LOS | E | A |
| Approach Delay | 49.9 | |
| Approach LOS | D | |
| Queue Length 50th (ft) | 145 | 0 |
| Queue Length 95th (ft) | 224 | 12 |
| Internal Link Dist (ft) | 108 | |
| Turn Bay Length (ft) | | |
| Base Capacity (vph) | 322 | 461 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.67 | 0.20 |
| Intersection Summary | | |




HCM 6th TWSC

2: Lincoln St & Empire St

05/28/2019

Intersection

Int Delay, s/veh 2.6

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|--------------------------|---|------|---|------|------|---|
| Lane Configurations |  | |  | | |  |
| Traffic Vol, veh/h | 26 | 108 | 242 | 0 | 0 | 256 |
| Future Vol, veh/h | 26 | 108 | 242 | 0 | 0 | 256 |
| Conflicting Peds, #/hr | 5 | 0 | 0 | 1 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | Free |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 86 | 86 | 90 | 90 | 94 | 94 |
| Heavy Vehicles, % | 8 | 2 | 7 | 0 | 0 | 3 |
| Mvmt Flow | 30 | 126 | 269 | 0 | 0 | 272 |

| Major/Minor | Minor1 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 546 | 269 | 0 |
| Stage 1 | 269 | - | - |
| Stage 2 | 277 | - | - |
| Critical Hdwy | 6.48 | 6.22 | - |
| Critical Hdwy Stg 1 | 5.48 | - | - |
| Critical Hdwy Stg 2 | 5.48 | - | - |
| Follow-up Hdwy | 3.572 | 3.318 | - |
| Pot Cap-1 Maneuver | 489 | 770 | - |
| Stage 1 | 762 | - | - |
| Stage 2 | 756 | - | - |
| Platoon blocked, % | | - | - |
| Mov Cap-1 Maneuver | 487 | 770 | - |
| Mov Cap-2 Maneuver | 487 | - | - |
| Stage 1 | 762 | - | - |
| Stage 2 | 753 | - | - |

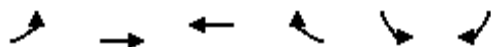
| Approach | WB | NB | SB |
|----------------------|------|----|----|
| HCM Control Delay, s | 11.7 | 0 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBTWBLn1 | SBT |
|-----------------------|----------|-----|
| Capacity (veh/h) | - 692 | - |
| HCM Lane V/C Ratio | - 0.225 | - |
| HCM Control Delay (s) | - 11.7 | - |
| HCM Lane LOS | - B | - |
| HCM 95th %tile Q(veh) | - 0.9 | - |

HCM Unsignalized Intersection Capacity Analysis

3: Lincoln St./Lincoln St

05/28/2019

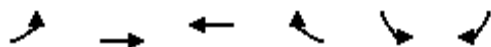


| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|-----------------------------------|------|-------|------|----------------------|------|------|
| Lane Configurations | | ↩ | ↩ | | | |
| Traffic Volume (veh/h) | 4 | 242 | 332 | 7 | 0 | 0 |
| Future Volume (Veh/h) | 4 | 242 | 332 | 7 | 0 | 0 |
| Sign Control | | Free | Free | | Stop | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.50 | 0.50 |
| Hourly flow rate (vph) | 4 | 266 | 365 | 8 | 0 | 0 |
| Pedestrians | | 2 | 3 | | 11 | |
| Lane Width (ft) | | 11.0 | 11.0 | | 0.0 | |
| Walking Speed (ft/s) | | 3.5 | 3.5 | | 3.5 | |
| Percent Blockage | | 0 | 0 | | 0 | |
| Right turn flare (veh) | | | | | | |
| Median type | | None | None | | | |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | 620 | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 384 | | | | 657 | 382 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 384 | | | | 657 | 382 |
| tC, single (s) | 4.1 | | | | 6.4 | 7.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 2.2 | | | | 3.5 | 4.2 |
| p0 queue free % | 100 | | | | 100 | 100 |
| cM capacity (veh/h) | 1186 | | | | 430 | 494 |
| Direction, Lane # | EB 1 | WB 1 | | | | |
| Volume Total | 270 | 373 | | | | |
| Volume Left | 4 | 0 | | | | |
| Volume Right | 0 | 8 | | | | |
| cSH | 1186 | 1700 | | | | |
| Volume to Capacity | 0.00 | 0.22 | | | | |
| Queue Length 95th (ft) | 0 | 0 | | | | |
| Control Delay (s) | 0.2 | 0.0 | | | | |
| Lane LOS | A | | | | | |
| Approach Delay (s) | 0.2 | 0.0 | | | | |
| Approach LOS | | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | 0.1 | | | | |
| Intersection Capacity Utilization | | 30.6% | | ICU Level of Service | | A |
| Analysis Period (min) | | 15 | | | | |

HCM Unsignalized Intersection Capacity Analysis

3: Lincoln St./Lincoln St

05/28/2019



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|-----------------------------------|------|-------|------|----------------------|------|------|
| Lane Configurations | | ↩ | ↩ | | | |
| Traffic Volume (veh/h) | 4 | 242 | 332 | 7 | 0 | 0 |
| Future Volume (Veh/h) | 4 | 242 | 332 | 7 | 0 | 0 |
| Sign Control | | Free | Free | | Stop | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.50 | 0.50 |
| Hourly flow rate (vph) | 4 | 266 | 365 | 8 | 0 | 0 |
| Pedestrians | | 2 | 3 | | 11 | |
| Lane Width (ft) | | 11.0 | 11.0 | | 0.0 | |
| Walking Speed (ft/s) | | 3.5 | 3.5 | | 3.5 | |
| Percent Blockage | | 0 | 0 | | 0 | |
| Right turn flare (veh) | | | | | | |
| Median type | | None | None | | | |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | 620 | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 384 | | | | 657 | 382 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 384 | | | | 657 | 382 |
| tC, single (s) | 4.1 | | | | 6.4 | 7.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 2.2 | | | | 3.5 | 4.2 |
| p0 queue free % | 100 | | | | 100 | 100 |
| cM capacity (veh/h) | 1186 | | | | 430 | 494 |
| Direction, Lane # | EB 1 | WB 1 | | | | |
| Volume Total | 270 | 373 | | | | |
| Volume Left | 4 | 0 | | | | |
| Volume Right | 0 | 8 | | | | |
| cSH | 1186 | 1700 | | | | |
| Volume to Capacity | 0.00 | 0.22 | | | | |
| Queue Length 95th (ft) | 0 | 0 | | | | |
| Control Delay (s) | 0.2 | 0.0 | | | | |
| Lane LOS | A | | | | | |
| Approach Delay (s) | 0.2 | 0.0 | | | | |
| Approach LOS | | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | 0.1 | | | | |
| Intersection Capacity Utilization | | 30.6% | | ICU Level of Service | | A |
| Analysis Period (min) | | 15 | | | | |



HCM 6th AWSC

4: Royal St/Myrick St & Coolidge Rd

05/28/2019

Intersection

| | |
|---------------------------|-----|
| Intersection Delay, s/veh | 7.1 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---------------------|------|---|------|------|------|------|------|---|------|------|------|------|
| Lane Configurations | |  | | | | | |  | | | | |
| Traffic Vol, veh/h | 1 | 35 | 0 | 0 | 0 | 0 | 0 | 16 | 29 | 0 | 0 | 0 |
| Future Vol, veh/h | 1 | 35 | 0 | 0 | 0 | 0 | 0 | 16 | 29 | 0 | 0 | 0 |
| Peak Hour Factor | 0.67 | 0.67 | 0.67 | 0.25 | 0.25 | 0.25 | 0.69 | 0.69 | 0.69 | 0.25 | 0.25 | 0.25 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 |
| Mvmt Flow | 1 | 52 | 0 | 0 | 0 | 0 | 0 | 23 | 42 | 0 | 0 | 0 |
| Number of Lanes | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |

| Approach | EB | NB |
|----------------------------|-----|----|
| Opposing Approach | | |
| Opposing Lanes | 0 | 0 |
| Conflicting Approach Left | | EB |
| Conflicting Lanes Left | 0 | 1 |
| Conflicting Approach Right | NB | |
| Conflicting Lanes Right | 1 | 0 |
| HCM Control Delay | 7.3 | 7 |
| HCM LOS | A | A |




| Lane | NBLn1 | EBLn1 |
|------------------------|-------|-------|
| Vol Left, % | 0% | 3% |
| Vol Thru, % | 36% | 97% |
| Vol Right, % | 64% | 0% |
| Sign Control | Stop | Stop |
| Traffic Vol by Lane | 45 | 36 |
| LT Vol | 0 | 1 |
| Through Vol | 16 | 35 |
| RT Vol | 29 | 0 |
| Lane Flow Rate | 65 | 54 |
| Geometry Grp | 1 | 1 |
| Degree of Util (X) | 0.067 | 0.06 |
| Departure Headway (Hd) | 3.709 | 4.02 |
| Convergence, Y/N | Yes | Yes |
| Cap | 965 | 892 |
| Service Time | 1.733 | 2.037 |
| HCM Lane V/C Ratio | 0.067 | 0.061 |
| HCM Control Delay | 7 | 7.3 |
| HCM Lane LOS | A | A |
| HCM 95th-tile Q | 0.2 | 0.2 |

HCM 6th TWSC
7: Site Access & Lincoln St

05/28/2019

Intersection

Int Delay, s/veh 0.2

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|--------------------------|---|------|------|---|---|------|
| Lane Configurations |  | | |  |  | |
| Traffic Vol, veh/h | 242 | 0 | 3 | 338 | 1 | 6 |
| Future Vol, veh/h | 242 | 0 | 3 | 338 | 1 | 6 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 263 | 0 | 3 | 367 | 1 | 7 |

| Major/Minor | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 0 | 0 | 263 |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |
| Critical Hdwy | - | - | 4.12 |
| Critical Hdwy Stg 1 | - | - | - |
| Critical Hdwy Stg 2 | - | - | - |
| Follow-up Hdwy | - | - | 2.218 |
| Pot Cap-1 Maneuver | - | - | 1301 |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | - | - | 1301 |
| Mov Cap-2 Maneuver | - | - | - |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |

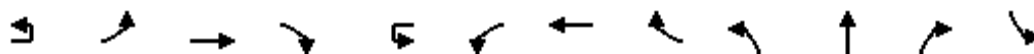
| Approach | EB | WB | NB |
|----------------------|----|-----|------|
| HCM Control Delay, s | 0 | 0.1 | 10.2 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|-----------------------|-------|-----|-----|-------|-----|
| Capacity (veh/h) | 700 | - | - | 1301 | - |
| HCM Lane V/C Ratio | 0.011 | - | - | 0.003 | - |
| HCM Control Delay (s) | 10.2 | - | - | 7.8 | 0 |
| HCM Lane LOS | B | - | - | A | A |
| HCM 95th %tile Q(veh) | 0 | - | - | 0 | - |

Lanes, Volumes, Timings

1: Cambridge St & Lincoln St

05/28/2019



| Lane Group | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBL | NBT | NBR | SBL |
|-------------------------|-------|-------|-------|------|--------|-------|-------|------|-------|-------|------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 9 | 148 | 1420 | 0 | 15 | 0 | 1269 | 202 | 0 | 0 | 0 | 160 |
| Future Volume (vph) | 9 | 148 | 1420 | 0 | 15 | 0 | 1269 | 202 | 0 | 0 | 0 | 160 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 11 | 11 | 11 | 12 | 11 | 11 | 11 | 11 | 11 | 11 | 11 |
| Storage Length (ft) | | 130 | | 0 | | 135 | | 0 | 0 | | 0 | 0 |
| Storage Lanes | | 1 | | 0 | | 1 | | 0 | 0 | | 0 | 0 |
| Taper Length (ft) | | 25 | | | | 25 | | | 25 | | | 25 |
| Lane Util. Factor | 0.95 | 1.00 | 0.95 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | 0.98 | | | | | |
| Frt | | | | | | | 0.979 | | | | | |
| Flt Protected | | 0.950 | | | | 0.950 | | | | | | |
| Satd. Flow (prot) | 0 | 1556 | 3079 | 0 | 0 | 1570 | 2994 | 0 | 0 | 1653 | 0 | 0 |
| Flt Permitted | | 0.950 | | | | 0.950 | | | | | | |
| Satd. Flow (perm) | 0 | 1556 | 3079 | 0 | 0 | 1570 | 2994 | 0 | 0 | 1653 | 0 | 0 |
| Right Turn on Red | | | | Yes | | | | Yes | | | Yes | |
| Satd. Flow (RTOR) | | | | | | | 19 | | | | | |
| Link Speed (mph) | | | 25 | | | | 25 | | | 25 | | |
| Link Distance (ft) | | | 937 | | | | 490 | | | 338 | | |
| Travel Time (s) | | | 25.6 | | | | 13.4 | | | 9.2 | | |
| Confl. Peds. (#/hr) | | | | 11 | | | | 38 | 5 | | 4 | 4 |
| Confl. Bikes (#/hr) | | | | 11 | | | | 15 | | | | |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.95 | 0.95 | 0.95 | 0.95 | 0.25 | 0.25 | 0.25 | 0.86 |
| Heavy Vehicles (%) | 0% | 1% | 2% | 0% | 0% | 0% | 1% | 0% | 0% | 0% | 0% | 1% |
| Adj. Flow (vph) | 10 | 168 | 1614 | 0 | 16 | 0 | 1336 | 213 | 0 | 0 | 0 | 186 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 178 | 1614 | 0 | 0 | 16 | 1549 | 0 | 0 | 0 | 0 | 0 |
| Turn Type | Prot | Prot | NA | | custom | Prot | NA | | | | | Perm |
| Protected Phases | 5 | 5 | 2 | | 1 | 1 | 6 | | | 4 | | |
| Permitted Phases | | | | | 1 | | | | 4 | | | 4 |
| Detector Phase | 5 | 5 | 2 | | 1 | 1 | 6 | | 4 | 4 | | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 10.0 | | 4.0 | 4.0 | 10.0 | | 8.0 | 8.0 | | 8.0 |
| Minimum Split (s) | 10.0 | 10.0 | 15.5 | | 9.5 | 9.5 | 26.5 | | 32.0 | 32.0 | | 32.0 |
| Total Split (s) | 27.0 | 27.0 | 62.0 | | 15.0 | 15.0 | 50.0 | | 33.0 | 33.0 | | 33.0 |
| Total Split (%) | 24.5% | 24.5% | 56.4% | | 13.6% | 13.6% | 45.5% | | 30.0% | 30.0% | | 30.0% |
| Yellow Time (s) | 3.5 | 3.5 | 4.5 | | 3.0 | 3.0 | 4.5 | | 4.0 | 4.0 | | 4.0 |
| All-Red Time (s) | 2.5 | 2.5 | 1.0 | | 2.5 | 2.5 | 1.0 | | 3.0 | 3.0 | | 3.0 |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | | 0.0 | 0.0 | | | 0.0 | | |
| Total Lost Time (s) | | 6.0 | 5.5 | | | 5.5 | 5.5 | | | 7.0 | | |
| Lead/Lag | Lead | Lead | Lag | | Lead | Lead | Lag | | | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | | Yes | Yes | Yes | | | | | |
| Recall Mode | None | None | C-Max | | None | None | C-Max | | None | None | | None |
| Act Effect Green (s) | | 16.3 | 72.4 | | | 5.7 | 55.0 | | | | | |
| Actuated g/C Ratio | | 0.15 | 0.66 | | | 0.05 | 0.50 | | | | | |
| v/c Ratio | | 0.77 | 0.80 | | | 0.20 | 1.03 | | | | | |
| Control Delay | | 66.2 | 20.3 | | | 54.8 | 59.5 | | | | | |
| Queue Delay | | 0.0 | 0.0 | | | 0.0 | 0.0 | | | | | |
| Total Delay | | 66.2 | 20.3 | | | 54.8 | 59.5 | | | | | |

Lanes, Volumes, Timings
1: Cambridge St & Lincoln St

05/28/2019















| Lane Group | SBT | SBR |
|-------------------------|-------|-------|
| Lane Configurations | ↰ ↱ | ↰ ↱ |
| Traffic Volume (vph) | 0 | 58 |
| Future Volume (vph) | 0 | 58 |
| Ideal Flow (vphpl) | 1900 | 1900 |
| Lane Width (ft) | 11 | 11 |
| Storage Length (ft) | | 0 |
| Storage Lanes | | 1 |
| Taper Length (ft) | | |
| Lane Util. Factor | 1.00 | 1.00 |
| Ped Bike Factor | 0.99 | 0.98 |
| Frt | | 0.850 |
| Flt Protected | 0.950 | |
| Satd. Flow (prot) | 1555 | 1378 |
| Flt Permitted | 0.757 | |
| Satd. Flow (perm) | 1232 | 1352 |
| Right Turn on Red | | Yes |
| Satd. Flow (RTOR) | | 139 |
| Link Speed (mph) | 25 | |
| Link Distance (ft) | 188 | |
| Travel Time (s) | 5.1 | |
| Confl. Peds. (#/hr) | | 5 |
| Confl. Bikes (#/hr) | | |
| Peak Hour Factor | 0.86 | 0.86 |
| Heavy Vehicles (%) | 0% | 2% |
| Adj. Flow (vph) | 0 | 67 |
| Shared Lane Traffic (%) | | |
| Lane Group Flow (vph) | 186 | 67 |
| Turn Type | NA | Perm |
| Protected Phases | 4 | |
| Permitted Phases | | 4 |
| Detector Phase | 4 | 4 |
| Switch Phase | | |
| Minimum Initial (s) | 8.0 | 8.0 |
| Minimum Split (s) | 32.0 | 32.0 |
| Total Split (s) | 33.0 | 33.0 |
| Total Split (%) | 30.0% | 30.0% |
| Yellow Time (s) | 4.0 | 4.0 |
| All-Red Time (s) | 3.0 | 3.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 |
| Total Lost Time (s) | 7.0 | 7.0 |
| Lead/Lag | | |
| Lead-Lag Optimize? | | |
| Recall Mode | None | None |
| Act Effect Green (s) | 20.1 | 20.1 |
| Actuated g/C Ratio | 0.18 | 0.18 |
| v/c Ratio | 0.83 | 0.19 |
| Control Delay | 70.5 | 1.1 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 70.5 | 1.1 |

Lanes, Volumes, Timings

1: Cambridge St & Lincoln St

05/28/2019

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBL | NBT | NBR | SBL |
| LOS | | E | C | | | D | E | | | | | |
| Approach Delay | | | 24.9 | | | | 59.5 | | | | | |
| Approach LOS | | | C | | | | E | | | | | |
| Queue Length 50th (ft) | | 122 | 339 | | | 11 | -627 | | | | | |
| Queue Length 95th (ft) | | 187 | #724 | | | 34 | #867 | | | | | |
| Internal Link Dist (ft) | | | 857 | | | | 410 | | | 258 | | |
| Turn Bay Length (ft) | | 130 | | | | 135 | | | | | | |
| Base Capacity (vph) | | 297 | 2026 | | | 135 | 1507 | | | | | |
| Starvation Cap Reductn | | 0 | 0 | | | 0 | 0 | | | | | |
| Spillback Cap Reductn | | 0 | 0 | | | 0 | 0 | | | | | |
| Storage Cap Reductn | | 0 | 0 | | | 0 | 0 | | | | | |
| Reduced v/c Ratio | | 0.60 | 0.80 | | | 0.12 | 1.03 | | | | | |

Intersection Summary

Area Type: CBD

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.03

Intersection Signal Delay: 41.8

Intersection LOS: D

Intersection Capacity Utilization 88.8%

ICU Level of Service E

Analysis Period (min) 15

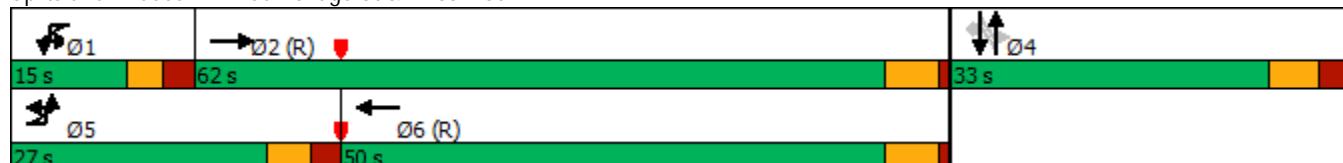
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

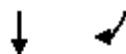
Queue shown is maximum after two cycles.

Splits and Phases: 1: Cambridge St & Lincoln St



Lanes, Volumes, Timings
1: Cambridge St & Lincoln St

05/28/2019






| Lane Group | SBT | SBR |
|-------------------------|------|------|
| LOS | E | A |
| Approach Delay | 52.1 | |
| Approach LOS | D | |
| Queue Length 50th (ft) | 126 | 0 |
| Queue Length 95th (ft) | 187 | 0 |
| Internal Link Dist (ft) | 108 | |
| Turn Bay Length (ft) | | |
| Base Capacity (vph) | 291 | 425 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.64 | 0.16 |
| Intersection Summary | | |

HCM 6th TWSC

2: Lincoln St & Empire St

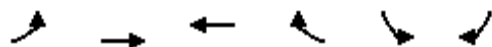
05/28/2019

| Intersection | | | | | | |
|--------------------------|---|--------|---|------|------|---|
| Int Delay, s/veh | 4.1 | | | | | |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations |  | |  | | |  |
| Traffic Vol, veh/h | 22 | 173 | 351 | 0 | 0 | 197 |
| Future Vol, veh/h | 22 | 173 | 351 | 0 | 0 | 197 |
| Conflicting Peds, #/hr | 4 | 0 | 0 | 5 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | Free |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 77 | 77 | 88 | 88 | 73 | 73 |
| Heavy Vehicles, % | 0 | 0 | 1 | 0 | 0 | 2 |
| Mvmt Flow | 29 | 225 | 399 | 0 | 0 | 270 |
| Major/Minor | Minor1 | Major1 | Major2 | | | |
| Conflicting Flow All | 673 | 399 | 0 | - | - | - |
| Stage 1 | 399 | - | - | - | - | - |
| Stage 2 | 274 | - | - | - | - | - |
| Critical Hdwy | 6.4 | 6.2 | - | - | - | - |
| Critical Hdwy Stg 1 | 5.4 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.4 | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3 | - | - | - | - |
| Pot Cap-1 Maneuver | 424 | 655 | - | 0 | 0 | - |
| Stage 1 | 682 | - | - | 0 | 0 | - |
| Stage 2 | 777 | - | - | 0 | 0 | - |
| Platoon blocked, % | | | - | | | - |
| Mov Cap-1 Maneuver | 423 | 655 | - | - | - | - |
| Mov Cap-2 Maneuver | 423 | - | - | - | - | - |
| Stage 1 | 682 | - | - | - | - | - |
| Stage 2 | 775 | - | - | - | - | - |
| Approach | WB | NB | SB | | | |
| HCM Control Delay, s | 14.8 | 0 | 0 | | | |
| HCM LOS | B | | | | | |
| Minor Lane/Major Mvmt | NBTWBLn1 | | SBT | | | |
| Capacity (veh/h) | - | 617 | - | | | |
| HCM Lane V/C Ratio | - | 0.41 | - | | | |
| HCM Control Delay (s) | - | 14.8 | - | | | |
| HCM Lane LOS | - | B | - | | | |
| HCM 95th %tile Q(veh) | - | 2 | - | | | |

HCM Unsignalized Intersection Capacity Analysis

3: Lincoln St./Lincoln St

05/28/2019



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|-----------------------------------|------|-------|------|----------------------|------|------|
| Lane Configurations | | ↰ | ↰ | | | |
| Traffic Volume (veh/h) | 12 | 189 | 483 | 25 | 0 | 0 |
| Future Volume (Veh/h) | 12 | 189 | 483 | 25 | 0 | 0 |
| Sign Control | | Free | Free | | Stop | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.79 | 0.79 | 0.85 | 0.85 | 0.25 | 0.25 |
| Hourly flow rate (vph) | 15 | 239 | 568 | 29 | 0 | 0 |
| Pedestrians | | 4 | 2 | | 19 | |
| Lane Width (ft) | | 11.0 | 11.0 | | 0.0 | |
| Walking Speed (ft/s) | | 3.5 | 3.5 | | 3.5 | |
| Percent Blockage | | 0 | 0 | | 0 | |
| Right turn flare (veh) | | | | | | |
| Median type | | None | None | | | |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | 617 | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 616 | | | | 872 | 606 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 616 | | | | 872 | 606 |
| 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) | 974 | | | | 318 | 499 |
| Direction, Lane # | EB 1 | WB 1 | | | | |
| Volume Total | 254 | 597 | | | | |
| Volume Left | 15 | 0 | | | | |
| Volume Right | 0 | 29 | | | | |
| cSH | 974 | 1700 | | | | |
| Volume to Capacity | 0.02 | 0.35 | | | | |
| Queue Length 95th (ft) | 1 | 0 | | | | |
| Control Delay (s) | 0.7 | 0.0 | | | | |
| Lane LOS | A | | | | | |
| Approach Delay (s) | 0.7 | 0.0 | | | | |
| Approach LOS | | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | 0.2 | | | | |
| Intersection Capacity Utilization | | 41.3% | | ICU Level of Service | | A |
| Analysis Period (min) | | 15 | | | | |

HCM 6th AWSC

4: Royal St/Myrick St & Coolidge Rd

05/28/2019

Intersection

Intersection Delay, s/veh

7

Intersection LOS

A

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations | | 4 | | | | | | 4 | | | | |
| Traffic Vol, veh/h | 3 | 26 | 0 | 0 | 0 | 0 | 0 | 24 | 44 | 0 | 0 | 0 |
| Future Vol, veh/h | 3 | 26 | 0 | 0 | 0 | 0 | 0 | 24 | 44 | 0 | 0 | 0 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.25 | 0.25 | 0.25 | 0.79 | 0.79 | 0.79 | 0.25 | 0.25 | 0.25 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mvmt Flow | 3 | 30 | 0 | 0 | 0 | 0 | 0 | 30 | 56 | 0 | 0 | 0 |
| Number of Lanes | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |

Approach

EB

NB

Opposing Approach

Opposing Lanes

0

0

Conflicting Approach Left

EB

Conflicting Lanes Left

0

1

Conflicting Approach Right

NB

Conflicting Lanes Right

1

0

HCM Control Delay

7.2

6.9

HCM LOS

A

A

| Lane | NBLn1 | EBLn1 |
|------------------------|-------|-------|
| Vol Left, % | 0% | 10% |
| Vol Thru, % | 35% | 90% |
| Vol Right, % | 65% | 0% |
| Sign Control | Stop | Stop |
| Traffic Vol by Lane | 68 | 29 |
| LT Vol | 0 | 3 |
| Through Vol | 24 | 26 |
| RT Vol | 44 | 0 |
| Lane Flow Rate | 86 | 33 |
| Geometry Grp | 1 | 1 |
| Degree of Util (X) | 0.085 | 0.037 |
| Departure Headway (Hd) | 3.569 | 4.072 |
| Convergence, Y/N | Yes | Yes |
| Cap | 1005 | 881 |
| Service Time | 1.584 | 2.088 |
| HCM Lane V/C Ratio | 0.086 | 0.037 |
| HCM Control Delay | 6.9 | 7.2 |
| HCM Lane LOS | A | A |
| HCM 95th-tile Q | 0.3 | 0.1 |




HCM 6th TWSC

7: Site Access & Lincoln St

05/28/2019

Intersection

Int Delay, s/veh 0.2

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|--------------------------|---|------|------|---|---|------|
| Lane Configurations |  | | |  |  | |
| Traffic Vol, veh/h | 188 | 1 | 9 | 506 | 1 | 6 |
| Future Vol, veh/h | 188 | 1 | 9 | 506 | 1 | 6 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 204 | 1 | 10 | 550 | 1 | 7 |

| Major/Minor | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 0 | 0 | 205 |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |
| Critical Hdwy | - | - | 4.12 |
| Critical Hdwy Stg 1 | - | - | - |
| Critical Hdwy Stg 2 | - | - | - |
| Follow-up Hdwy | - | - | 2.218 |
| Pot Cap-1 Maneuver | - | - | 1366 |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | - | - | 1366 |
| Mov Cap-2 Maneuver | - | - | - |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |

| Approach | EB | WB | NB |
|----------------------|----|-----|------|
| HCM Control Delay, s | 0 | 0.1 | 10.2 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|-----------------------|-------|-----|-----|-------|-----|
| Capacity (veh/h) | 704 | - | - | 1366 | - |
| HCM Lane V/C Ratio | 0.011 | - | - | 0.007 | - |
| HCM Control Delay (s) | 10.2 | - | - | 7.7 | 0 |
| HCM Lane LOS | B | - | - | A | A |
| HCM 95th %tile Q(veh) | 0 | - | - | 0 | - |

Table 1 Level of Service – Signalized Intersection

| Intersection | Approach | Movement | 2019 Existing | | | 2024 No-Build | | | 2024 Build | | |
|-----------------------------------|-----------------|--------------|---------------|-----------|------|---------------|-----------|------|------------|-----------|------|
| | | | LOS | Delay (S) | V/C | LOS | Delay (S) | V/C | LOS | Delay (S) | V/C |
| AM Peak Hour | | | | | | | | | | | |
| Cambridge Street & Lincoln Street | Cambridge St EB | UT/L | E | 64.0 | 0.61 | E | 63.8 | 0.61 | E | 63.9 | 0.62 |
| | | T/R | C | 25.6 | 0.84 | C | 35.0 | 0.95 | D | 35.6 | 0.95 |
| | | Approach LOS | C | 27.7 | - | D | 36.4 | - | D | 37.0 | - |
| | Cambridge St WB | UT/L | E | 57.8 | 0.29 | E | 57.8 | 0.29 | E | 57.8 | 0.29 |
| | | T/R | C | 22.7 | 0.64 | C | 25.4 | 0.72 | C | 25.8 | 0.73 |
| | | Approach LOS | C | 23.5 | - | C | 26.1 | - | C | 26.4 | - |
| | Driveway NB | L/T/R | A | 0.0 | 0.01 | A | 0.0 | 0.01 | A | 0.0 | 0.01 |
| | Lincoln St SB | L/T | E | 68.7 | 0.84 | E | 69.6 | 0.85 | E | 69.6 | 0.85 |
| | | R | A | 2.3 | 0.22 | A | 2.4 | 0.22 | A | 2.8 | 0.23 |
| | | Approach LOS | D | 49.3 | - | D | 50.0 | - | D | 49.9 | - |
| | Overall | | C | 28.2 | - | C | 34.0 | - | C | 34.4 | - |
| PM Peak Hour | | | | | | | | | | | |
| Cambridge Street & Lincoln Street | Cambridge St EB | UT/L | E | 65.4 | 0.75 | E | 65.8 | 0.76 | E | 66.2 | 0.77 |
| | | T/R | B | 16.6 | 0.69 | C | 20.2 | 0.80 | C | 20.3 | 0.80 |
| | | Approach LOS | C | 21.8 | - | C | 24.6 | - | C | 24.9 | - |
| | Cambridge St WB | UT/L | D | 54.8 | 0.20 | D | 54.8 | 0.20 | D | 54.8 | 0.20 |
| | | T/R | D | 35.1 | 0.89 | E | 56.0 | 1.02 | E | 59.5 | 1.03 |
| | | Approach LOS | D | 35.3 | - | E | 55.9 | - | E | 59.5 | - |
| | Driveway NB | L/T/R | - | - | - | - | - | - | - | - | - |
| | Lincoln St SB | L/T | E | 69.4 | 0.81 | E | 69.8 | 0.82 | E | 70.5 | 0.83 |
| | | R | A | 1.1 | 0.18 | A | 1.1 | 0.18 | A | 1.1 | 0.19 |
| | | Approach LOS | D | 51.5 | - | D | 52.0 | - | D | 52.1 | - |
| | Overall | | C | 29.9 | - | D | 40.1 | - | D | 41.8 | - |

EB=eastbound, WB=westbound, NB=northbound, SB=southbound

UT=U-Turn, L=Left, T=through, R=Right

LOS= Level of Service, Delay - Average vehicle delay per vehicle, V/C - volume to capacity ratio

Table 2 Level of Service – Unsignalized Intersections

| Intersection | Approach | Movement | 2019 Existing | | | 2024 No-Build | | | 2024 Build | | |
|--------------------------------|----------------|----------|---------------|-----------|------|---------------|-----------|------|------------|-----------|------|
| | | | LOS | Delay (S) | V/C | LOS | Delay (S) | V/C | LOS | Delay (S) | V/C |
| AM Peak Hour | | | | | | | | | | | |
| Lincoln Street & Empire Street | Empire St WB | L/T | B | 11.5 | 0.21 | B | 11.7 | 0.22 | B | 11.7 | 0.23 |
| Lincoln Street & Royal Street | Lincoln St EB | L/T | A | 0.2 | 0.00 | A | 0.2 | 0.00 | A | 0.2 | 0.00 |
| Royal Street & Coolidge Road | Coolidge Rd EB | L/T | A | 7.3 | 0.06 | A | 7.3 | 0.06 | A | 7.3 | 0.06 |
| | Royal St NB | T/R | A | 7.0 | 0.07 | A | 7.0 | 0.07 | A | 7.0 | 0.07 |
| Lincoln Street & Site Access | Lincoln St WB | L/T | N/A | | | N/A | | | A | 7.8 | 0.00 |
| | Site Access NB | L/R | | | | | | | B | 10.2 | 0.01 |
| PM Peak Hour | | | | | | | | | | | |
| Lincoln Street & Empire Street | Empire St WB | L/T | B | 14.2 | 0.39 | B | 14.6 | 0.41 | B | 14.8 | 0.41 |
| Lincoln Street & Royal Street | Lincoln St EB | L/T | A | 0.7 | 0.02 | A | 0.7 | 0.02 | A | 0.7 | 0.02 |
| Royal Street & Coolidge Road | Coolidge Rd EB | L/T | A | 7.2 | 0.04 | A | 7.2 | 0.04 | A | 7.2 | 0.04 |
| | Royal St NB | T/R | A | 6.9 | 0.08 | A | 6.9 | 0.09 | A | 6.9 | 0.09 |
| Lincoln Street & Site Access | Lincoln St WB | L/T | N/A | | | N/A | | | A | 7.7 | 0.01 |
| | Site Access NB | L/R | | | | | | | B | 10.2 | 0.01 |

EB=eastbound, WB=westbound, NB=northbound, SB=southbound

L=Left, T=through, R=Right

LOS= Level of Service, Delay - Average vehicle delay per vehicle, V/C - volume to capacity ratio

N/A=not applicable